APPENDIX A

Draft

WESTLAKE VILLAGES

ENVIRONMENTAL IMPACT REPORT

EIR FILE #1-04
SCH #2004052105

June 25, 2004

LSA

Draft

WESTLAKE VILLAGES

ENVIRONMENTAL IMPACT REPORT

EIR FILE #1-04
SCH #2004052105

Submitted to:
City of Stockton
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June 25, 2004

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ACRONYM LIST

ACOE	Army Corps of Engineers
ADT	average daily traffic
AG	General Agriculture
APN	Assessor's Parcel Number
AQAP	Air Quality Attainment Plan
AWS	all-way stop controlled intersection
C3	row and field crops
CAA	Clean Air Act
California Register	California Register of Historic Places
Caltrans	California Department of Transportation
Cal Water	California Water Services Company
CARB	California Air Resources Board
CCAA	California Clean Air Act
CDFG	California Department of Fish and Game
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
cfs	Cubic feet per second
City	City of Stockton
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
CVPIA	Central Valley Project Improvement Act
CWA	Clean Water Act
dB	decibel
dBA	A-weighted decibel
DEIR	Draft Environmental Impact Report
DHS	California Department of Health Services
DOF	California Department of Finance
DWR	California Department of Water Resources
EIR	Environmental Impact Report
EPA	U.S. Environmental Protection Agency
EVA	emergency vehicle access
FAR	floor-to-area ratio
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Maps
fps	Feet per second
GAMAQI	Guide for Assessing and Mitigating Air Quality Impacts
GPA	General Plan Amendment
gpd	gallons per day
HAP	hazardous air pollutants
HCM	Highway Capacity Manual
hr(s)	hour(s)
I-5	Interstate 5
LAFCO	Local Agency Formation Commission

L_{dn}	day-night average noise
L_{eq}	day-night average noise level
L_{max}	maximum noise level
L_N	percentile noise exceedance levels
LOMR	Letter of Map Revision
LOS	level of service
LTS	less than significant
LUSD	Lodi Unified School District
MBTA	Migratory Bird Treaty Act
MEI	maximally exposed individual
mgd	million gallons per day
mg/L	milligrams per liter
MOU	Memorandum of Understanding
mph	miles per hour
MUD	Municipal Utilities District
M-X	Mixed Use
NA	not available
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
National Register	National Register of Historic Places
ND	not detectable
NMFS	National Marine Fisheries Service
NOI	Notice of Intent
NOP	Notice of Preparation
NO_2	nitrogen dioxide
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 20-42	Local Reclamation District 20-42
ROG	reactive organic gases
ROW	right-of-way
RWCF	Regional Wastewater Control Facility
RWQCB	Regional Water Quality Control Board
SAAQS	State Ambient Air Quality Standards
sec	seconds
SEWD	Stockton East Water District
sf	square feet
SIP	State Improvement Plan
SJAFCA	San Joaquin Area Flood Control Agency
SJCOG	San Joaquin County Council of Governments

SJMSCP	San Joaquin County Multi-Species Habitat Conservation and Open Space Plan
SJVAB	San Joaquin Valley Air Basin
SJVUAPCD	San Joaquin Valley Air Pollution Control District
SO_2	sulfur dioxide
SPAS	Special Planning Area Study
SPS	sewer pump station
SPW	Spanos Park West
SR	State Route
SSSC	side street stop controlled intersection
STC	sound transmission class
stds	standards
STIP	Statewide Transportation Implementation Plan
SU	significant and unavoidable
SWPPP	Storm Water Pollution Prevention Plan
SWQCCP	Storm Water Quality Control Criteria Plan
TDS	Total dissolved solids
U	urban
U2	Scraped and paved
UBC	Uniform Building Code
UCMP	University of California Museum of Paleontology
Φg/L	micrograms per liter
Φg/m	micrograms per meter
$\Phi g/m^3$	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, prezoning, Master Development Plan, Development Agreement, Eight Mile Road Specific Plan Amendment, annexation/sphere of influence change, urban service boundary expansion and tentative map for two parcels: the 671.5-acre "development" parcel and the 11.2-acre marina parcel. Three additional parcels totaling 170 acre (collectively called the Spanos Parcel) will be included in the sphere of influence/urban service area change, General Plan Amendment and Development Agreement, but will not include annexation or prezoning applications. Development of Westlake Villages will include the rezoning and master planning of approximately 683 acres, consisting of the development parcel and marina parcel. The project proposes to change the existing agricultural land use to Mixed Use designations. The Mixed Use designations allow for a variety of land uses, however, the Westlake Villages project proposes only residential uses at a variety of densities on the development parcel. The development plan consists of an Active Adult community and a conventional detached single-family residential development. The Active Adult community would range from 649 to 847 units. The conventional residential development will include between 1,573 to 2,047 units and will consist of gated and non-gated communities. Project amenities include public and semi-private lakes, bike and pedestrian trails, public and private recreational facilities, community center, public and village parks, school, and day care centers. The proposed lakes would provide storm water retention and recreational opportunities for non-motorized boating. Bike and pedestrian trails would be provided on existing levees. Future improvements would be planned for the existing marina, with options to develop and active adult project or conventional housing adjacent to the marina. These future developments are not part of this proposed development project. Development of the marina area is dependent on future market forces. The 170-acres of the Spanos Parcel will be included as part of the sphere of influence/urban service area change but will not be developed as part of this project. The Spanos Parcel will seek a General Plan Amendment to Low-Medium Density Residential land uses and will rely on the Development Agreement to establish a limit for the number of units, and to specify that additional environmental review will be required to address the ultimate development plan.

Project Location

The Master Development Plan Area contains approximately 682.7 acres, located within San Joaquin County (County), near the western portion of the City of Stockton, California. The Spanos Parcel consists of approximately 170 acres, located at the northwest corner of the Master Development Plan Area. The project site is bounded to the north by Eight Mile Road, to the south by Disappointment Slough, to the west by Bishop Cut and Rio Blanco Road, and to the east by Spanos Park West (SPW).

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 Westlake Villages 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 include:

X Monitoring of cultural resource sites

X Mosquito-related health risks

X Issues relating to development of land uses adjacent to the San Joaquin Delta

X Traffic

X Air quality (construction and long-term emissions)

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, aesthetics/light and glare, water supply assessment, hazardous materials/wastes, and utilities and service systems.

1.5 UNAVOIDABLE ADVERSE IMPACTS

Six environmental topics— air quality, public services (parks), land use (including agricultural-related issues), traffic, and population—were identified as being significantly impacted by the proposed project, and these could not be mitigated to a level of insignificance, even with the application of mitigation measures.

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

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 the Urban Service Boundaries and developing north of Eight Mile Road, extending into County jurisdiction, and confronting the agricultural designations in the County's General Plan and zoning classifications.

1.6 PROJECT ALTERNATIVES

The Proposed Project, No Project, Minimum Density, and All Conventional 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 marina and agricultural uses would persist. Potential impacts to water quality and wind erosion would continue unabated under this alternative. The No Project alternative would avoid a majority of the impacts associated with the Proposed Project and is an environmentally superior alternative.

Alternative 2: Minimum Residential Density Alternative

The Minimum Residential Density alternative would create impacts similar to the proposed project. With the Minimum Density Residential Alternative, however, impacts to public services and air quality would be reduced. This is due to the decreased number of individuals generated by this alternative.

Alternative 3: All Conventional Housing Alternative

The All Conventional Housing alternative would create impacts similar to the proposed project, however, impacts associated with air quality, population, public services, and land use would be significantly greater under this alternative due the increased number of individuals, including school-aged children.

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.

Insert Table 1.1.A: Summary of Impacts
Check following page numbers

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 Westlake Villages project (formerly referred to as Paradise Villages). Encompassing approximately 682.7 acres, the Master Development Plan Area proposes to prepare the project site for the construction of Active Adult and single family residential homes on lands that are currently used for agricultural purposes. Also included in the development concept is the modernization and upgrading of the Paradise Point Marina, however this development is dependent on future market forces. The project applicant has requested a General Plan Amendment and Rezoning designation of Mixed Use, M-X, for the entire Master Development Plan Area (682.7 acres). The 170-acre Spanos Parcel (formerly referred to as the Thompson Parcel) will be included in the General Plan Amendment and sphere of influence/urban service area change. The proposed General Plan designation for the Spanos Parcel is Low-Medium Density Residential.

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 May 20, 2004) 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 June 21, 2004. Responses to comments generated by circulating the NOP/Initial Study have been addressed, as appropriate, throughout the document.

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, marina, recreational, and open space uses. The analysis is based upon a review and evaluation of the General Plan Amendment and zone change, Master Development Plan, Development Agreement, annexation processes into the City of Stockton jurisdiction, consultation with the applicant and interested agencies and individuals, review of responses to the Notice of Preparation for the project, consideration of appropriate technical information, and field surveys of the project site and surrounding area.

The project proposes to bring the land under the jurisdiction of the City of Stockton. The General Plan and zoning would be amended to designate the site for Mixed Use (M-X). As a requirement for the M-X designation, a Master Development Plan has been prepared and describes the project concepts and character. It is important to note that the Master Development Plan proposes a range of densities within the project parcels in order to respond to market conditions and the developer's expectations at a specific point. With this strategy, the M-X designation provides the flexibility to focus on a primary development concept, as well as various other uses and intensities. The various density options comply with the criteria established by the M-X zone. Taking the range of densities into consideration, the worst case combination of densities was used as a basis for determining project impacts. This scenario was needed to assess project impacts on traffic, air quality, noise, and sewer and water. From this strategy, limits have been imposed on the project, where necessary, to restrict the density combinations to those analyzed in this DEIR. Other density combinations may also be available, provided the potential effects are no greater than those presented in this document.

As noted in the Development Agreement, the owner shall have the right, and the obligation to develop Westlake Villages in accordance with the Master Development Plan subject to the standards specified in the Development Agreement and the Master Development Plan. Except as noted in the Development Agreement, Master Development Plan and applicable existing City Laws will control the overall design, development, and construction of Westlake Villages, and all improvements and appurtenances in connection therewith, including, without limitation, the permitted uses within Westlake Villages, 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 Westlake Villages.

The owner agrees to develop Westlake Villages as follows: Six years after the Effective Date, Owner shall have developed a minimum of fifty percent (50%) of West Lake based on acreage available for development; twelve years after Effective Date, Owner shall have developed a minimum of seventy-five (75%) of West Lake based on net acreage available for development.

Also as noted in the Development Agreement, the owner shall have the right to modernize and upgrade the existing Paradise Point Marina in accordance with the Master Development Plan subject to the standards specified in the Development Agreement and the Master Development Plan. The Master Development Plan and Development Agreement are presented in Appendix B and C, respectively.

As a result of the relationship of the proposed Westlake Villages project with the adjacent Spanos Park West project, the environmental document prepared for that project serves as a major reference for this DEIR and is, therefore, incorporated by reference in the DEIR. This document is available for review at the City of

Stockton, Department of Community Development, Planning Division, 345 N. El Dorado Street, Stockton, California 95202, phone (209) 937-8266. The document is referred to as follows:

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 commentors:

X Monitoring of cultural resource sites

X Mosquito-related health risks

X Issues relating to development of land uses adjacent to the San Joaquin Delta

X Traffic

$ Air quality (construction and long-term emissions)

2.4 ORGANIZATION OF DOCUMENT

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

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

Chapter 3.0 presents detailed information on the proposed project and development concepts. This chapter describes the number and intensity of uses, project objectives, development intensity options, development standards, open space characteristics, supporting uses, operational characteristics and phasing sequences. This chapter also describes the regional setting and project history, project objectives and discretionary actions being considered, as well as other governmental approvals needed prior to construction.
Chapter 4.0 includes the comprehensive environmental analysis based on project implementation. Under the Existing Setting, those elements associated with the current site and potential constraints to the project are identified, including local sensitivities and controversies. These include all the detailed environmental issue areas comprising the DEIR document. At the beginning of each impact section, Significance Criteria are used to evaluate the project impacts to assess the level of significance prior to mitigation.

Mitigation for each potentially significant impact is presented and conclusions reached prior to discussing other project impacts. Each mitigation measure corresponds to a specific project impact. A final statement concludes the impact significance under Level of Significance after Mitigation.
In addition to these topics, the DEIR includes several sections required by CEQA, including cumulative impacts, growth inducing impacts, irreversible and irretrievable commitment of resources, unavoidable adverse impacts, and project alternatives.

2.5 CONTACT PERSONS

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CHAPTER 3.0 PROJECT DESCRIPTION

3.1 OVERVIEW

The project proposes a General Plan Amendment, prezoning, Master Development Plan, Development Agreement, Eight Mile Road Specific Plan Amendment, and annexation/sphere of influence change for two parcels: the 671.5-acre "development" parcel and the 11.2-acre marina parcel. Three additional parcels totaling 170 acres (collectively called the Spanos Parcel) will be included in the sphere of influence/urban service area change, General Plan Amendment and Development Agreement, but will not include annexation or prezoning applications. Development of Westlake Villages will include the rezoning and master planning of approximately 683 acres, consisting of the development parcel and marina parcel. The development plan consists of an Active Adult community and a conventional detached single-family residential development. The Active Adult community would range from 649 to 847 units. The conventional residential development will include between 1,573 to 2,047 units and will consist of gated and non-gated communities. Project amenities include public and semi-private lakes, bike and pedestrian trails, public and private recreational facilities, community center, public and village parks, school, and day care centers. The proposed lakes would provide storm water retention and recreational opportunities for non-motorized boating. Bike and pedestrian trails would be provided on existing levees. Future improvements would be planned for the existing marina, adjacent to the proposed active adult community in Westlake Villages. These future marina developments are not part of this proposed development project. Development of the marina area is dependent on future market forces. The 170-acres of the Spanos Parcel will be included as part of the sphere of influence/urban service area change but will not be developed as part of this project. The Spanos Parcel will seek a General Plan Amendment to Low-Medium Density Residential land uses and will rely on the Development Agreement to establish a limit for the number of units, and to specify that additional environmental review will be required to address the ultimate development plan.

Local and Regional Setting

The proposed Westlake Villages project is located to the west of the new SPW development, and south of Eight Mile Road. Interstate 5 (I-5) is located approximately 1.5 miles to the east and provide regional access via the Eight Mile Road interchange. The western and southern project boundaries are Bishop Cut and Disappointment Slough, respectively (Figure 3.1.1). Local roadways from Westlake Villages will connect to SPW.

Existing land uses on the development parcel reflect agricultural uses. Adjacent land uses include: SPW to the east, agricultural uses to the west and south (beyond Bishop Cut and Disappointment Slough), and agricultural uses to the north (beyond Eight Mile Road). The Reserve at Spanos Park golf course is also located on the north side of Eight Mile Road across from the project site. The project site is located adjacent to the City, in an area that has recently experienced growth and will likely continue to receive growth pressure. Several small- to large-scale development projects in the vicinity are in various stages of development.

Figure 3.1.1: Project Location and Surrounding Features

The topography of the project site is generally described as level or flat. Very little topographical differences occur over the region. Minor topographical changes are noted from levee structures and drainage improvements. The site gradually slopes towards the west towards Bishop Cut. Drainage canals transect the project site and collect runoff to discharge into Bishop Cut through an upgraded pump station. Disappointment Slough forms the southern boundary of the project site.

Surrounding Projects

Planned Development

Several major developments have been approved in the vicinity of the project, and more are being proposed. Table 3.1.A (Surrounding Planned and Approved Development Projects) presents the development activity within the project vicinity. As shown, overall, approximately 63 percent of development potential for identified projects has been completed, with a remaining potential of 37 percent to be developed.

The City of Stockton periodically monitors the projected buildout of available land within the City boundary. Excluding the proposed subdivision identified in Table 3.1.A, approximately 1,675 acres of residentially zoned vacant land were available for residential development. Of that amount, approximately 1,526 acres were zoned for single family development. Based on average densities for low-medium density residential zoning, this land could produce approximately 7,497 single family units. In areas zoned for higher density residential units, only 285 acres are available for projected buildout. Based on average densities for these zoning districts, approximately 3,871 units could be developed for high density residential housing.

3.2 PROJECT OBJECTIVES

X Satisfy housing demands by providing single family residential housing offering a wide range of product types to attract individuals and families from a broad economic spectrum, as well as providing public recreational facilities, parks, lakes and open space areas designed to meet the needs of future Stockton residents.

X Create a community designed to enhance social interaction. 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; parks, trails, lakes, and large community centers functioning as gathering places for the future residents and enhancing project livability.

X Provide an opportunity to develop residential uses within walking distance of Paradise Point Marina with a mix of upscale commercial and service-oriented businesses, promoting the highest quality development. The project would place a significant number of potential customers within walking distance of these businesses to help ensure in their long-term viability.

X Build a unique community combining the best of modern suburban development practices with the building types and styles of traditional neighborhoods. To create a safe, secure environment with walkable neighborhoods that meet 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 car, to promote and enhance the pedestrian experience.

X To create a safe, secure environment with walkable neighborhoods that meet the lifestyle goals of families with children and elderly alike.

X To design streets and a circulation system resulting in neighborhoods that balance the pedestrian and car, to promote and enhance the pedestrian experience.

X Promote open space within neighborhoods to provide a convenient and safe destination for children to play and families to congregate. To develop a system of lakes that provide scenic vistas, recreation opportunities, that would also be utilized for enhancing the environment, improving water quality, and reducing water demand. Open space would also include a system of trails that would be available to the

public, providing accessibility, recreation opportunities, and a visual amenity enjoyed by the entire community.

Table 3.1.A: Surrounding Planned and Approved Development Projects

NAME	TM #	TOTAL ACREAGE	PROPOSED UNITS	BUILT	REMAINING	PERCENTAGE COMPLETE
Blossom Ranch	16-90 4-00	98.5	339	307	32	91
Bridgeport Trails		54.1	321	321	0	100
Brookside Estates		1,309.3	3,023	2,840	183	94
La Morada	18-88	381.1	1,042	851	191	82
LeBaron Estates		35.6	162	162	0	100
Little John Creek	13-90	85.3	506	449	57	89
Manhattan Plaza		19.98	119	119	0	100
Morada Ranch	3-92	227	515	476	39	92
North Stockton Projects	See below	166.9	688	347	341	50
Spanos Park East		418.2	1,794	1,794	0	100
Weber Sperry Ranch		231	1,092	1,006	86	92
Weston Ranch		1,177.2	5,056	4,675	381	92
Spanos Park West		240.2	1,099	474	593	43
Hatch Ranch	05-01	139	590	0	590	0
Villa Theresa		4.9	39	39	0	100
Villa Antinori	13-02	86.19	357	0	357	0
Camera Community	12-01	83.4	121	40	81	33
Seabreeze I	5-03	9.57	52	0	52	0
Calaveras Estates #2	2-01	6.1	38	0	38	0
Montezuma Estates		2.85	15	0	15	0
		4,776.39	**16,968**	**13,900**	**3,036**	**63**

Source: City of Stockton, 2003.

3.3 SPECIFIC PROJECT DESCRIPTION/OPERATIONAL CHARACTERISTICS

Proposed Project

The proposed Westlake Villages project is a residential development that includes single-family residential housing offering a wide range of product types to attract individuals and families from a broad economic spectrum, as well as providing public recreational facilities, commercial and recreational uses within the marina, and parks, lakes and open space areas designed to meet the needs of future Stockton residents. A special aspect of the proposed project focuses on the needs of seniors (i.e., elderly persons) by providing an adult-oriented community adjacent to the existing Paradise Point Marina. The adult-oriented component will be separated from the conventional residential uses that creates a unique setting specifically designed to meet their special needs and lifestyle requirements.

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 one development scenario for these areas that meets the objectives of this Master Development Plan. The project proposes to change the existing agricultural land use to Mixed Use designations. The Mixed Use designations allow for a variety of land uses, however, the Westlake Villages project proposes only residential uses at a variety of densities on the development parcel.

Table 3.3.A, Land Use Summary, indicates the recommended primary land use and range of land uses considered for each conceptual parcel in the project area.

The proposed Westlake Villages project shares a common boundary with the adjacent Spanos Park West project. Upon full implementation of the proposed Spanos Park West project, a new circulation network will be constructed to serve the proposed project, as well as, the adjacent Spanos Park West development. The internal circulation system consists of a main entrance via Eight Mile Road (Street F). Street F would run south through the project site. Street F would connect to three existing roadways within Spanos Park West. Street F would also connect to internal streets within Westlake Villages that would serve the residential neighborhoods. Figure 3.3.2 provides a design of the circulation system.

Characteristics associated with each project component are presented below.

Residential Land Use. The residential development program for Westlake consists of 24 "Villages" of detached residential units. Seventeen (17) of the villages (A through Q) would be conventional market-rate housing units developed within the range of densities described in Table 3.3.A. Of these residential villages, six (6) villages (G through L) would be designed and constructed as gated, private developments. The other eleven villages (A through F, and M through Q) would be planned and built as open communities with public streets maintained by the City. The remaining seven villages (R through X), located in the southwest quadrant of the project site, would comprise the proposed active senior adult community.

The area dedicated for conventional housing includes approximately 337 acres, with approximately 129 acres set aside for a potential Active Adult Development. Of the combined 466 acres designated for residential use, a minimum of 12 acres shall be developed as village parks, ranging in size from approximately 0.5 to 1.5 acres. As stated in Table 3.3.A, the residential density within any Village would range between 3.5 and 8.0 units/acre. The higher and lower density development has been intermixed throughout the project, permitting the entire range of development within the project similar proximity and equal use 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.

Figure 3.3.1: Conceptual Master Development Plan

Table 3.3.A: Land Use Summary

TITLE	GROSS AREA (ACRES)	PRIMARY USE	SECONDARY USES	RANGE OF DENSITIES (DWELLING UNITS/ACRE)
Village A	14.6	67-88 residential units	See Notes	4.6-6.0
B	19.5	119-156 residential units		6.1-8.0
C	33.5	154-201 residential units		4.6-6.0
D	12.8	78-102 residential units		6.1-8.0
E	16.2	75-97 residential units		4.6-6.0

F	21.8	133-174 residential units		6.1-8.0
G	30.9	108-139 residential units		3.5-4.5
H	17.0	78-102 residential units		4.6-6.0
I	10.8	66-86 residential units		6.1-8.0
J	22.2	78-100 residential units		3.5-4.5
K	23.3	82-105 residential units		3.5-4.5
L	20.6	72-93 residential units		3.5-4.5

M	17.2	79-103 residential units		4.6-6.0
N	26.1	120-157 residential units		4.6-6.0
O	13.7	63-82 residential units		4.6-6.0
P	15.2	70-91 residential units		4.6-6.0
Q	21.4	131-171 residential units		6.1-8.0
R	17.4	80-104 residential units		4.6-6.0
S	19.6	69-88 residential units		3.5-4.5

T	20.5	94-123 residential units		4.6-6.0
U	11.2	68-90 residential units		6.1-8.0
V	15.2	93-122 residential units		6.1-8.0
W	25.0	153-200 residential units		6.1-8.0
X	20.0	92-120 residential units		4.6-6.0
Park Site	12.8	Public Park		
Open Space/Common Landscaping	2.1	Open Space/Recreation		

Eastern Recreation Area	3.2	Open Space/Recreation		
Western Recreation Area	4.7	Open Space/Recreation		
Lake 1 (at Main Entry)	7.9	Open Space/Recreation		
Lake 2 (East of Main Road)	33.5	Open Space/Recreation		
Lake 3 (Active Adult North)	10.1	Open Space/Recreation		
Lake 4 (Active Adult South)	9.1	Open Space/Recreation		
Lake 5 (Community Center)	10.0	Open Space/Recreation		

Sewer Lift Station Parcel	0.3-0.5	Public Facilities		
Storm Water Pump Station Parcel	0.3-0.5	Public Facilities		
Future Fire Station	2.2	Public Facilities		
Future School Site	10.9	Public Facilities		
Marina Parcel	17.1	Commercial/Recreation		Maximum 0.25 Floor Area Ratio
Levee	28.1	Open Space/Recreation		

Spine Roads ROW Dedications	60.5	Public Use		Includes Melones, Consumnes, and Scott Creek
Eight Mile Road ROW Dedication	2.8	Public Use		
TOTALS	**∀ 681.7**	**2,222-2,894 residential units**		

Notes:
Permitted uses on within Villages A-Q include day care/pre-school of up to 3 acres in size. Up to two day care/pre-school facilities shall be permitted within the entire Westlake project area. Residential development for the remaining village acreage shall be based on the density of that specific parcel indicated on Table 3.3.A.
The marina parcel acreage includes 3 acres of parcel 071-120-13 that would be added to the marina parcel upon the processing of a Vesting Tentative Map.
School site may be relocated based on Lodi Unified School District projected demand if Villages R-X are developed as conventional housing and not as an Active Adult community.
The acreage indicated for each Village is the gross area. A minimum of 12 acres within Village A-X shall be set aside for village parks, ranging in size from approximately 0.5 to 1.5 acres.
Range of conventional housing proposed in Villages A-Q is 1,573 - 2,047 units, and proposed Active Adult housing range in Villages R-X is 649 - 847 units.

Figure 3.3.2: Conceptual Circulation Plan

Marina Commercial. The development program for Westlake recognizes and embraces the existing Paradise Point Marina, located on 13.96 acres adjacent to Bishop Cut along the Plan Area western boundary. The Master Development Plan permits the continued commercial and recreational operations of the marina parcel and a small portion of the larger parcel currently used for marina-related purposes, and provides the framework for the future expansion and redevelopment of the marina, including retail shops and restaurant uses. Timing for the future expansion and redevelopment of the marina would be subject to the prevailing market characteristics at the time.

Onsite Storm Water Management and Flood Protection. The facilities that comprise the onsite storm water management program include the man-made lake system, pump station, and underground storm drains, surface inlets and roadway section. All surface runoff will ultimately be conveyed to a man-made lake or aquascape system that extends throughout the project. This system will provide storm water quality treatment, storm water runoff storage and peak attenuation, and storm water conveyance. Specifically, the stormwater management solution focused on (1) an internal underground drainage system within the Westlake community that conveys the 100-year runoff to the outfalls into the proposed manmade lake system, (2) manmade lake system to provide sufficient storage volume for the entire 24-hour 100-year storm event without pumping, (3) stormwater pump station sized to discharge the entire 100-year runoff volume within the lake within a 24-hour period to the normal lake operating level and force main outfall to the river, (4) relocating and maintaining the size of the existing earthen drainage channels on the exterior of the project boundary in order to provide the original storage volume for the offsite watershed, (5) elevate the edge condition of the development along the project boundary to prevent flooding within the development from temporary offsite runoff storage during larger storm events, (6) different levels of stormwater treatment facilities within the manmade lake system that include aeration, biofilters circulation system, aeration, and several different type of constructed wetlands for nuisance flows and wetland planters, and (7) nuisance/dry-weather flow pumps located in each outfall with specially designed lake/storm drain outfall structures preventing lake water into the storm drain.

A. Lake System. The 68-acre manmade Westlake manmade lake system has three primary functions within the Westlake residential development which include: (1) focal aesthetic feature for the community, (2) serves as a primary drainage conveyance facility for the project site, and (3) acts as a lake water quality and urban stormwater runoff treatment facility. The proposed system employs the use of multiple layers of treatment to facilitate water quality improvement through: (1) lake water quality measures (biofilters and aeration), (2) urban stormwater runoff controls (water quality filters and wetland planter areas), and (3) lake retention of runoff. These three elements work either through management of urban stormwater runoff or through lake water quality maintenance to ensure that the water within the lake and any discharge from the Westlake development to the Disappointment Slough is of the same or better quality than that discharged prior to development.

The resulting 68-acre lake receives runoff from the initial tributary residential 566-acre watershed area and the combined estimated normal operating volume of 525 acre-feet for the two interconnected lakes. The lakes are design so they can accommodate temporary storage through surcharging or rise in the lake level for the 100-year 24-hour storm runoff volume from the initial tributary development watershed which is approximately 85 acre-feet. The two lakes have a total estimated storage volume of 88 acre-feet with 1.0 foot of surcharge above the normal operating water surface. The lake will be lined with 30-mil PVC and will have a constructed lake edge system designed specifically to provide a more natural appearance.

B. Underground Storm Drain Systems. The storm drain and street surface drainage directs stormwater runoff to the manmade lakes located along the center of the project. The streets located directly adjacent to the manmade lake will be drained directly to the lake at the low points using curb depressions and conveyed through grassy greenbelt that also provide pretreatment.

The sizes of the main line storm drain trunk pipe diameters at the lake outfalls range from 18-inches to 42-inches, with the average about 33-inches. Maximum 100-year peak design discharges for the storm drain systems at the outfalls range from 5 to 50 cubic feet per second (cfs) depending on the size of tributary area. The average 100-year velocities within the storm drain pipes generally range from 2 to 5 feet per second (fps) for most of the pipes, however, some are in the 8 to 9 fps range.

A specialty outfall structure has been developed for the storm drain connection to the lake in order to prevent the normal lake water surface from entering the storm drain pipe since all the storm drain pipes are located at elevations well below the normal lake water surface. The outfall consists of a large covered concrete weir box located at the edge of the lake which the storm drain pipe will outlet. The weir elevation is located at a height near the top of the box and is the only outlet. All nuisance flows will be forced to drain to one end of the interior of the box where a small submersible pump will be located and will pump the flows to a specially designed vegetated water quality filter at the edge of the lake. The length of the weir is situated to discharge all the overflows also into the water quality filter before entering the lake. The system is designed so that the lake and the storm drain are isolated except during storm periods in order to prevent vector problems or additional water quality issues, however, nuisance flows are captured and treated for lake reuse at all locations.

A permanent groundwater dewatering and collection system will be installed around the entire perimeter of the lake and within the development area, in order to eliminate impacts of existing high groundwater elevations to residential structures. The dewatering system will generally consist of permanent wells located in the public right-of-way and adjacent to the streets. The wells will be connected through a series of collection and pumping systems. The dewatering system will also provide positive operational benefits to the lake liner. The groundwater quality will be monitored and when the water quality reaches the appropriate limits then it will be reused in the lake for "makeup" water.

The following storm water quality treatment features are incorporated into the system design:

Biofilters. The biofilter ponds are typically 3 to 4 feet deep, filled with gravel and submerged 18 to 24 inches below the lake water surface. Water is distributed through the biofilter gravel bed via a herringbone slotted pipe system. A naturally occurring biological mass (microorganisms) will coat the gravel and serve to strip the water passing through the filter of nutrients (nitrogen, phosphorous, etc.) that would otherwise promote algae growth within the lake. A denitrification process will occur in which nitrogen occurring a free ammonia will combine with oxygen to form nitrite then nitrate. In addition, pumping reintroduces oxygen into the lake system, thereby increasing the overall dissolved oxygen levels and promoting a healthy natural environment. The combination of a limited food supply and aerobic conditions within the lake creates an inhospitable environment for undesirable organisms and reduces the potential for lake eutrophication.

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

Vegetated Stormwater Quality Filters and Wetland Planters. Lake water quality is further enhanced and supported by vegetated first flush basins (water quality filters) and submerged wetland planter areas placed along the lake edge. These measures are unique and desirable in that they promote and enhance water quality through naturally occurring biological processes, as opposed to costly and potentially environmentally harmful chemical treatment systems. All nuisance and dry-weather flows will be discharged into these vegetated water quality filters through small sump pumps in each storm drain outfall so this water can be treated before entering the lake and allows complete reuse of water within the development.

C. Storm Water Pump Station. A stormwater pump station facility is considered an integral element necessary to accomplish the flood protection goals since the project is in a levee condition relative to the outfall into the Disappointment Slough. The proposed pump station is not a "peak flow" stormwater pump system since the lake has sufficient storage to attenuate the peak flow and has been designed to allow fluctuation in the operating lake water level. The pumps have been sized to discharge the entire 100-year 24-hour runoff volume within a 24-hour period at a maximum pumping rate of either 42 or 53 cfs depending on the development tributary area. The pump station is designed with a total of four submersible pumps. The station will pump a maximum of 55 cfs with 3-90 horsepower pumps and one standby pump. The lake storage volume can be considered an integral part of the pump station forebay since it is interconnected.

A force main from the stormwater pump station located at the lower lake will discharge through a new adjacent outfall structure into Disappointment Slough. The outfall and force main is designed based on meeting the requirements for the Reclamation District since the force passes through/over the existing earthen levee. The force main will either consist of single 30 inch diameter steel line or double smaller diameter pipes that outlet to a concrete headwall on the river side of the levee. The outlet pipes will be outfitted with tideflex® valves for backflow prevention and rock rip-rap will extend from the headwall to below the river minimum elevation (PACE, 2004).

Urban Design / Landscape Plan. The guiding concept for Westlake Villages is the creation of a high quality development made up of a variety of uses that are complimentary to each other while exemplifying superior design.

Westlake is intended to become a vital part of the City of Stockton while defining the northwestern edge of the urban area. Westlake would be predominately residential in nature, with a generous amount of recreational facilities, parks, open space, and ancillary commercial (daycare) integrated into the overall pattern of the development. The Master Development Plan integrates the existing Spanos Park West residential development to the east, addresses the residential interface with the Paradise Point Marina, includes a circulation network that would logically serve future development to the west on Assessors Parcel Numbers 171-120- 04, 05, and 06 (the Spanos Parcel), and could accommodate additional traffic generated by future development of the Shima Tract to the south. 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 City's General Plan provides the primary guidance for the Master Development Plan. The policies and programs included in the General Plan establish the parameters for commercial use intensity and residential density to be included in the various phases of the project.
The Landscape Plan and Landscape Guidelines creates the structure for Westlake 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 Westlake as a mixed use development of the highest quality.

The Landscape Concept for Westlake 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. These elements of the overall development should 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 Westlake. Figure 3.3.3, Proposed Landscape 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 associated with the modernization of the Paradise Point Marina , 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 Figure 3.3.1.

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.

Figure 3.3.3: Proposed Landscape Plan

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 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 Westlake Villages. The primary intent and purpose of the Master Development Plan are to create the framework of maximum flexibility for residential development, and provide effective design solutions where the residential uses interface with the proposed recreational, institutional and existing commercial uses within Westlake Villages, while remaining consistent with the policies, general land uses and programs of the City's General Plan. The Master Development Plan, and companion EIR, provide information that is required to establish the appropriateness of Westlake Villages 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 Westlake Villages 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.

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

Several findings are required before the Planning Commission and City Council may approve the Westlake Villages 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 Westlake Villages 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 Westlake Villages 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 Zoning 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.

During the review of an application for development of a project within Westlake it could be determined that the proposed project would be inconsistent with the uses and development densities identified and allowed

within the Master Development Plan. In that event, the project or use may be approved, provided: (1) the Design Review Board for Westlake 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 and issues a Conditional Use Permit for the proposed project or use.

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

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 Westlake 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 Westlake.

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 Westlake 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:

X That the proposed project is in conformance with the City's General Plan;

X That the proposed project or use would not create internal inconsistencies within the Master Development Plan Area;

X 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;

X 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 development densities and styles, that is compatible with the surrounding development while creating the northern gateway to the City of Stockton. The private development plans that follow this Master Development Plan should respect the functional relationships between the uses proposed for the project area in order to establish a high quality living environment. The following guidelines apply to the Westlake Villages project:

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

B. Development plans that are intended to implement this 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, lakes, 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 should be limited in number and shared between adjacent neighborhoods, when feasible, to reduce curb cuts and potential conflicts along streets.

D. Public open space and park areas should front onto public streets and roads.

E. 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.

F. Pedestrian and bicycle trails should be incorporated into residential neighborhoods to provide connections to major circulation roads, public transportation facilities and with other pedestrian and bicycle connections within Westlake.

G. The pedestrian circulation system should provide a link from residential development to the levee trail and ultimately the Marina, public recreational facilities, schools and parks within Westlake, and to trails within Spanos Park West leading to the retail/office development.

H. Pedestrian walkways within the public rights-of-way of local streets should be a minimum of five feet (5') in width and constructed according to Stockton City Standards.

I. Combination pedestrian and bicycle paths shall 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.

J. 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.

K. On collector streets, sidewalks and paths should be separated from streets by a parkway strip. The width of the parkway strip shall be a minimum of five feet (5'). The design of the walk and parkway areas shall be reviewed and approved by the Design Review Board and the City Engineer.

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 and the Community Centers and Parks. The pedestrian and bicycle circulation system would also provide links to areas outside Westlake, including the commercial power center site in Spanos Park West, and the Marina to the west. 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 arterial and major collector streets. A twelve-foot (12') wide path/maintenance road, located along the top of Reclamation District levee along Disappointment/Pixley Slough, will provide a connection to the paths within the proposed development and ultimately to the Class II bike path on the south side of Eight Mile Road. Pedestrian access would be provided within the villages by concrete sidewalks, typically separated from the roadway system and a minimum of five feet (5') 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 would be subject to the review and approval of the Design Review Board. Bikeway Plan.

Additionally, traffic calming and pedestrian enhancement features would be incorporated as key elements of the roadway system. The roadway widths will be minimized, in part to reduce the amount of impervious surfaces, but also to promote slower vehicular speeds within the project area. Also included would be roundabouts, traffic circles, and high-visibility crosswalks to further reduce traffic speeds and increase pedestrian safety.

Building Requirements

Commercial: The development program for Westlake recognizes and embraces the existing Paradise Point Marina, located on 13.96 acres adjacent to Bishop Cut along the Plan Area western boundary. The Master Development Plan permits the continued commercial and recreational operations of the Marina Parcel and a small portion of the larger parcel currently used for marina-related purposes, and provides the framework for the future expansion and redevelopment of the marina, including retail shops and restaurant uses. Timing for the future expansion and redevelopment of the marina would be subject to the prevailing market characteristics at the time.

Residential: The residential development program for Westlake consists of 24 villages of detached residential units. Seventeen (17) of the villages (A through Q) would be conventional market-rate housing units developed within the range of densities described in Table 3.3.A. Of these residential villages, six (6) villages (G through L) would be designed and constructed as gated, private developments. The other eleven villages (A through F, and M through Q) would be planned and built as open communities with public streets maintained by the City. The remaining seven villages (R through X), located in the southwest quadrant of the project site, would comprise the proposed active senior adult community.

The area dedicated for conventional housing includes approximately 337 acres, with close to 129 acres set aside for a potential Active Adult Development. Of the combined 466 acres designated for residential use, a minimum of 12 acres shall be developed as village parks, ranging in size from approximately 0.5 to 1.5 acres. As stated in Table 3.3.A, the residential density within any Village would range between 3.5 and 8.0 units/acre. The higher 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 Westlake Villages would occur in phases responding to market demand and other economic factors as determined by the Master Developer or subsequent project developer. 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 Westlake Villages are either fully constructed and operational, or would be constructed concurrently as part of the development which they would serve.

Development within Westlake Villages would commence under an initial phase consisting of: mass grading and dewatering of the project site; construction of the spine roads and lake facilities; installation of underground utilities within the spine road right-of-way including stub-outs serving future phases, and; dedication of right-of-way for widening Eight Mile Road along the project frontage in conformance with the Eight Mile Road Specific Plan; 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, required demolition of on-site improvements, including 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 various on-site lakes, and mass grading of the neighborhood villages into "superpads".

Major/Backbone Infrastructure: The first phase of the project infrastructure consists of: grading and installation of the main collector road, Street "1" from Eight Mile Road to the point which the road intersects with Street "2"; Street "2", the secondary collector road from Eight Mile Road to the intersection with Street "1"; the extension of Scott Creek Drive westerly from the western boundary of Spanos Park West to the end of the street return on the west side of Street "1"; Street "3", the entire segment from the intersection at Street "1" to the intersection at Street "4"; Street "4", the entire residential loop road within the proposed active adult community, as well as all the backbone systems and facilities, including the storm drainage, water, sewer, gas, electricity, cable, telephone, and fiber optics, or any other utility, that would ultimately be installed within the right-of-way of the named streets. Required grading, paving and landscaping for the necessary widening of Eight Mile Road along the project frontage in conformance with the Eight Mile Road

Specific Plan. Road improvements within the initial phase of development may only require paving of half of Street "2" until such time as the full pavement section is warranted by traffic volumes or construction traffic as determined by City's Director of Public Works. The extension of Consumnes Drive from the western boundary of Spanos Park West to the intersection of Street "2" shall be completed as part of the initial phase, chiefly due to infrastructure requirements. The first phase street landscaping improvements may be constructed on one or both sides of the completed roadway as agreed to by the City's Community Development Director, City Engineer and Public Works Director.

Construction of access streets, collector streets and service roads required to serve a particular project or parcel within the Master Development Plan Area may be constructed in the initial phase of development.

Phase IB: It is anticipated that final improvements would commence on villages A, B, C, E, F, K, R, V, W and X under this phase. This represents approximately 50 percent of the proposed residential development for the project. Phase I and subsequent phases of development may also include the construction of additional access streets, collector streets or service roads to specific projects or parcels.

Phase II: It is anticipated that final improvements would commence on villages L, N, S, and U under this phase.

Phase III: Within this phase it is anticipated that final improvements would commence on villages G, T, and P.

Phase IV: It is anticipated that final improvements would commence on villages H, I and M under this phase.

Phase V: Representing the final phase, it is anticipated that final improvements would commence on villages D, O, and Q. The extension of Melones Street from the western boundary of Spanos Park West to the intersection of Street "E" would need to be completed prior to final occupancy of any residential units in this neighborhood pod.

Phase X: Construction would begin on village O.

The Westlake Master Development Plan also permits phasing between and among the portions of Westlake. If the infrastructure necessary to serve a particular area within Westlake has been completed, the owner, developer, and/or successor-in-interest may construct all, or a portion, of an approved project before any other project developer has commenced construction. The owner, developer, and/or successor-in-interest may initiate construction on any given parcel prior to the build-out of another parcel, provided that the infrastructure necessary to serve such parcel would be completed prior to occupancy. The phasing schedule for the proposed development is meant to be a general guide for project sequencing and is not a fixed requirement for the project. Development phasing is expected to be a flexible and dynamic process that allows adjustments for fluctuations in market demand and changing economic conditions.
Circulation Phasing: The initial phase of the project infrastructure consists of constructing the entire system of minor arterial streets, including: the main collector Street "1" from Eight Mile Road to the point which the road connects with secondary collector Street "2"; minor arterial Street "2", from Eight Mile Road to the intersection with the minor arterial Street "1"; the extension of Scott Creek Drive from the western boundary of Spanos Park West to the intersection of street "1"; Street "3", the access road of the proosed active adult community; and residential loop Street "4" providing internal vehicular circulation within the proposed Active Adult community. Because construction of these streets will be completed prior to commencing final improvements within any Villages, primary access to the project for construction and ultimately for residents will be assured. Street "2" from Eight Mile Road will be used as the primary access point for construction-related trucks and equipment, delivery of materials, etc. Additional vehicular access will be provided into the project for subsequent phases when construction of the extension of Consumnes Drive from Spanos Park West to Street "2" is completed. The interior vehicular circulation within Villages will be addressed as part of the phase construction planning, based on the conditions inherit to the specific Villages.

Land Use Changes
Approval of the requested M-X General Plan and zoning designations will require a General Plan Amendment and rezoning. The existing County General Plan designations will be modified from General Agriculture (for the development and marina parcels) to Mixed Use in the City of Stockton General Plan. Similarly, existing County zoning designations of AG-40 (General Agriculture) will be changed to M-X in the City's zoning code. The Spanos Parcel will be redesignated as Low-Medium Density Residential within the City's General Plan.

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 (#1-04). In accordance with CEQA, prior to taking action on the proposed Mixed Use designation 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 General Plan Designation. The request is for a General Plan Amendment (City File #GPA 3-04) from General Agriculture designations (for the development and marina parcels) to the Mixed Use General Plan designation (see Figure 3.4.1). This designation is based on the premise that the applicant develops a concept plan that is distinctly unique to the project site, establishes development objectives and design guidelines, and submits the Master Development Plan to the City for public review and consideration. The designation is meant to provide the applicant with development flexibility that is ordinarily not included in traditional General Plan categories. The designation is intended to apply to large properties that can accommodate a wide range of residential and non-residential land uses as determined on a case-by-case basis. The project proposes to change the existing agricultural land use to Mixed Use designations. The Mixed Use designations allow for a variety of land uses, however, the Westlake Villages project proposes only residential uses at a variety of densities on the development parcel. Development of the marina would depend on future market forces. The General Plan Amendment requires a Planning Commission recommendation and City Council approval.

Figure 3.4.1: Proposed General Plan Designations

Figure 3.4.2: Proposed Zoning

Low-Medium Density Residential. This designation is proposed for the Spanos Parcel (City File #GPA 3-04) from Commercial Recreation to Low-Medium Density Residential.

Mixed Use Zoning District. Complementing the Mixed Use General Plan designation is a request for a rezone (City File #Z-4-04) from County AG-40 district to the City of Stockton Mixed Use (M-X) zoning district of the City's zoning code (Figure 3.4.2). 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. Prezoning applications are not being requested for the Spanos Parcel.

Master Development Plan. This Conceptual Master Development Plan (City File #MDP 1-04) 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 1-04) 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 M-X project and will ensure that the applicant will develop the M-X 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 Spanos Parcel.

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

Amend Eight Mile Road Specific Plan. The layout of the M-X project requires an adjustment to an access road location identified in the adopted Eight Mile Road Specific Plan and requires a Specific Plan Amendment (City File #SPA 3-04). The adopted Specific Plan does not specify an intersection or driveway location on Eight Mile Road that would serve the proposed project. A proposal to provide two new intersection locations has been included in the Circulation Plan (Figure 3.3.2) to accommodate the project site layout of uses and parcels. The request to amend the Eight Mile Road Specific Plan to adjust the roadway accesses is addressed in this DEIR document. The Specific Plan Amendment requires a Planning Commission recommendation and City Council approval.

Tentative Map. With approval of the applicant's request to amend the City's General Plan and zoning designation to M-X, and adoption of the Master Development Plan and approval of the Development Agreement, a tentative map (City File #18-04) 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	SPHERE OF INFLUENCE	ANNEXATION	URBAN SERVICES AREA BOUNDARY CHANGE	GENERAL PLAN AMENDMENT (GPA #3-04)	ZONE CHANGE (PRE-ZONING) (Z-4-04)	MASTER DEVELOPMENT PLAN (MDP #1-04)	DEVELOPMENT AGREEMENT (DA #1-04)	SITE PLAN REVIEW	EIGHT MILE ROAD SPECIFIC PLAN AMENDMENT (SPA #3-04)	TENTATIVE MAP (TM #18-04)	STORM-WATER DISCHARGE PUMP STATION	SECTION 401* PERMIT; NPDES PERMITT	STREAM-BED ALTER-ATION*	HABITAT CONSERVA-TION PLAN AMENDMENT (MSCP)
City Council	A	A	A	A	A	A	A		A					
City Planning Commission				R	R	R	R		R	A				
Development Review Committee								R	R	R				
Community Development Director								A						
LAFCO	A	A												
Lodi Unified School District								A						
Regional Water Quality Control Board											A	A		
California Department of Fish and Game													A	
U.S. Army Corps of Engineers														
State Lands Commission											A			
State Reclamation Board/RD 20-42											A			
SJCOG														A

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

CHAPTER 4.0 ENVIRONMENTAL ANALYSIS

INTRODUCTION

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

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

Format for Environmental Analyses

The purpose of this chapter is to present information on the various environmental topics that are relevant to the Westlake Villages 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 Westlake Villages on the environment, the DEIR document adheres to the following sequence:

X	Existing Setting
X	Impact Significance Criteria
X	Impacts and Mitigation Measures
X	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

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

4.1.1 Existing Setting

Landform

Topographical features associated with the project site are illustrated on Figure 4.1.1. The site is nearly flat except for levees, channels, and roadway embankments. The site drains towards the northwest from an elevation of -1 foot at the eastern boundary to -7 feet at the western boundary. A shallow borrow area exists within the project site; this site was used during reconstruction of the Bishop Tract levee.

Geological Conditions

The site lies within the western part of the Great Valley Geomorphic Province of California. The valley is about 400 miles long and averages about 50 miles wide, and comprises about 20,000 square miles. The valley has been filled with a thick sequence of marine and non-marine sediments from the late Jurassic to Holocene. The uppermost strata of the Great Valley 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 Sierra Nevada Mountains to the east. Granitic and metamorphic rocks outcrop along the eastern and southeastern flanks of the valley. Marine sedimentary rocks outcrop along most of the western, southwestern, southern, and southeastern flanks; and volcanic rocks and deposits outcrop along the northeastern flanks of the valley. The valley geomorphology includes dissected uplands, low alluvial plains and fans, river flood plains and channels, and overflow lands and lake bottoms.

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

The project site is underlain by weakly consolidated Pleistocene-age clay, silt, sand, and gravel alluvium of the Modesto Formation. Within the project area, the Modesto Formation overlies Pleistocene alluvium of the Riverbank Formation. At the western portions of the site where elevations are lower, the Modesto Formation is overlain at the surface by Holocene-age alluvium. This alluvium consists of unconsolidated organic rich silt and clay which was most likely deposited by flooding caused by rising sea levels. The rising and falling of sea levels created tule marshes across the Delta. Peat and organic silt and clay eventually formed after repeated burial of the tules (Kleinfelder, 2003).

Regional Faulting

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

Figure 4.1.1: Topographical Features

Table 4.1.A: Significant Regional Faults

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

Source: Kleindelder, Inc., 2003.
*Notes: * Moment Magnitude: the estimation of an earthquake magnitude by using the seismic moment which is a measure of an earthquake size utilizing rock rigidity, amount of slip, and area of rupture.*

Soils Data

Field investigations performed at and near the project site indicate that the site is underlain by low-organic silty and sandy clay to depths ranging from about 2 to 9 feet below existing site grade. The consistency of the clay ranged from medium stiff in the upper 2 feet increasing to stiff to hard. At 2 to 9 feet, the soil is composed of interbedded materials of medium dense to dense silty and clean sand and very-stiff to hard silt. Finally, below 9 feet, soils consist of highly-interbedded and discontinuous strata of silty clay, sandy clay, silty sand, clean sand, and silt.

Low organic soils in the western portion of the site are overlain by highly compressible and weak organic silt and clay. Small quantities of highly-organic and fibrous peat are expected to occur (Kleinfelder, 2003).

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

Guard clay loam, drained, 0 to 2 percent slopes: these very deep, poorly drained, nearly level soils are found on basin rims. The soils are formed in alluvium derived from mixed rock sources. Depth to water table is usually more than 5 feet excepted in areas where water perches on weakly cemented substratum. This soil unit is suited to irrigated row and field crops.

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

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

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

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

Groundwater

Generally, ground water depths range from 7 to 8.5 feet below existing grade in the eastern areas of the site to 3.5 to 5 feet in the remainder of the site. Lower groundwater levels in the eastern portions of the project site are attributed to the extensive dewatering that occurred for the adjacent Spanos Park West project. The general contractor for the SPW project has indicated a permanent drop in ground water levels within the SPW site (Kleinfelder, 2003).

4.1.2 Impact Significance Criteria

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

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

GEO-b Potential constraints to development as a result of seismic hazards within the study area; and,

GEO-c Potential constraint to development as a result of soils and geologic conditions in the area of the proposed project.

4.1.3 Impacts and Mitigation Measures

Potentially Significant Effects

Impact GEO-1: Development of the project site would include substantial grading activities that could result in soil erosion (Significance Criterion GEO-a).
Implementation of the proposed project would require grading for proposed roadways, infrastructure, and superpads. Exposed soils are considered erodible when subjected to concentrated surface flow. Within the site, increased erosion may occur on unprotected rough graded surfaces if they are exposed to rainfall and surface runoff.

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

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

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

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

A majority of the soils on the project site are high in clay content and dense. These soils are generally not susceptible to liquefaction. However, liquefaction tests performed on the project site indicate that strata of sand located between 5 and 32 feet may be susceptible to liquefaction during strong ground shaking along the Great Valley fault. Ten tests sites indicated this potential. The potential for liquefaction based on ground shaking from other faults is considered low (Kleinfelder, 2003).

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

X		An analysis of seismic hazards anticipated at the project site from regional faults.
	X	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.
X		The project applicant will incorporate the recommendations of the seismicity report into the design for all structures proposed at the project site. All structures will be designed to withstand the anticipated seismic hazards determined in the seismicity report.

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

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

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

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

The organic silt and clay located in the western portion of the project site is highly compressible and weak. These soils are unsuitable for the proposed structures, unless post-tensioned slab foundations are used.

Ground water occurs on the project site between 3.5 to 8.5 feet below site grade. The geotechnical study indicates that shallow ground water is potentially the most significant consideration in constructing the proposed project. These shallow ground water levels could lead to subgrade instability. These impacts could be greatest in winter months for residences located near levees due to "underseepage."

The geotechnical study indicates that clay soils on the project are suitable for constructing a clay liner for the onsite lakes, however, the study recommends further testing prior to and during construction of the liners. Measures are provided below to minimize any potential impacts (Kleinfelder, 2003).

Mitigation Measure GEO-3a: The site specific geotechnical study prepared for the proposed project site provides information on the suitability of excavated material as engineered fill. The study also provides recommendations for treating onsite soils and alternatives to using onsite soils as engineered fill. The geotechnical study should be amended to include the following:

X Specify measures for reuse or disposal of excavated material.

X The time between excavation and reuse of excavated material should be minimized. Provisions for adequate stockpile coverage and protection from wind and water erosion during the entire storage period.

X Include specific information regarding the eventual reuse or disposal site, transportation methods, disposal reuse management, and schedule.

Mitigation Measure GEO-3b: To mitigate potential impacts of expansive soils, construction of the proposed project should consider using post-tensioned slab foundations designed to resist and/or span the expansive soils. The geotechnical study provided in Appendix D provides specific information regarding various construction options for building on expansive soils and drainage considerations. Homeowners should be made aware of the risks associated with expansive soils and the importance of maintaining positive drainage to convey water away from structures.

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

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

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

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

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

4.1.4 Level of Significant after Mitigation

The mitigation measures outlined above will reduce impacts associated with soils, geology, and seismicity to less than significant levels. Approval of the site specific geotechnical study should ensure that there will be no project impacts associated with soils and geology. The erosion control plan will ensure that erosion and sedimentation deposition will be minimized during and after construction.

4.2 AIR QUALITY

Air quality modeling data is provided in Appendix E.

4.2.1 Existing Setting

State CEQA Guidelines state that a project would normally have a significant adverse air quality impact if project-generated pollutant emissions would: cause a violation of an ambient air quality standard or worsen an existing violation; contribute substantially to an existing or projected air quality violation; expose sensitive receptors to substantial pollutant concentrations; or conflict with adopted environmental plans, policies, or regulations for air pollutants (CEQA Guidelines, 1998).

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 Airport station (Western Regional Climatic Center, 1999). Monthly average temperature recorded at the Stockton Airport station for the last forty years ranges from 45.0 F in January to 77.7 F in July. January is typically the coldest month in this area. The Stockton Airport monitoring station also records precipitation throughout the year. Average rainfall measured for the last forty years varied from 2.84 inches in January to 0.79 inch or less between May and October, with an average annual total of 13.95 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 (NOx) 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.

The six criteria pollutants are ozone (O_3), carbon monoxide (CO), particulates less than ten microns (PM_{10}), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), and lead (Pb). In 1997, the EPA promulgated a new national ambient air quality standard for $PM_{2.5}$, or particulate matter 2.5 microns or less in diameter. The $PM_{2.5}$ standard complements existing national and state ambient air quality standards that target the full range of

Figure 4.2.1: Air Quality Monitoring Stations

inhalable PM_{10}. The California Air Resource Board (CARB) and local air districts will be developing Air Quality Attainment Plans (AQAPs) for incorporation into State Implementation Plans (SIP) to reduce unhealthful levels of $PM_{2.5}$ in areas violating the new federal standards.

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 six 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.

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.

Table 4.2.A: Ambient Air Quality Standards

POLLUTANT	AVERAGING TIME	CALIFORNIA STANDARDS[1]		FEDERAL STANDARDS[2]		
		CONCENTRATION[3]	METHOD[4]	PRIMARY[2,5]	SECONDARY[2,6]	METHOD[7]
Ozone (O_3)	1-Hour	0.09 ppm (180 :g/m^3)	Ultraviolet Photometry	0.12 ppm (235 :g/m^3)[8]	Same as Primary Standard	Ultraviolet Photometry
	8-Hour	–		0.08 ppm (157 :g/m^3)		
Respirable Particulate Matter (PM_{10})	24-Hour	50 :g/m^3	Gravimetric or Beta Attenuation*	150 :g/m^3	Same as Primary Standard	Inertial Separation and Gravimetic Analysis
	Annual Arithmetic Mean	20 :g/m^3*		50 :g/m^3		
Fine Particulate Matter ($PM_{2.5}$)	24-Hour	No Separate State Standard		65 :g/m^3	Same as Primary Standard	Inertial Separation and Gravimetic Analysis
	Annual Arithmetic Mean	12 :g/m^3*	Gravimetric or Beta Attenuation*	15 :g/m^3		
Carbon Monoxide (CO)	8-Hour	9.0 ppm (10 mg/m^3)	Nondispersive Infrared Photometry (NDIR)	9 ppm (10 mg/m^3)	None	Nondispersive 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 :g/m^3)	Same as Primary Standard	Gas Phase Chemiluminescence
	1-Hour	0.25 ppm (470 :g/m^3)		–		
Lead	30-day average	1.5 :g/m^3	Atomic Absorption	–	–	High Volume Sampler and Atomic Absorption
	Calendar Quarter	–		1.5 :g/m^3	Same as Primary Standard	
Sulfur Dioxide (SO_2)	Annual Arithmetic Mean	–	Ultraviolet Fluorescence	0.030 ppm (80 :g/m^3)	–	Spectrophotometry (Pararosaniline Method)
	24-Hour	0.04 ppm (105 :g/m^3)		0.14 ppm (365 :g/m^3)	–	
	3-Hour	–		–	0.5 ppm (1300 :g/m^3)	
	1-Hour	0.25 ppm (655 :g/m^3)		–	–	
Visibility Reducing Particles	8-Hour	Extinction coefficient of 0.23 per kilometer - visibility of 10 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 :g/m^3	Ion Chromatography*			
Hydrogen Sulfide	1-Hour	0.03 ppm (42 :g/m^3)	Ultraviolet Fluorescence			
Vinyl Cloride[9]	24-Hour	0.01 ppm (26 :g/m^3)	Gas Chromatography			

Source: CARB, 2003

Notes:[1] California standards for ozone; carbon monoxide (except Lake Tahoe); sulfur dioxide (1 and 24 hour); nitrogen dioxide; suspended particulate matter,PM_{10} and visibility reducing particles are values 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 the 24-hour standard is attained when 99 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. For $PM_{2.5}$ the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact U.S. 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 CARB 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 CARB 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	PRIMARY EFFECTS
Ozone	Atmospheric reaction of organic gases with nitrogen oxides in sunlight.	Aggravation of respiratory and cardiovascular diseases. Irritation of eyes. Impairment of cardiopulmonary function. Plant leaf injury.
Nitrogen Dioxide (NO_2)	Motor vehicle exhaust. High temperature stationary combustion. Atmospheric reactions.	Aggravation of respiratory illness. Reduced visibility. Reduced plant growth. Formation of acid rain.
Carbon Monoxide (CO)	Incomplete combustion of fuels and other carbon containing substances, such as motor exhaust. Natural Events, such as decomposition of organic mater.	Reduced tolerance for exercise. Impairment of mental function. Impairment of fetal development. Death at high levels of exposure. Aggravation of some heart diseases (angina).
Suspended Particulate Mater (PM_{10} and $PM_{2.5}$)	Stationary combustion of solid fuels. Construction activities. Industrial processes. Atmospheric chemical reactions.	Reduced lung function. Aggravation of the effects of gaseous pollutants. Aggravation of respiratory and cardiorespiratory diseases. Increased cough and chest discomfort. Soiling. Reduced visibility.
Sulfur Dioxide (SO_2)	Combustion of sulfur containing fossil fuels. Smelting of sulfur bearing metal ores. Industrial processes.	Aggravation of respiratory diseases (asthma, emphysema). Reduced lung function. Irritation of eyes. Reduced visibility. Plant injury. Deterioration of metals, textiles, leather, finishes, coatings, etc.
Lead (Pb)	Contaminated soil.	Impairment of blood function and nerve construction. Behavioral and hearing problems in children.

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	Severe Non-attainment	Severe Non-attainment
Ozone - 8 hour	No State standard	Designation to be determined
PM_{10}	Non-attainment	Serious Non-attainment
$PM_{2.5}$	No State standard	Designation to be determined
CO	Attainment	Attainment/Unclassified
NO_2	Attainment	Attainment/Unclassified
All others	Attainment/Unclassified	Attainment/Unclassified

Source: CARB, 2003.

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.

Local Air Quality

The project site is located in San Joaquin County under SJVAPCD jurisdiction. San Joaquin County's major air quality problems occur from late spring through early winter. From May to October, high ozone levels are a recurring problem due to the region's intense heat and sunlight. Pollution problems also occur from October through January due to frequent strong temperature inversions which trap pollutants. During these stagnant conditions, pollutants have a tendency to exceed the ambient air quality standards.
The CARB and SJVAPCD maintain ambient air quality monitoring stations throughout the region; the closest air quality monitoring station to the proposed project is the Stockton-Hazelton station with data for most criteria pollutants. Tables 4-2.D and 4-2.E illustrate the pollutants monitored at this air monitoring station.

The ambient air quality data in Tables 4-2.D and 4-2.E show that nitrogen dioxide and carbon monoxide levels are below the relevant State and federal standards at this station. The PM_{10} level exceeded the State standards in each of the past three years, but met the federal standard every year for the last three years. Ozone levels exceeded the State one hour standard in each of the past three years, ranging from 2 to 5 days a year; the federal one hour standard was not exceeded at the Stockton-Hazelton station. Federal eight hour ozone standard was exceeded once in 2001 in the past three years. Federal $PM_{2.5}$ standard was exceeded once in 2000, twice in 2001, and was not exceeded in 2002. Sulfur dioxide levels are not monitored in the SJVAB because no exceedance of sulfur dioxide standard has been recorded in the past ten years.

Historic ambient air quality data are used in an air quality model to determine the classification status for the region. As a result of the non-attainment status, the SJVAPCD is required to prepare an Air Quality Attainment Plan (AQAP), which consists of emission reductions strategies and implementation of these strategies. The implementation of the AQAP for the region is the responsibility of many agencies, including the County Air Pollution Control District, County Planning Division, San Joaquin County Council of Governments (SJCOG), California Department of Transportation (Caltrans), all the cities in the County, Stockton Metropolitan Transit District, and CARB.

An initial AQAP was prepared in 1991, by SJVAPCD, pursuant to federal and State clean air legislation, and addressed the 1988 California Clean Air Act (CCAA) requirements with respect to the ozone standards. In addition, a progress report is required to be submitted every three years that summarizes the progress made by the SJVAPCD in meeting the schedules for developing, adopting and implementing the air pollution control measures contained in the AQAP. The 1991 AQAP was updated in 1994 and it was shown that attainment of the federal ozone standard would be met in 1999. However, a conversation with a SJVAPCD employee, John Cadrett, revealed that ozone is being reclassified from serious to severe non-attainment status. The voluntary reclassification of ozone provide SJVAPCD with more time to promulgate effective and feasible control measures, instead of the stringent requirements stated in the CCAA. The stringent requirements and unreasonable control measures would cause economic hardship and unnecessary burdens on communities. The reclassification of the ozone status will allow SJVAPCD to promulgate all feasible control measures to reduce emissions by the new attainment deadline date, year 2005. The control measures developed are for stationary sources, mobile sources, and indirect sources.

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.

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

	One-Hour Carbon Monoxide		One-Hour Ozone		Coarse Suspended Particulate (PM_{10})		Nitrogen Dioxide	
	Max. 1-Hour Conc. (ppm)	Number of Days Exceeded	Max. 1-Hour Conc. (ppm)	Number of Days Exceeded	Max. 24-Hour Conc. ($\Phi G/M^3$)	Number of Days Exceeded	Max. 1-Hour Conc. (ppm)	Number of Days Exceeded
State Stds.	> 20 ppm/1 hr		> .09 ppm/1 hr		> 50 $\Phi g/m^3$, 24 hrs		> .25 ppm/1 hr	
2002	5.2	0	0.10	2	87	10	0.08	0
2001	8.4	0	0.10	5	140	10	0.08	0
2000	6.5	0	0.11	4	91	9	0.10	0
MAXIMUM	**8.4**		**0.11**		**140**		**0.10**	
Federal Stds.	> 35 ppm/1 hr		> .12 ppm/1 hr		> 150 $\Phi g/m$, 24 hrs		0.053 ppm, annual average	
2002	5.2	0	0.10	0	87	0	0.021	0
2001	8.4	0	0.10	0	140	0	0.019	0
2000	6.5	0	0.11	0	91	0	0.021	0
MAXIMUM	**8.4**		**0.11**		**140**		**0.021**	

Sources: CARB and EPA, 2000 to 2002

Table 4.2.E: Ambient Air Quality at Stockton Hazelton Street Air Monitoring Station

	Eight-Hour Carbon Monoxide		Eight-Hour Ozone		Fine Suspended Particulate ($PM_{2.5}$)		Sulfur Dioxide	
	Max. 8-Hour Conc. (ppm)	Number of Days Exceeded	Max. 8-Hour Conc. (ppm)	Number of Days Exceeded	Max. 24-Hour Conc. ($\Phi G/M^3$)	Number of Days Exceeded	Max. 24-Hour Conc. (ppm)	Number of Days Exceeded
State Stds.	$\exists$ 9.0 ppm/8 hr		No State Standard		No 24 hrs State Standard		> .04 ppm/24 hr	
2002	3.2	0	0.081	NA [1]	64	NA	ND [2]	ND
2001	6.0	0	0.088	NA	76	NA	ND	ND

2000	3.9	0	0.080	NA	78	NA	ND	ND
MAXIMUM	**6.0**		**0.088**		**78**		**ND**	
Federal Stds.	∃ 9.0 ppm/8 hr		> .08 ppm/8 hr		> 65 Φg/m^3, 24 hrs		0.14 ppm/24 hr	
2002	3.2	0	0.081	0	64	0	ND	ND
2001	6.0	0	0.088	1	76	2	ND	ND
2000	3.9	0	0.080	0	78	1	ND	ND
MAXIMUM	**6.0**		**0.088**		**78**		**ND**	

Sources: CARB 2000 to 2002
Notes: [1] No State standards
[2] No data. Not measured at this station

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. A project description will generally provide most of the required input parameters into a model, however, default values representative of the project will be used when project-specific data are not available.

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.

4.2.2 Impact Significance Criteria

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.

Thresholds for Construction Emissions

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 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.F and 4.2.G 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.F (Regulation VIII Control Measures) are required for all construction sites by regulation. Table 4.2.G lists additional measures that may be required due to sheer project size or proximity of the project to sensitive receptors. Table 4.2.G 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.F and 4.2.G 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.H. The SJVAPCD recognizes that these measures are difficult to implement due to poor availability of alternative fueled equipment and the challenge of monitoring these activities.

Table 4.2.F: Regulation VIII Control Measures for Construction Emissions of PM_{10}

	REGULATION VIII CONTROL MEASURES. - THE FOLLOWING CONTROLS ARE REQUIRED TO BE IMPLEMENTED AT ALL CONSTRUCTION SITES (INCLUDES CHANGES EFFECTIVE MAY 15, 2002).
X	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.
X	All on-site unpaved roads and off-site unpaved access roads shall be effectively stabilized of dust emissions using water or chemical stabilizer/suppressant.
X	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.
X	With the demolition of buildings up to six stories in height, all exterior surfaces of the building shall be wetted during demolition.
X	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.
X	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.)
X	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.
X	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.
X	Any site with 150 or more vehicle trips per day shall prevent carryout and trackout.

Source: SJVAPCD, 2002.

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

ENHANCED CONTROL MEASURES - THE FOLLOWING MEASURES SHOULD 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):	
X	Limit traffic speeds on unpaved roads to 15 mph; and
X	Install sandbags or other erosion control measures to prevent silt runoff to public roadways from sites with a 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:	
X	Install wheel washers for all exiting trucks, or wash off all trucks and equipment leaving the site;
X	Install wind breaks at windward side(s) of construction areas;
X	Suspend excavation and grading activity when winds exceed 20 mph; and*
X	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.*

Table 4.2.H: Construction Equipment Mitigation Measures

EMISSION SOURCE	MITIGATION MEASURES

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

Source: SJVAPCD, 2002.

Thresholds for Operational Emissions

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

X 10 tons per year of ROG

X 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

X California State one hour CO standard of 20.0 ppm

X 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.

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.

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:

X Probability of contracting cancer for the Maximally Exposed Individual (MEI) exceeds ten in one million.

X 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 Determined to Be Less Than Significant

Impact AIR-1: The project could create 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.

Mitigation Measure AIR-1: The SJVAPCD Regulation VIII, Control Measures for Construction Emissions of PM_{10}, as shown in Tables 4.2.F and 4.2.G, are required to be implemented at all construction sites. Compliance with the above Regulation VIII requirements would lessen the fugitive dust impact during construction to a level considered less than significant.

Impact AIR-2: The project could create short-term impact from architectural coatings and asphalt paving.

Mitigation Measure AIR-2: 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.

Impact AIR-3: Long-term air quality impacts with localized effects.

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 25,210 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 8.0 ppm and 6.3 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 (2003). This traffic study identified existing (year 2003), near-term (year 2008), and cumulative (year 2025) conditions 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.

Data in Tables 4.2.I, 4.2.J, and 4.2.K show that there would be no exceedance of either the State or federal CO standards for the one hour or eight hour durations. The one hour CO concentration near all nine intersections analyzed ranges from 8.0 to 11.7 ppm, much lower than the 20 ppm State standard. The eight hour CO concentration ranges from 6.3 to 8.9 ppm, lower than the 9.0 ppm State standard. In addition, the proposed project would result in increases in CO concentrations for both the one hour and the eight hour CO periods that are considered small and less than significant. Therefore, the project would not have an adverse impact on local air quality. Because no CO hot spots were identified, no sensitive receptors would be affected by project related local air quality impacts.

Impact AIR-4: The project could create objectionable odors.

The onsite lakes have the potential to create objectionable odors. However, the design of the lake system has integrated measures to prevent eutrophication or stagnation which may create these objectionable odors. The aquascape will be recreated to mimic a natural ecosystem that utilizes biologic processes to treat urban pollutants in runoff and maintain the normal health of the aquascape system. The elements of the aquascape system include wetlands planters, lake biofilter beds, pretreatment wetland filters, aeration, and storm water retention volume/capacity.

Based on the measures integrated as part to of the lake system design, objectionable odors emanating from the onsite lakes are not expected. No other sources of objectionable odors have been identified for the proposed project.

Impact AIR-5: The project could create Hazardous Air Pollutants Impacts.

The proposed project is not expected to generate any Hazardous Air Pollutant (HAP). In addition, any future proposal to implement plans that have the potential to emit HAPs will be subject to applicable regulations and guidelines set forth in the SJVAPCD Rulebook. No significant impacts from HAPs are anticipated.

Table 4.2.I: Existing (Year 2003) CO Concentrations

INTERSECTION	RECEPTOR DISTANCE TO ROAD CENTERLINE (METERS)	ONE-HOUR CO CONCENTRATION (PPM) [1]	EIGHT-HOUR CO CONCENTRATION (PPM) [2]	EXCEEDS STATE STANDARDS	
				1-HR	8-HR
Mokelumne Cir. & Eight Mile Rd.	12	8.6	6.7	No	No
	8	8.5	6.7	No	No
	7	8.5	6.7	No	No
	7	8.5	6.7	No	No
Trinity Parkway & Eight Mile Rd.	12	8.4	6.6	No	No
	10	8.4	6.6	No	No
	7	8.4	6.6	No	No
	7	8.4	6.6	No	No
I-5 SB Ramp & Eight Mile Rd.	8	9.6	7.4	No	No
	8	9.4	7.3	No	No
	7	9.3	7.2	No	No
	7	9.3	7.2	No	No
I-5 NB Ramp & Eight Mile Rd.	8	9.8	7.6	No	No
	8	9.6	7.4	No	No
	7	9.6	7.4	No	No
	7	9.5	7.4	No	No
Oak Grove & Eight Mile Rd.	7	9.4	7.3	No	No
	7	9.4	7.3	No	No
	7	9.3	7.2	No	No
	7	9.3	7.2	No	No
Mokelumne Cir. & Scott Creek Dr.	12	8.3	6.5	No	No
	12	8.3	6.5	No	No
	12	8.3	6.5	No	No
	12	8.3	6.5	No	No
Mokelumne Cir. & Consumnes Dr.	12	8.1	6.4	No	No
	12	8.1	6.4	No	No
	12	8.1	6.4	No	No
	12	8.1	6.4	No	No
Trinity Parkway & Cosumnes Dr.	12	8.0	6.3	No	No
	12	8.0	6.3	No	No
	10	8.0	6.3	No	No
	10	8.0	6.3	No	No
Trinity Parkway & McAuliffe Dr.	12	8.0	6.3	No	No
	8	8.0	6.3	No	No
	7	8.0	6.3	No	No
	7	8.0	6.3	No	No

Source: LSA Associates, Inc., October 2003
Notes: [1] Includes ambient one hour CO concentration of 8.0 ppm. The State's one hour CO standard is 20 ppm. The project would have no measurable changes on CO concentrations at all receptor locations analyzed. [2] Includes ambient eight hour CO concentration of 6.3 ppm. The State's eight hour CO standard is 9.0 ppm. The project would have no measurable changes on CO concentrations at all receptor locations analyzed.

Table 4.2.J: Near-Term (Year 2008) CO Concentrations without/with Project

Intersection	Receptor Distance to Road Centerline (Meters)	Project Related Increase 1-hr/8-hr (ppm)	One-Hour CO Concentration (ppm) [1]	Eight-Hour CO Concentration (ppm) [2]	Exceeds State Standards	
					1-Hr	8-Hr
Mokelumne Cir. & Eight Mile Rd.	12	0.9/0.7	8.9/9.8	6.9/7.6	No	No
	10	1.0/0.7	8.7/9.7	6.8/7.5	No	No
	7	1.0/0.7	8.6/9.6	6.7/7.4	No	No
	7	1.0/0.7	8.6/9.6	6.7/7.4	No	No
Trinity Parkway & Eight Mile Rd.	12	1.2/0.8	10.5/11.7	8.1/8.9	No	No
	12	1.1/0.8	10.3/11.4	7.9/8.7	No	No
	7	1.2/0.9	10.2/11.4	7.8/8.7	No	No
	7	1.4/1.0	10.0/11.4	7.7/8.7	No	No
I-5 SB Ramp & Eight Mile Rd.	14	1.5/1.0	9.5/11.0	7.4/8.4	No	No
	14	1.5/1.0	9.4/10.9	7.3/8.3	No	No
	7	1.3/0.9	9.4/10.7	7.3/8.2	No	No
	7	1.4/1.0	9.3/10.7	7.2/8.2	No	No
I-5 NB Ramp & Eight Mile Rd.	17	0.5/0.4	9.6/10.1	7.4/7.8	No	No
	14	0.5/0.3	9.5/10.0	7.4/7.7	No	No
	7	0.5/0.3	9.4/9.9	7.3/7.6	No	No
	7	0.4/0.3	9.3/9.7	7.2/7.5	No	No
Oak Grove & Eight Mile Rd.	7	0.2/0.1	9.5/9.7	7.4/7.5	No	No
	7	0.1/0.0	9.5/9.6	7.4/7.4	No	No
	7	0.1/0.0	9.5/9.6	7.4/7.4	No	No
	7	0.1/0.0	9.5/9.6	7.4/7.4	No	No
Mokelumne Cir. & Scott Creek Dr.	12	0.1/0.1	8.6/8.7	6.7/6.8	No	No
	12	0.1/0.1	8.6/8.7	6.7/6.8	No	No
	12	0.0/0.0	8.6/8.6	6.7/6.7	No	No
	12	0.1/0.0	8.5/8.6	6.7/6.7	No	No
Mokelumne Cir. & Consumnes Dr.	12	0.2/0.2	8.3/8.5	6.5/6.7	No	No
	12	0.2/0.2	8.3/8.5	6.5/6.7	No	No
	12	0.2/0.2	8.3/8.5	6.5/6.7	No	No
	12	0.2/0.2	8.3/8.5	6.5/6.7	No	No
Trinity Parkway & Cosumnes Dr.	12	0.4/0.3	9.4/9.8	7.3/7.6	No	No
	12	0.3/0.2	9.3/9.6	7.2/7.4	No	No
	10	0.2/0.2	9.3/9.5	7.2/7.4	No	No
	10	0.3/0.3	9.2/9.5	7.1/7.4	No	No
Trinity Parkway & McAuliffe Dr.	12	0.2/0.2	9.2/9.4	7.1/7.3	No	No
	10	0.2/0.1	9.1/9.3	7.1/7.2	No	No
	7	0.2/0.1	9.1/9.3	7.1/7.2	No	No
	7	0.2/0.1	9.0/9.2	7.0/7.1	No	No

Source: LSA Associates, Inc., October 2003

Notes: [1] Includes ambient one hour CO concentration of 8.0 ppm. The State's one hour CO standard is 20 ppm. The project would have no measurable changes on CO concentrations at all receptor locations analyzed.

[2] Includes ambient eight hour CO concentration of 6.3 ppm. The State's eight hour CO standard is 9.0 ppm. The project would have no measurable changes on CO concentrations at all receptor locations analyzed.

Table 4.2.K: Cumulative (Year 2025) CO Concentrations without/with Project

Intersection	Receptor Distance to Road Centerline (Meters)	Project Related Increase 1-hr/8-hr (ppm)	One-Hour CO Concentration [1] (ppm)	Eight-Hour CO Concentration [2] (ppm)	Exceeds State Standards	
					1-Hr	8-Hr
Mokelumne Cir. & Eight Mile Rd.	12	0.2/0.2	8.2/8.4	6.4/6.6	No	No
	10	0.1/0.1	8.2/8.3	6.4/6.5	No	No
	7	0.1/0.1	8.2/8.3	6.4/6.5	No	No
	7	0.1/0.1	8.2/8.3	6.4/6.5	No	No
Trinity Parkway & Eight Mile Rd.	12	0.1/0.1	8.4/8.5	6.6/6.7	No	No
	12	0.1/0.1	8.4/8.5	6.6/6.7	No	No
	7	0.1/0.1	8.4/8.5	6.6/6.7	No	No
	7	0.2/0.2	8.3/8.5	6.5/6.7	No	No
I-5 SB Ramp & Eight Mile Rd.	14	0.2/0.2	8.3/8.5	6.5/6.7	No	No
	14	0.2/0.2	8.3/8.5	6.5/6.7	No	No
	7	0.2/0.2	8.3/8.5	6.5/6.7	No	No
	7	0.2/0.2	8.3/8.5	6.5/6.7	No	No
I-5 NB Ramp & Eight Mile Rd.	17	0.1/0.1	8.4/8.5	6.6/6.7	No	No
	14	0.1/0.1	8.4/8.5	6.6/6.7	No	No
	7	0.2/0.2	8.3/8.5	6.5/6.7	No	No
	7	0.1/0.1	8.3/8.4	6.5/6.6	No	No
Oak Grove & Eight Mile Rd.	7	0.1/0.1	8.2/8.3	6.4/6.5	No	No
	7	0.1/0.1	8.2/8.3	6.4/6.5	No	No
	7	0.1/0.1	8.2/8.3	6.4/6.5	No	No
	7	0.1/0.1	8.2/8.3	6.4/6.5	No	No
Mokelumne Cir. & Scott Creek Dr.	12	0.1/0.0	8.1/8.2	6.4/6.4	No	No
	12	0.1/0.0	8.1/8.2	6.4/6.4	No	No
	12	0.1/0.0	8.1/8.2	6.4/6.4	No	No
	12	0.0/0.0	8.1/8.1	6.4/6.4	No	No
Mokelumne Cir. & Consumnes Dr.	12	0.0/0.0	8.1/8.1	6.4/6.4	No	No
	12	0.1/0.1	8.0/8.1	6.3/6.4	No	No
	12	0.1/0.1	8.0/8.1	6.3/6.4	No	No
	12	0.1/0.1	8.0/8.1	6.3/6.4	No	No
Trinity Parkway & Cosumnes Dr.	12	0.0/0.0	8.3/8.3	6.5/6.5	No	No
	12	0.1/0.1	8.2/8.3	6.4/6.5	No	No
	12	0.0/0.0	8.2/8.2	6.4/6.4	No	No
	12	0.0/0.0	8.2/8.2	6.4/6.4	No	No
Trinity Parkway & McAuliffe Dr.	12	0.0/0.0	8.3/8.3	6.5/6.5	No	No
	8	0.1/0.1	8.2/8.3	6.4/6.5	No	No
	7	0.1/0.1	8.2/8.3	6.4/6.5	No	No
	7	0.1/0.1	8.2/8.3	6.4/6.5	No	No

Source: LSA Associates, Inc., October 2003
Notes: [1] Includes ambient one hour CO concentration of 8.0 ppm. The State's one hour CO standard is 20 ppm. The project would have no measurable changes on CO concentrations at all receptor locations analyzed. [2] Includes ambient eight hour CO concentration of 6.3 ppm. The State's eight hour CO standard is 9.0 ppm. The project would have no measurable changes on CO concentrations at all receptor locations analyzed.

Potentially Significant Impacts

Impact AIR-6: The project will create short-term construction equipment exhaust-related impacts

Construction activities produce combustion emissions from various sources, such as utility engines, on-site heavy-duty construction vehicles, equipment hauling materials to and from the site, and motor vehicles transporting construction crews Exhaust emissions during construction envisioned on site would vary daily as construction activity levels change. The use of construction equipment on site would result in localized exhaust emissions. URBEMIS 2002 was used to estimate project related construction emissions for the assessment of the project's impacts on the local air quality. It is assumed that 20 acres will be under construction at a time and that the most significant impact would occur during grading activities. The emissions associated with the construction of the proposed project are summarized in Table 4.2.L.

Table 4.2.L: Emissions from Construction Activities

CATEGORY	POLLUTANTS				
	CO	**ROG**	**NO_X**	**SOx**	**PM_{10}**
Pounds per day (lb/day)	306	10,945	12	0	4
Tons per year (tons/year)	55.9	1997.5	2.2	0	0.7
SJVAPCD Thresholds (tons/year)	NA	10.0	10.0	NA	NA
Significant Impact	**No**	**Yes**	**Yes**	**No**	**No**

Source: LSA Associates, Inc., 2000.

As shown, construction equipment emissions would exceed the threshold for ROG and NOx established by the SJVAPCD. The SJVAPCD has established mitigation measures to be implemented if the construction equipment emission exhausts are deemed to have a significant impact on air quality. Feasible mitigation measures are listed below to reduce emissions generated from equipment exhaust.

Mitigation Measure AIR-6: Short Term, Construction Equipment Exhaust-Related Impacts

- The project contractors are required to implement all feasible measures identified in Tables 4.2.F, 4.2.G and 4.2.H.
- In addition to the mitigation measures stated above, SJVAPCD has established a heavy-duty engine incentive program to reduce NOx emissions. Conversation with SJVAPCD personnel revealed that NOx emissions can be offset by assisting the local farmers with replacing their existing heavy-duty engines for more efficient enginesor through monetary compensation.

Implementation of mitigation measures stated in Mitigation Measures AIR-6 will comply with SJVAPCD requirements for reducing construction equipment exhaust. However, it is expected that the remaining impacts would be adverse and unavoidable.

Impact AIR-7: The project would create long-term air quality impacts with regional effects

The land uses associated with the proposed project consists of approximately 97,357 square feet of general office space, 97,357 square feet of retail/commercial space (on the marina parcel), a 700 student elementary school, 2,161 single family residential dwelling units, and 868 Active Adult residential dwelling units. The emissions from the proposed project are calculated using URBEMIS.

The total projected emissions from long-term project operations of the proposed project are shown in Table 4.2.M. Total emissions of the proposed project would be higher than the 10 tons/year thresholds for ROG and NO_x established by the SJVAPCD. There are no feasible mitigation measures that would reduce the project's long term impacts on air quality to less than significant. However, the project is also subjected to SJVAPCD Rule 2201, New and Modified Stationary Source Review, and Rule 4001, New Source Performance Standards.

Table 4.2.M: Westlake Villages Project Emissions

SOURCE	POLLUTANTS, LBS/DAY				
	CO	**ROC**	**NO_X**	**SO_2**	**PM_{10}**
Stationary Sources: Summer	43.83	154.31	36.07	0.81	0.13
Vehicular Traffic: Summer	4,152.38	351.77	402.81	3.22	318.90
Subtotal Summer	4,196.22	506.07	438.87	4.03	319.03

Subtotal Summer (tons/year)	765.81	92.36	80.09	0.74	58.22
Stationary Sources: Winter	15.14	150.94	35.69	0.00	0.07
Vehicular Traffic: Winter	4,566.43	371.33	616.83	3.20	318.90
Subtotal Winter	4,581.56	522.26	652.52	3.20	318.97
Subtotal Winter (tons/year)	836.13	95.31	119.08	0.58	58.21
SJVAPCD Threshold (tons/year)	**NA [1]**	**10**	**10**	**NA**	**NA**

Exceed Threshold?	**NA**	**Yes**	**Yes**	**NA**	**NA**

Source: LSA Associates, Inc., October 2003.
Notes: [1] No emission threshold for this pollutant.

Mitigation Measure AIR-7 - Project Operations Related Impacts

The project would result in total (vehicular and stationary) daily emissions exceeding the daily emissions thresholds established by the SJVAPCD. No feasible mitigation measures would reduce the impacts to less than significant. However, the proposed project will be required to comply with Title 24 of the California Code of Regulations established by the Energy Commission regarding energy conservation standards. The 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.

Impact AIR-8: The proposed project would contribute to cumulative air quality impacts. Additionally, the project is not consistent with the Air Quality Attainment Plan.

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

Air Quality Attainment Plan Consistency Analysis

An 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. The proposed project will require a General Plan Amendment from agricultural uses to Mixed Use (e.g. residential). As such, the project has not been considered in preparation of the General Plan and therefore, is inconsistent with the AQAP. After the General Plan is amended, it will be forwarded to the SJVAPCD for inclusion in the next update of the AQAP.

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

4.2.4 Level of Significance after Mitigation

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

4.3 WATER RESOURCES

4.3.1 Existing Setting

Flood Control

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

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

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

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

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

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

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

Water Quality

The project site is located in the tidally influenced lower reaches of the San Joaquin River basin north of Stockton. The existing surface water features on the site include Disappointment Slough, which provides the

site's southern border. Disappointment Slough intersects Pixley Slough southeast of the project site. Pixley

Slough meets Bear Creek at a marsh area at the southern portion of SPW; and an irrigation canal extending north from Pixley Slough to Eight Mile Road west of I-5. The western border of the project site is bounded by Bishop Cut.

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

Water quality data from this monitoring station indicate that surface water in the project area is moderately low (less than 400 mg/l) in total dissolved solids, usually has dissolved oxygen concentrations greater than 75 percent saturation, has chlorophyll levels indicating no nuisance algae conditions (usually less than 20 Φg/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 (^{N}F)	EC	CHLOROPHYLL (MICROGRAMS/L)
1996	5.5-9.4	50-79	153-301	n/a
1997	6.9-9.5	53-78	183-370	n/a
1998	n/a	n/a	n/a	n/a
1999 (February-September)	7-10	51-78	166-244	3.66-10.9

Source: LSA, 2001

Storm Water/Drainage

A technical Stormwater Management Plan and Hydrology/Hydraulic Study was prepared by Pacific Advanced Civil Engineering, Inc. (PACE) for the proposed project. The technical study is available for review at the City of Stockton, Municipal Utilities Department.

The master plan of drainage and stormwater management plan specifically encompasses the 634 acres of the proposed Westlake residential development and the 1,179 acres of drainage area to the north of Westlake. The total regional watershed study area encompassed includes a total of 1,813 tributary acres, which is generally bounded by Telephone Cut to the north, the Spanos Park East development and existing golf course to the east, the Pixley Slough and levee to the south, and the Bishop Cut or San Joaquin River levee to the west. The Spanos Park East development acts as a natural drainage boundary since this development also has a self-contained drainage system and was not designed to accept drainage to the west of this development.

There are unique existing physical constraints present within the study area. The Interstate-5 freeway roadway section is elevated and acts as a barrier from regional drainage generated from the east draining towards the San Joaquin River. The majority of the natural runoff for this area is associated with agricultural fields that are relatively flat with limited gradient. A system of earthen channels acts as the collection system for surface drainage for the existing 1,813-acre watershed which is delivered to a small existing pump station (2-60 horsepower pump) operated by the Reclamation District. The entire area is protected on the three sides adjacent to the San Joaquin River by an earthen levee system, so stormwater runoff must be pumped over the levee into to river resources since it cannot discharge by gravity because of the elevation differential with the ground and river level. Historically localized ponding and shallow flooding have been observed during larger storm events occurring adjacent to the existing drainage ditches and field closer to the existing pump station because of its limited capacity. The area also contains high groundwater levels, which influences the depth of excavation for storage basins and underground pipes (PACE, 2004).

4.3.2 Impact Significance Criteria

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

FC-a Risk of 100-year flood event or greater to proposed project site;

FC-b Increase in volume or rate of runoff leaving the site, causing substantial flooding or exposure of life and property to increased flooding hazards;

WQ-a Long-term and irreversible erosion and sedimentation resulting from site development and occupation; and

WQ-b Failure to meet applicable water quality criteria at any surface water discharge point or in groundwater.

4.3.3 Impacts and Mitigation Measures

Effects Considered Not to Be Significant

Flood Control/Storm Water

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

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

Potentially Significant Effects

Flood Control/Storm Water

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

The goal of the proposed drainage facilities is to ensure that the proposed Westlake residential development is provided with a minimum of 100-year flood protection and satisfies local drainage criteria adopted by both the City of Stockton and San Joaquin County. In addition, the existing adjacent northern tributary watershed areas do not have their current levels of flood protection impaired or reduced from the development by reducing potential flood storage areas. Detailed hydrology analysis was performed to evaluate both the onsite local development watershed and the offsite regional watershed as part of the flood protection assessment conducted by PACE.

A synthetic unit hydrograph procedure was utilized in order to generate 100-year 24-hour runoff hydrographs for both the onsite and offsite watershed in order to accurately asses the time variation of storage within the manmade lake systems and the effects of pumping. The unit hydrograph analysis was also applied to the offsite watershed but only the total runoff volume was required from the results of the analysis.

The total 100-year, 24-hour runoff volume associated from the combined inflow hydrograph is illustrated in Table 4.3.B and the total 100-year volume was used in sizing the pump station. The pumps were designed to evacuate the entire 100-year runoff volume in a 24-hour period so that the storage could be available for the next storm.

Table 4.3.B: Summary of Surface Runoff Hydrology

Land Use Condition	Onsite		Offsite		Maximum Onsite Pump Station Outflow[3] (cfs)
	Drainage Area (acres)	24-hour 100-year Runoff Volume[2] (acre-feet)	Drainage Area (acres)	24-hour 100-year Runoff Volume[2] (acre-feet)	
Existing	0	0	1813	208	-------
Westlake[1]	634	**84.5**	1148	131	**42.6**
Westlake & Remainder Parcel	845	**105.4**	968	111	**53.1**

Source: PACE, 2004

Notes: [1] Initial proposed Westlake development without the expansion of 181 acres north to Eight Mile Road. [2] "Runoff Volume" is the effective runoff from this design storm and does not represent maximum stored detention volume, which is less than the runoff volume. [3] Maximum constant pumping rate is based on evacuating the 100-year 24-hour runoff volume within a 24-hour period

The Westlake lake is designed to provide sufficient additional storage volume to allow retention of the 100-year 24-hour design stormwater runoff volume. The Westlake lake has been initially designed to retain approximately 1.2 feet over its entire surface without pumping and which is equivalent to the entire 100-year 24-hour storm effective runoff volume. The linear alignment of the lake also had the advantage of not only providing stormwater storage, but also provided a method for stormwater conveyance that eliminated some site planning constraints regarding water surface elevations, elimination and significant downsizing of the storm drain pipe system.

The underground storm drain pipe system was sized to convey the 100-year peak discharges from the local tributary area since the entire project is within the interior of a regional levee system. The 19 gravity storm drain systems/networks are composed of a variety of pipe diameters ranging in size from 18 inches to 48 inches. All the storm drain systems collect local drainage from street inlets within the development and discharge into either the upper or lower lake through specially formulated outlet structures designed to function with the lake. The major storm drains and the outlet points are shown on Figure 4.3.1. The storm drain outlets consist of long weir boxes similar to a catch basin operating in reverse. This particular design prevents the normal lake operating water surface to enter the storm drain pipe which will be at an elevation well below the lake. Nuisance and "dry-weather" flows will be continually removed from the storm drain at the outlet structure at a sump which will have a small submersible pup that discharges to the treatment wetland systems.

The stormwater pump station must continue to operate and remove large quantities of stormwater even during local electrical power outages. The operating reliability is a principal design concern and must anticipate the worst operating conditions. A dependable energy source must be provided to ensure continuous operation of the pumps, particularly if there is electrical outages during a storm event. A natural gas generator will be provided as a secondary power source for the electrical driven pump motors. Normally electrical power will be supplied from the electrical service with the development, however, if this power is interrupted then the gas generators can operate the pump station (pumps and controls). The secondary source will allow adequate time for restoration of the primary electrical power.

The initial development of the Westlake project would remove some of the available ponding areas in the adjacent farm fields to the south of the existing pump station that are currently used for storage and it would also remove some of the existing earthen channels that are used for storage and conveyance. However, a major offset to the reduced available storage is the fact that the watershed area has also been reduced that is tributary to the existing Reclamation District pump station. The initial development of Westlake will reduce the runoff volume by 37 percent while the available channel storage volume is only reduced by 29 percent. The flooding estimates using existing topography indicate that the remaining 34 acre-feet of runoff volume during the 100-year event can be stored in the adjacent 181 acre parcel south of Eight Mile Road (Spanos Parcel). If a wedge storage area is assumed for this parcel then the maximum depth of ponding adjacent to the development would be less than one-half foot. The future expansion of the Westlake project with the 181-acre parcel to Eight Mile Road would eliminate a significant portion of the existing available channel on the south side of Eight Mile Road and the existing Reclamation District pump station will have to be relocated. This particular watershed or development condition will require relocation of the existing Reclamation District pump station from the edge of the existing marina at Eight Mile Road to the levee at Telephone Cut. The reduction in storage volume will have to be accommodated through increasing the size of the existing earthen channels to protect the road and existing northern property area.

In summary, to prevent the potential conditions outlined in **Impact FC-2**, the following features are integrated as part of the proposed project:

Westlake Storm Drain Pipe Facilities. The proposed Westlake development is drained by multiple independent underground gravity storm drain systems that accommodate the proposed development site grading configuration and drainage patterns and outlet into either of two onsite manmade lake systems within the development. There are approximately 19 separate storm drain systems including numerous connector pipes for street inlets/catch basins.

Figure 4.3.1: Conceptual Storm Water Drainage System

Storm Drain Outlets to Lakes. Underground storm drain pipe discharge connection point to the manmade lake system will involve a specially designed outlet box that physically separates the lake water from the storm drain pipe and includes a small submersible pump for dry-weather nuisance flows. The outlet box is configured such that the normal operating water surface of the lake cannot enter the storm drain pipe because of a concrete wall at the lake edge separating the two systems, but also acts as a weir when runoff is delivered from the storm drain to the lake.

Lake Stormwater Detention Facility. The two interconnected lakes, with a total surface area of approximately 68-acres, can provide approximately 88-acre-feet of available stormwater flood control storage with one-foot above the normal lake operating water surface which is more than the estimated 100-year 24-hour runoff volume of approximately 84 acre-feet.

Stormwater Pump Station. The proposed stormwater pump station will serve the Westlake development drainage area. The pump housing and force main can be sized to accommodate the future runoff from the future expansion north of the development to Eight Mile Road. The pump station is sized to pump the attenuated flow from the lake and not the peak discharge since the lake provides sufficient storage. The pump is sized to pump or evacuate stored stormwater within a 24-hour period. The pump station is configured with a wet-well and permanent building to house the mechanical equipment. The station will be equipped with 4-90 horsepower submersible pumps, with three capable of pumping 55 cfs and one additional pump as standby for redundancy.

Existing Offsite Channel Storage and Pump Station. Existing pump station operated by the reclamation district consists of 2-60 horsepower pumps and drains the entire existing 1,813-acre watershed area. The existing pump station is location near the marina where Eight Mile Road terminates at the river. The pump station must be relocated north to discharge into the Telephone Cut when the Westlake development is expanded to Eight Mile Road (PACE, 2004)

Additionally, the following mitigation is required.

Mitigation Measure FC-2a: Prior to issuance of building permits for new development, the applicant shall provide evidence to the Director of Community Development Department that flood assessments have been paid.

Mitigation Measure FC-2b: Prior to construction, storm drainage analysis or plans demonstrating that the onsite lakes and stormwater runoff from the project can be adequately conveyed to the pump station at Disappointment Slough shall be reviewed and approved by the City of Stockton Department of MUD and the Public Works Department. Certificates of Occupancy shall not be issued until the drainage system is constructed to the satisfaction of the City.

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

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

Water Quality

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

During construction, disturbance of soil and operation of construction equipment can lead to increased sediments and vehicle fluids in stormwater or surface runoff. Following development of the project site, pollutants from parking lot and roadway runoff would contain heavy metals and hydrocarbons from vehicle fluid. Chemicals used in landscaping maintenance would also impact water quality through stormwater runoff. The City has developed a Storm Water Quality Control Criteria Plan (SWQCCP) that is intended to establish uniform requirements for the selection and incorporation of storm water quality into the planning, design, construction and maintenance of flood management projects and new developments in a manner consistent with the Federal Clean Water Act (CWA) and the City's Storm Water Management Plan. All projects that require municipal approval for the division of land and construction of improvements are subject to the SWQCCP's requirements. 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.

The lake will have a stormwater treatment function that relies on recreating a natural ecosystem that can utilize biologic processes for treatment of urban pollutants in runoff as well as maintaining the normal health of the aquascape system. The water quality treatment features incorporated into the lake system include: aeration, lake biofilters, wetland planters, 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 lake to ensure that any discharges to the adjacent environmentally sensitive San Joaquin River have an improved quality.

Treatment of runoff and management of water quality relies on re-creation of the natural chemical and biological processes within the lake systems resulting from a unique combination of different layers of treatment. The general treatment processes for the different target pollutants include: (1)filtering suspended solids in pretreatment wetlands, (2) reduced concentration of dissolved pollutants, nutrients, and salts through flushing of the lake water volume by utilizing the lake as the irrigation supply source, (3) reduction of nutrient concentrations from inflows (nitrogen and phosphorous) and prevention of algal blooms by using constructed gravel biofilters bed that relies on "biological filtration", (4) maintaining oxygen levels through aeration promoting oxygen exchange to prevent anaerobic conditions which allows natural process to occur such as denitrification for removal of nitrogen, (5) removal of biochemical oxygen demand and heavy metals through wetland planters, (6) collection of large sediments and floating debris at centralized outfall boxes to the lake system with debris collection facilities and sediment traps, and (7) pretreatment and primary control through wetland water quality filters designed as attached-growth biological reactors. Research has identified features of constructed artificial wetlands which successfully improve water quality. These features in wetlands in which impaired runoff flows through a permeable gravel bed and contacts the root zone of the submersed vegetation and flows that pass over the bottom sediments. Biological filtration utilizes an oxidation process where bacteria attach oxygen to nitrogen in ammonia to make nitrite and finally nitrate which occurs both in the wetland features and the gravel biofilter beds. Biological filtration is commonly applied in many manmade waterscape systems such as fish ponds.

The design of the lake system will pretreat water prior to discharge to Disappointment Slough. The following mitigation is also required.

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

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

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

4.3.4 Level of Significance after Mitigation

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

4.4 BIOLOGICAL RESOURCES

A Biological Resources Constraints Analysis was prepared for the proposed project by Monk & Associates. The analysis was used in preparation of this section and is presented in Appendix F.

4.4.1 Existing Setting

Plant Communities and Associated Wildlife Habitats

Westlake Storm Drain Pipe Facilities. The proposed Westlake development is drained by multiple independent underground gravity storm drain systems that accommodate the proposed development site grading configuration and drainage patterns and outlet into either of two onsite manmade lake systems within the development. There are approximately 19 separate storm drain systems including numerous connector pipes for street inlets/catch basins. Five plant communities are mapped on the project site: agrestal (cropland), plantation (orchard), ruderal (weedy), freshwater marsh, and valley and foothill riparian. These plant communities are defined using Holland and Keil (1995) and the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP) (2000).

Agrestal (Cropland)/SJMSCP Vegetation Type C3 (Row and Field Crops)
A majority of the project site is classified as agrestal. Agrestal communities are defined in Holland and Keil (1995) as being dominated by cultivated crops and associated weedy species. Surveys conducted in May 2003 indicated tomato and corn crops were growing within this vegetation classification.

Generally, agrestal communities do not provide quality habitat for resident wildlife species. This is due, in part, to extensive land manipulation and pesticide application associated with agricultural operations. Some species, however, inhabit 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 agrestal communities, particularly in the winter months.

Plantation (Orchard)/SJMSCP Vegetation Type C3 (Row and Field Crops)
Plantation habitats include stands of trees that are comprised of a single species. On the project site, the plantation community consists of a group of black walnut tress (*Juglans hindsii*) associated with the abandoned homestead and planted, ornamental maple trees (*Acer* sp.) located near the marina parking lot. Vegetation growing near the abandoned homestead also included ornamental plants and invasive weedy species.

The man-made structures associated with the abandoned homestead provide limited habitat for wildlife species. The barn structure currently serves as a roost sit for barn owl (*Tyto alba*) and potential habitat for various bat species. A variety of bird species are known to occur in urbanized settings, such as: scrub jay (*Aphelocoma californica*), American robin (*Turdus migratorius*), house finch *(Carpodacus mexicanus*), house sparrow (*Passer domesticus*), starling (*Sturnus vulgaris*), and Brewer's black bird (*Euphagus cyanocephalus*). Yellow-rumped warblers (*Dendroica coronata*) were observed in the maple trees located near the marina.

Ruderal/SJMSCP Vegetation Type C3, U, or U2 (Row and Field Crops, Urban, Scraped/Paved)
Ruderal communities consist of plant species adapted to continuous disturbance. The ruderal habitat occurs in the agricultural/fallow fields and areas adjacent to the cultivated fields. This habitat also occur along

levees and other man-made structures. Species associated with the agricultural fields are dominated by wild mustard (*Brassica nigra*), Italian thistle (*Carduus pycnocephalus*), prickly lettuce *(Lactuca serriola*), prickly sow thistle (*Sonchus asper*), and canary grass (*Phalaris paradoxa*). Species occurring along the levees include milk thistle (*Silybum marianum*), ripgut grass (*Bromus diandrus*), foxtail barley (*Hordeum murinum leporinum*), mallow (*Malva parviflora*), wild radish (*Raphanus sativus*), poison hemlock (*Conium maculatum*), and red-stem filaree (*Erodium botrys*).

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*).

Aquatic Habitat Associated with Irrigation Ditches/SJMSCP Vegetation Type C3 (Row and Field Crops)
The irrigation ditches that transect the project site support typical freshwater marsh and riparian species. As defined by Holland and Keil (1995), freshwater marsh is a herbaceous community consisting of species such as cattails (*Typha* spp.), bulrushes (*Scirpus* spp.), and bur-reed (*Sparganium erectum* spp. *Stoloniferum*). Vegetation within irrigation ditches is often controlled to allow free water flow and maintain capacity.

Wildlife species observed within this habitat included 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.

Woody vegetation is established in the irrigation ditches located in the southwest corner of the project site. Common species associated with this type of habitat (valley and foothill riparian) include arroyo willow (*Salix lasiolepis*), sandbar willow (*Salix sessilifolia*), and Fremont cottonwood (*Populus fremontii*). Understory species include California blackberry (*Rubus ursinus*), wild rose (*Rosa* sp.), and annual herbaceous species. This habitat is more complex and provides suitable resting, nesting and foraging habitat for a variety of species including, dark-eyed junco (*Junco hyemalis*), yellow-rumpled warbler (*Dendroica coronata*), Anna's hummingbird (*Calypte anna*), and western scrub jay (*Aphelocoma californica*).

This valley and foothill riparian habitat also occurs intermittently along Bishop Cut and Disappointment Slough to the east and south of the project site, respectively. Continuous levee maintenance has resulted in highly disturbed habitats dominated by herbaceous ruderal plants. Cliff swallows and black phoebes were observed foraging in these areas.

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)

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 (2004) and CNPS Electronic Inventory (2004), referencing the Terminous and Lodi South quadrangles, and from knowledge of the local area. These lists were reviewed to determine which species could potentially occur on the project site. The list included numerous species representing a variety of habitat types.

Special status species are defined as follows:

X plants and animals that are listed or proposed for listing as threatened and endangered under the CESA or the FESA;

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

X 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;

X plants occurring on Lists 1A, 1B, 2, 3, and 4 of CNPS' electronic inventory (2002). The CDFG recognizes that Lists 1A, 1B, and 2 of the CNPS inventory contain plants that, in the majority of cases, would qualify for State listing, and CDFG requests their inclusion in EIRs. Plants occurring on CNPS Lists 3 and 4 are "plants about which more information is necessary," and "plants of limited distribution," respectively (CNPS, 2001). Such plants may be included as special-status species on a case by case basis due to local significance or recent biological information;

X migratory nongame birds of management concern listed by the USFWS;

X animals that are designated as "species of special concern" by CDFG;

X animals that are designated as "species of concern" by USFWS;

X animal species that are "fully protected" in California.

Potentially Occurring Special Status Species

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

Sanford's Arrowhead. Sanford's arrowhead (*Sagittaria sanfordii*) is a perennial plant in the water plantain family. This species is listed as a federal species of concern and is a CNPS List 1B species. Sanford's arrowhead grows in freshwater marshes, ponds, and ditches. Suitable habitat is located on the project site in the open drainage ditches. The SJMSCP restricts the individual take and conversion of occupied habitat for the Sanford's arrowhead.

Delta button-celery. Delta button-celery (*Eryngium racemosum*) is a biennial or perennial plant species in the carrot or parsley family. This plant grows in clay depressions in riparian habitats within the San Joaquin Valley. This species is listed as a federal species of concern and state endangered. There is a low probability of this species occurring within the project site due to extensive habitat modification through agricultural activities. The SJMSCP restricts the individual take and conversion of occupied habitat for the Delta button-celery.

Mason's lilaeopsis. Mason's lilaeopsis (*Lilaeopsis masonii*) is a perennial plant species in the carrot or parsley family. This species is listed as a federal species of concern and rare within the state. This species is found only in the San Francisco Estuary and Bay Delta. It grows in intertidal marshes and along stream banks. Mason's lilaeopsis is found along Fourteen Mile Slough to the south of the project site and Little Potato Slough to the north. There is a low potential for this species to occur on the project site since the drainage ditches are not tidally influenced, however, any outfall or discharge into Disappointment Slough could impact this species.

Delta mudwort. Delta mudwort (*Limosella subulata*) is an annual plant species in the figwort family. Delta mudwort is a CNPS List 2 species and found only in the Bay Delta. It grows on mud banks of intertidal marshes, often in freshwater or brackish marsh, or riparian scrub habitats. The nearest occurrence of this species is northwest of the project site at the confluence of White and Little Potato Slough. There is a low potential for this species to occur on the project site since the drainage ditches are not tidally influenced, however, any outfall or discharge into Disappointment Slough could impact this species.

Slough thistle. Slough thistle (*Cirsium crassicaule*) is an annual or biennial member of the aster family. It is listed as a federal species of concern and is a CNPS List 1B species. The slough thistle grows in marshes, swamps, riparian scrub, and chenopod scrub in the San Joaquin Valley. The drainage ditches located on the project site provide marginal habitat for this species. The SJMSCP restricts the individual take and conversion of occupied habitat for the slough thistle.

Wright's trichocoronis. Wright's trichocoronis (*Trichocoronis wrightii*) is an annual to perennial member of the aster family. It is designated on CNPS List 1B. The Wright's trichocoronis is found in wet habitats, including riparian areas, within the Central Valley. It has a low probability of being found in the drainage ditches with riparian habitat.

Suisan Marsh aster. Suisan Marsh aster (*Aster lentus*) is a perennial member of the aster family. It is listed as a federal species of concern and is a CNPS List 1B species. It is found in fresh to brackish marshes in the San Francisco Estuary. The drainage ditches located on the project site provide marginal habitat for this species.

Bearded sedge. Bearded sedge (*Carex comosa*) is a perennial member of the sedge family. It is listed on CNPS List 2. This species is found in wet habitats in northern California. The onsite drainage ditches provide marginal habitat for this species.

Delta tule pea. Delta tule pea (*Lathyrus jepsonii* var. *jepsonii*) is a perennial member of the pea family. It is designated as a federal species of concern and is a CNPS List 1B species. This plant is found in coastal and estuarine marshes inland to Stockton. There is a low probability this species occurs within the drainage ditches on the project site.

Blue skullcap. Blue skullcap (*Scutellaria lateriflora*) is a perennial member of the mint family and is on CNPS List 1B. It is found in marshes and swamps in the northern San Joaquin Valley. The onsite drainage ditches provide suitable habitat for this species.

Rose-mallow. Rose-mallow (*Hibiscus lasiocarpus*) is a perennial member of the mallow family and is on CNPS List 1B. It is found on riverbanks and marshes in the Sacramento Valley and Delta region. This species is known to occur along Disappointment Slough. The onsite drainage ditches provide suitable habitat for this species.

Western pond turtle. Western pond turtle (*Clemmys marmorata*) is a federal species of concern and state species of special concern. This reptile is found in lakes, ponds, and slow moving rivers and streams. The onsite drainage ditches provide potential basking or foraging habitat for pond turtle. No breeding habitat is present onsite.

Giant garter snake. 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 reptile 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 drainage ditches and croplands on the project site provide only marginal habitat for this species due to habitat modification, and the USFWS has determined that the drainage ditches are not potential habitat for this species. However, the USFWS also stated that sloughs surrounding the project site (i.e., Disappointment and Pixley Sloughs, and Bishop Cut) constitutes potential habitat for giant garter snake (pers. comm, email to Mr. Geoff Monk from Mr. Larry Butcher of USFWS Sacramento Endangered Species Office).

Giant garter snake is covered under the SJMSCP with the exception a localized areas associated with Disappointment and Pixley Sloughs, and nearby hydrologically connected areas. The proposed project includes installation of an outfall structure for a new pump station in Disappointment Slough, which likely would not be covered under the SJMSCP.

White-tailed kite. White-tailed kite (*Elanus leucurus*) are fully protected under the Fish and Game Code and MBTA. This raptor species uses scattered trees for breeding, and open grasslands and marshes for foraging. Suitable nesting habitat is located along the edges of the project site. It is likely that the white-tailed kite forages over the project site. Direct take of nesting white-tailed kites is not covered under the SJMSCP or MBTA.

Swainson's hawk. Swainson's hawk (*Buteo swainsonii*) is a state threatened species. This raptor species is also listed under the CESA, and is otherwise protected through other Fish and Game Codes, and the MBTA. The Swainson's hawk prefers scattered riparian or woodland trees for breeding and open field for foraging. The bird winters in South America. Suitable nesting habitat is located within and adjacent to the project site. A pair of Swainson's hawks were observed during field surveys. Direct take of this species is not covered under the SJMSCP or MBTA.

Burrowing owl. Burrowing owls (*Athene cunicularia*) are a federal species of concern and state species of special concern. This raptor species is also protected under the Fish and Game Code and MBTA. Burrowing owls prefer annual and perennial grasslands, with low growing vegetation. The owls typically use rodent burrows for nesting and cover. The project site provides suitable habitat for burrowing owls and numerous occurrences have been recorded in the vicinity. Direct take of this species is not covered under the SJMSCP or MBTA.

Northern harrier. Northern harrier (*Circus cyaneus*) is a state species of special concern. This raptor species is also protected under the Fish and Game Code and MBTA. Northern harriers nest on the ground used grass lined nests within dense, low lying vegetation. Northern harriers were observed foraging and displaying mating behavior over the project site. The project site provides suitable nesting habitat for northern harriers. Direct take of this species is not covered under the SJMSCP or MBTA.

Loggerhead shrike. Loggerhead shrike (*Lanius ludovicianus*) is a federal species of concern and state species of special concern. The shrike nests in shrubs and trees with dense canopies. Suitable habitat is provided on the project site along the irrigation and drainage ditches. Direct take of this species is not covered under the SJMSCP or MBTA.

Tricolored blackbird. Tricolored blackbirds (*Agelaius tricolor*) is a federal species of concern and state species of special concern. This bird species nests in large colonies and uses dense cattails, tule patches,

blackberry patches, and other dense vegetation. The project site provide marginal habitat along the main irrigation and drainage ditches. Direct take of this species is not covered under the SJMSCP or MBTA.

Central Valley steelhead and fall run/late-fall run chinook salmon. Central Valley steelhead (*Oncorhynchus mykiss*) is a federal threatened species; it has no State status. Central Valley fall run/late-fall run chinook salmon (*Oncorhynchus tshawytscha*) is a federal candidate species; it has no 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.

Disappointment Slough provides potential migration habitat for these species as they could potentially move through the area en route to upstream spawning grounds. Disappointment and Pixley Sloughs would be considered EFH for Central Valley fall run/late-fall run chinook salmon.

Waters of the United States

Regulatory Background

Water within the onsite irrigation and drainage ditches is provided and discharged via a system of pipes and pump stations. A pump house, located at the southwest corner of the project site, and steel pipes deliver water between Bishop Cut and the irrigation canals onsite. These pipes are the only physical connection between Bishop Cut and the onsite irrigation ditches. Bishop Cut, Disappointment Slough, and onsite irrigation ditches are potentially regulated by the following legislation.

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.

Rivers and Harbors Act: Under Section 10 of the Rivers and Harbors Acts, the ACOE has jurisdiction over navigable waters of the Unites States to the historic limit of mean high water. All activities that involve excavating, filling, dredging, or construction or placement of an obstruction would require a permit from the ACOE. In this instance, any impacts to Disappointment Slough would be regulated under Section 10.

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: The 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 Determined to Be less than Significant

The project site provides little suitable habitat for special status plant and animal species. The loss of habitat for these species can be mitigated to less than significant levels through payment of fees to SJCOG through the SJMSCP. A fee of approximately $1,724 per acre would be paid to SJCOG. Direct take of some species, however, is not covered under the SJMSCP and these impacts are discussed below.

Storm water discharge into Disappointment Slough could affect special status species through a degradation in water quality. However, the project proposes to create two interconnected lakes, totaling 68 acres, that will serve as a water quality and urban runoff treatment facility. The lakes are sized to contain the 100-year, 24-hour storm event without pumping. The lakes will contain several layers of water treatment measures to improve water quality before discharge into Disappointment Slough. These include lake specific water quality measures (biofilters and aeration), urban storm water runoff controls (water quality filters and wetland planter areas), and lake retention of runoff (i.e., all runoff from the developed areas of the project will be collected in the lake before being discharged into Disappointment Slough, if necessary). Consequently, all water discharged into Disappointment Slough will be the same or better quality than what is currently being pumped off the project site (i.e., into Bishop Cut).

Potentially Significant Effects

Impact BR-1: Several special status plant species, including Sanford's arrowhead, Delta button-celery, and Slough thistle, not covered under the SJMSCP could occur on the project site.

The proposed project would convert the agricultural/fallow fields on the project site to residential and mixed-use development. Despite the extensive habitat modifications to the site, several special status plant species could be directly impacted by site development. Direct take of the following species are not covered under the SJMSCP and could be in violation of the FESA, and/or CESA. Special status plant species that are not covered under the SJMSCP include: Sanford's arrowhead, Delta button-celery, and Slough thistle. Therefore, the conditions outlined in **Significance Criteria BR-b** through **BR-d** would apply, resulting in potentially significant impacts to these species.

Mitigation Measure BR-1: Approximately timed rare plant surveys are required to determine the presence or absence of the Sanford's arrowhead, Delta button-celery, and Slough thistle. If these species are present on the project site, consultation with USFWS and/or CDFG will be required. Compensation mitigation could be required to offset impact to these species if they are present. Such mitigation would include implementation of all provisions required by the USFWS and/or CDFG. These provisions would likely include salvage of seeds/rhizomes or any other transplantable portion of any special status plant found on the project site and transplanting or planting gathered seeds or plants to an appropriately selected and protected habitat.

Implementation of Mitigation Measure BR-1 would prevent the conditions outlined in Significance Criteria BR-b, BR-c, and BR-d from occurring. Thus, the project would not result in a significant affect to these species.

Impact BR-2: Implementation of the project could affect several special status bird species that could occur on the project site.

The proposed project would convert the agricultural/fallow fields on the project site to residential and mixed-use development. Despite the extensive habitat modifications to the site, several special status bird species including burrowing owl, white-tailed kite, northern harrier, and Swainson's hawk could be directly impacted by site development if they are nesting on the site when construction begins. Direct take of these species are not covered under the SJMSCP and would be in violation of the Fish and Game Code and MBTA. Therefore, the conditions outlined in **Significance Criteria BR-a** through **BR-d** will occur, and the project would result in a potentially significant impacts to these species.

Mitigation Measure BR-2: Preconstruction surveys will be conducted to determine whether these bird species are nesting within the project site boundaries. If surveys determine that these bird species are nesting, nest sites will be avoided through establishment of appropriate buffers to prevent the direct take of the species.

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

Impact BR-3: Construction of the outfall structure for a new pump station in Disappointment Slough could impact giant garter snake.

Although the USFWS has determined the irrigation ditches and croplands on the project site would not likely constitute habitat of the giant garter snake, as described above, the USFWS also determined that Disappointment Slough constitutes known suitable habitat for this species. Consequently, construction of the outfall structure could impact giant garter snake and **Significance Criteria BR-c** would occur, resulting in a potential adverse affect to giant garter snake.

The determination of known suitable habitat for giant garter snake in Disappointment Slough precludes the use of the SJMSCP for potential project impacts to giant garter snake associated with the new outfall structure. Consequently, it is likely that construction of the outfall structure to will require an incidental take permit from the USFWS, separate from the incidental take permit issued for the SJMSCP. It is expected that the incidental take permit would be acquired by the ACOE during the Section 404 permit process (assuming a Section 404 permit is required). ACOE would consult with USFWS pursuant to Section 7 of the FESA for project effects to giant garter snake. In the event a Section 404 permit is not required, the applicant would likely need to consult with USFWS pursuant to Section 10 of the FESA.

Mitigation Measure BR-3: The following minimization and avoidance measures outlined in the SJMSCP should be implemented, as feasible, to prevent impacts to giant garter snake.

1. Construction shall occur during the active period for the snake, between May 1 and October 1. Between October 2nd and April 30th, the JPA, with the concurrence of the Permitting Agencies' representatives on the Technical Advisory Committee, shall determine if additional measures are necessary to minimize and avoid take.
2. Limit vegetation clearing within 200 feet of the banks of potential giant garter snake aquatic habitat to the minimal area necessary.
3. 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.
4. 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.
5. In areas where wetlands, irrigation ditches, marsh areas, or other potential giant garter snake habitats are being retained on-site:

X Install temporary fencing at the edge of the construction area and the adjacent wetland, marsh, or ditch;

X Restrict working areas, spoils and equipment storage and other project activities to areas outside of marshes, wetlands, and ditches; and,

X 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.

1. 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.
2. If wetlands, irrigation itches, marshes, etc. will not be relocated in the vicinity, then the aquatic habitat shall be dewatered at least two weeks prior to commencement.
3. 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.
4. 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).

If consultation is required with USFWS is required, any specific mitigation requirements beyond those mentioned above would also become a condition of project approval.

Implementation of Mitigation Measure BR-3 would prevent the conditions outlined in Significance Criteria BR-c from occurring. Thus, the project would not result in significant adverse impacts to giant garter snake.

Impact BR-4: Construction of the outfall structure for the new pump station may impact anadromous fish species.

Construction of the outfall structure could impact Central Valley steelhead and Central Valley fall run/late-fall run chinook salmon if they are present in Disappointment Slough during construction. The outfall structure could also affect EFH for Central Valley fall run/late-fall run chinook salmon. Therefore, the conditions outlined in **Significance Criterion BR-c** will occur, thus resulting in potential significant impacts to these species.

It is likely that construction of the outfall structure to will require an incidental take permit from NMFS for project effects to Central Valley steelhead and EFH for Central Valley fall run/late-fall run chinook salmon. It is expected that the incidental take permit would be acquired by the ACOE during the Section 404 permit process (assuming a Section 404 permit is required). ACOE would consult with NMFS pursuant to Section 7 of the FESA for project impact to Central Valley steelhead. ACOE would also consult with NMFS pursuant to the MSA for potential project effects to EFH for Central Valley fall run/late-fall run chinook salmon. In the event a Section 404 permit is not required, the applicant would likely need to consult with NMFS pursuant to Section 10 of the FESA for impact to Central Valley steelhead; if now federal nexus exists, no consultation would be required for EFH.

Mitigation Measure BR-4: Impacts to the banks and/or channel of Disappointment Slough would be mitigated through preservation, creation and/or restoration of the impacted resources at a minimum ratio of 1:1. In addition, in-channel activities will be limited to the period between June 15 and September 15, when

anadromous fish are least likely to be present. If consultation is required with NMFS, any specific mitigation requirements beyond those mentioned above would also become a condition of project approval.

Implementation of Mitigation Measure BR-4 would prevent the conditions outlined in Significance Criterion BR-c and from occurring and would reduce impacts to a level considered less than significant.

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

The proposed project would convert the agricultural/fallow fields on the project site to residential and mixed-use development. The irrigation and drainage ditches that transect the project site may be under the jurisdiction of the ACOE and/or RWQCB. Consultation with the ACOE will be required to determine if there are wetlands and/or other waters of the U.S./State on the project site. The RWQCB uses ACOE defined areas of jurisdiction to classify waters of the State. Historically, the ACOE has not asserted jurisdiction over manmade irrigation ditches that have questionable connectivity to navigable waters. Recent court cases, however, have determined that agricultural irrigation waters may be regulated by the ACOE. CDFG may also claim jurisdiction over the irrigation ditches if they support substantial habitat for wildlife.

Construction of the outfall structure for the new pump station could also impact wetlands and/or other waters of the U.S. States in Disappointment Slough. It is likely the channel and banks of Disappointment Slough are under the jurisdiction of ACOE, RWQCB, and CDFG.

Therefore, the condition outlined in **Significance Criteria BR-d** could occur. The project would result in potentially significant adverse impacts to waters of the U.S. and State.

Mitigation Measure BR-5: Impacts to the banks and/or channel of Disappointment Slough would be mitigated through preservation, creation and/or restoration of the impacted resources at a minimum ratio of 1:1. If permits are required by ACOE, RWQCB, and/or CDFG, specific mitigation requirements, if different than described above, would also become a condition of project approval.

Implementation of Mitigation Measure BR-5 would prevent the conditions outlined in Significance Criterion BR-d from occurring. Thus, there the project would 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.

Table 4.5.A: Definitions of Acoustical Terms

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

Source: Handbook of Acoustical Measurements and Noise Control, 1991.

Table 4.5.B: Common Sound Levels and 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
	0	Very Faint	

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.

Sensitive Land Uses in the Project Vicinity

The project site and surrounding properties are comprised of agricultural row crops, undeveloped land, and property development in progress. Existing land uses on the project site reflect agricultural uses. Adjacent land uses include: SPW to the east, agricultural uses to the west and south (beyond Bishop Cut and Disappointment Slough), and agricultural uses to the north (beyond Eight Mile Road). The Reserve at Spanos Park golf course is located on the north side of Eight Mile Road across from the project site. The new SPW development has residential uses and an elementary school proposed abutting the project's eastern boundary. These are sensitive receptors that, if built and occupied before construction of the proposed project, would be potentially affected by the construction of the proposed project.

Overview of the Existing Noise Environment

The primary existing noise sources in the project area are transportation facilities. Traffic on Eight Mile Road, I-5, and other collector streets near the site is the dominant source contributing to the area's ambient noise levels. Noise from motor vehicles is generated by engine vibrations, interactions between the tires and the road, and exhaust systems.

Calculated Existing Traffic Noise. The Federal Highway Administration (FHWA) Highway Traffic Noise Model (FHWA-77-108) was used to evaluate highway 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 average daily traffic volumes (ADT) for Existing Conditions were taken from a traffic study that was conducted for the proposed project (Fehr & Peers, 2003). The resultant noise levels are weighted and

summed over 24 hour periods to determine the CNEL value. CNEL contours are derived through a series of computerized iterations to isolate the 60, 65, and 70 dBA CNEL contours for existing traffic noise in the area. Table 4.5.D shows the existing noise levels along representative roadway segments affected by the project traffic.

As shown in Table 4.5.D, traffic noise in the project vicinity is low (Scott Creek Drive, Cosumnes Drive, Mokelumne Drive, and Trinity Parkway) to moderate (Eight Mile Road), with the 70 dBA CNEL confined within the roadway right-of-way along all roadway links 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. The specific assumptions used in developing these noise levels, such as average speed and roadway width, and model printouts are provided in the Appendix G.

Table 4.5.D: Existing Traffic Noise Levels

Roadway Segment	ADT	Center-line to 70 CNEL (feet)	Center-line to 65 CNEL (feet)	Center-line to 60 CNEL (feet)	CNEL (dBA) 50 feet from Outermost Lane
Eight Mile Road					
West of Mokelumne Circle	2,620	< 50 [1]	< 50	66	61.1
Between Mokelumne Circle and Trinity Parkway	4,275	< 50	< 50	91	63.2
Between Trinity Parkway and I-5 SB Ramp	4,200	< 50	< 50	90	63.1
Between I-5 SB Ramp and I-5 NB Ramp	8,520	< 50	67	144	66.2
Between I-5 NB Ramp and Oak Grove Regional Park Entrance	14,905	< 50	97	209	68.6
Scott Creek Drive					
West of Mokelumne Circle	330	< 50	< 50	< 50	45.9
East of Mokelumne Circle	320	< 50	< 50	< 50	45.8
Cosumnes Drive					
West of Mokelumne Circle	140	< 50	< 50	< 50	42.2
Between Mokelumne Circle and Trinity Parkway	625	< 50	< 50	< 50	48.7
East of Trinity Parkway	140	< 50	< 50	< 50	42.2
Mokelumne Drive					
Between Eight Mile Road and Scott Creek Drive	2,000	< 50	< 50	< 50	55.6
Between Scott Creek Drive and Cosumnes Drive	875	< 50	< 50	< 50	52.0
Trinity Parkway					
Between Cosumnes Drive and McAuliffe Drive	375	< 50	< 50	< 50	48.3
South of McAuliffe Drive	130	< 50	< 50	< 50	43.7

Source: LSA Associates, Inc., 2003.
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 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.

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

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, 1996

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

2. 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.
3. 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:

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, 1996

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.

X 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.

X For noise from sources other than roadways, railroads and aircraft, comply with the performance standards contained in Table 4.5.E.

4. Before approving proposed development of new residential land uses in areas exposed to existing or projected exterior noise levels exceeding 60 dBA Ldn/CNEL, an acoustical analysis shall be required. The acoustical analysis shall:

X Be the responsibility of the applicant.

X Be prepared by a qualified person experienced in the fields of environmental noise assessment and architectural acoustics.

X Include representative noise level measurements with sufficient sampling periods and locations to adequately describe local conditions.

X Estimate existing and projected (20 years) noise levels in terms of Ldn/CNEL and/or the standards of Table 4.5.F, and compare those levels to the adopted policies of the Noise Element.

X Recommend appropriate mitigation to achieve compatibility with the adopted policies and standards of the Noise Element. Where the noise source in question consists of intermittent single events, the acoustical analysis must address the effects of maximum noise levels in sleeping rooms in terms of possible sleep disturbance.

X Estimate noise exposure after the prescribed mitigation measures have been implemented. If the project does not comply with the adopted standards and policies of the Noise Element, the analysis must provide acoustical information for a statement of overriding considerations for the project.

5. Describe a post-project assessment program which could be used to evaluate the effectiveness of the proposed mitigation measures.

X Develop and employ procedures to ensure that requirements imposed pursuant to the findings of an acoustical analysis are implemented as part of the project review and building permit processes.

6. Noise produced by commercial uses shall not exceed 75 dBA Ldn/CNEL at the nearest property line.
7. Noise produced by industrial uses shall not exceed 75 dBA Ldn/CNEL at the nearest property line.
8. Exceptions to the noise standards for commercial and industrial uses may be granted only if a recorded noise easement is conveyed by the affected property owners.
9. Enforce the State Noise Insulation Standards (California Administrative Code, Title 24) and Chapter 35 of the Uniform Building Code (UBC).
10. Prepare a community noise control ordinance consistent with the performance standards of the Noise Element and the guidelines of the State Office of Noise Control.
11. Actively support enforcement of California Vehicle Code sections relating to adequate vehicle mufflers and modified exhaust systems.
12. New equipment and vehicles purchased by the City of Stockton shall comply with noise level performance standards consistent with the best available noise reduction technology.

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.

Noise Ordinance

The City's Municipal Code, Article IV, NOISE REGULATIONS, specifies that construction activities that would increase the ambient noise level by more than five dBA at the property line are generally restricted to between 7:00 a.m. and 8:00 p.m. within 500 feet of a residential zone. Loading and unloading of construction equipment or materials within 500 feet of a residential zone are restricted to the hours between 6:00 a.m. and 8:00 p.m.

4.5.3 Impacts and Mitigation Measures

Implementation of the proposed project would 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 Determined to Be Less than Significant

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

The proposed homes and elementary schools would not 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.

Potentially Significant Impacts and Mitigation Measures

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

Two types of short-term noise impacts would occur during project construction. The first is the increase in traffic flow on local streets, associated with the transport of workers, equipment, and materials to and from the project site. The pieces of heavy equipment for grading and construction will be moved to the site, and remain for the duration of each construction phase. The increase in traffic flow on the surrounding roads due to construction traffic is expected to be small. The associated increase in long-term traffic noise will not be perceptible. However, there will be short-term intermittent high noise levels associated with trucks passing the project site.

The second type of short-term noise impact is related to the noise generated by heavy equipment operating on the project site. Construction is performed in discrete steps. Each of these steps has its own mix of equipment and noise characteristics. These various sequential phases would change the character of the noise generated on the site and, therefore, the noise levels surrounding the site. Despite the variety in the type and size 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 typical construction equipment noise levels recommended for noise impact assessments, based on a distance of 50 feet between the equipment, and a noise receptor.

Typical 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 level because the noisiest construction equipment is earthmoving equipment. Earthmoving equipment includes excavating machinery such as dozers and 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 to four minutes at lower power settings.

Construction of the proposed project is expected to require the use of earthmovers, dozers, and water and pickup trucks. Noise typically associated with the use of construction equipment is estimated between 79 and 89 dBA Lmax at a distance of 50 feet from the construction effort for the grading phase. This equipment would be used on the project site. As seen in Table 4.5.G, the maximum noise

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
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.

level generated by each earthmover on the proposed project site is assumed to be 88 dBA Lmax at 50 feet from the earthmover. Each dozer would also generate 88 dBA Lmax at 50 feet.

The maximum noise level generated by water 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 as an individual noise source, the worst case composite noise level during this phase of construction would be 91 dBA Lmax at a distance of 50 feet from an active construction area. The nearest sensitive receptors are residential homes and elementary school in the Spanos Park West development to the east of the project site. These receptors are located at a distance of approximately 100 feet and may be subjected to short-term noise reaching 85 dBA Lmax.

Construction related noise impacts of the proposed project would be potentially adverse and will be significant in the short term.

Mitigation Measure NOI-2

During project construction, the construction superintendent shall implement the following measures to reduce construction noise impacts:

X Limiting construction activities that would increase the ambient noise level by more than five dBA at the property line to between 7:00 a.m. and 8:00 p.m. within 500 feet of a residential zone.

X Proper muffling and maintenance of all internal combustion engines used for construction on the site;

X Locating all stationary noise generating sources, such as air compressors and portable power generators, as far away as possible from homes and classrooms; and

X Prohibiting unnecessary idling of internal combustion engines.

Implementation of Mitigation Measures NOI-2 will ensure that noise impacts related to construction activities will not be significant.

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

Traffic Impact

The proposed residential homes and schools would result in new traffic trips to and from the project site. These traffic trips would also impact roadway links and intersections in the project vicinity. Existing off-site sensitive receptors in the vicinity of the project site (e.g., within Spanos Park West) would be potentially affected by noise associated with these new traffic trips. The proposed facilities may also be exposed to potentially significant traffic noise impacts.

The future traffic noise levels along roadway links in the project vicinity were calculated using the FHWA Highway Traffic Noise Prediction Model. The future 2008 and 2025 traffic volumes were taken from a traffic study conducted for the project (Fehr & Peers, 2003). Table 4.5.H lists the calculated year 2008 baseline traffic noise levels along roadway links in the project vicinity. Table 4.5.I lists the year 2008 plus project traffic noise levels along the same roadway links. Table 4.5.J lists the year 2025 baseline no project traffic noise levels along the same roadway links. Table 4.5.K lists the calculated year 2025 plus project traffic noise levels along roadway links in the project vicinity. Similar to the existing conditions, these traffic noise levels represent the worst case scenario, which assumes that no shielding is provided between the roadway traffic and where the contours are drawn.

Tables 4.5.H and 4.5.J show that, under the future year 2008 and year 2025 conditions without the project, traffic noise along Eight Mile Road and Trinity Parkway would increase by a large margin over their corresponding existing levels. The 70 dBA CNEL contour along Eight Mile Road would extend up to 85 and 97 feet, respectively, from the roadway centerline for the years 2008 and 2025. The 65 dBA CNEL contour would extend up to 173 and 202 feet, respectively, for the years 2008 and 2025. Along Trinity Parkway, the 70 dBA CNEL would remain confined within the roadway right of way, but the 65 dBA CNEL contour would extend up to 66 and 71 feet, respectively, from the roadway centerline for the years 2008 and 2025.

Table 4.5.H: Year 2008 Baseline Traffic Noise Levels

ROADWAY SEGMENT	ADT	CENTER-LINE TO 70 CNEL (FEET)	CENTER-LINE TO 65 CNEL (FEET)	CENTER-LINE TO 60 CNEL (FEET)	CNEL (DBA) 50 FEET FROM OUTERMOST LANE
Eight Mile Road					
West of Mokelumne Circle	2,660	< 50 [1]	< 50	67	61.1
Between Mokelumne Circle and Trinity Parkway	11,195	< 50	81	173	66.8
Between Trinity Parkway and I-5 SB Ramp	34,845	85	173	368	70.4
Between I-5 SB Ramp and I-5 NB Ramp	29,830	80	158	333	69.4
Between I-5 NB Ramp and Oak Grove Regional Park Entrance	27,940	77	151	319	69.1
Scott Creek Drive					
West of Mokelumne Circle	2,010	< 50	< 50	< 50	53.8
East of Mokelumne Circle	1,690	< 50	< 50	< 50	53.0
Cosumnes Drive					
West of Mokelumne Circle	680	< 50	< 50	< 50	49.1
Between Mokelumne Circle and Trinity Parkway	7,875	< 50	< 50	53	59.7
East of Trinity Parkway	3,850	< 50	< 50	< 50	56.6
Mokelumne Drive					
Between Eight Mile Road and Scott Creek Drive	8,955	< 50	< 50	77	62.1
Between Scott Creek Drive and Cosumnes Drive	3,935	< 50	< 50	< 50	58.5
Trinity Parkway					
Between Eight Mile Road and Cosumnes Dr.	17,895	< 50	57	122	65.1
Between Cosumnes Drive and McAuliffe Drive	22,320	< 50	66	141	66.1
South of McAuliffe Drive	16,370	< 50	54	115	64.7

Source: LSA Associates, Inc., 2003.
Notes: [1] Traffic noise within 50 feet of roadway centerline requires site specific analysis.

Table 4.5.I: Year 2008 Plus Project Traffic Noise Levels

ROADWAY SEGMENT	ADT	CENTER-LINE TO 70 CNEL (FEET)	CENTER-LINE TO 65 CNEL (FEET)	CENTER-LINE TO 60 CNEL (FEET)	CNEL (DBA) 50 FEET FROM OUTERMOST LANE	CHANGE FROM NO PROJECT LEVEL (DBA)
Eight Mile Road						
West of Rio Blanco Road	2,400	< 50 [1]	< 50	62	60.7	N/A
Between Rio Blanco Road and Westlake Villages Entrance [1]	10,705	< 50	78	168	67.2	N/A
Between Westlake Villages Entrance [1] and Westlake Villages Entrance [2]	16,965	< 50	106	228	69.2	N/A
Between Westlake Villages Entrance [2] and Mokelumne Circle	23,770	62	133	285	70.6	9.5
Between Mokelumne Circle and Trinity Parkway	32,360	76	163	350	70.4	3.6
Between Trinity Parkway and I-5 SB Ramp	55,160	112	233	499	72.4	2.0
Between I-5 SB Ramp and I-5 NB Ramp	43,000	98	199	424	71.0	1.6
Between I-5 NB Ramp and Oak Grove Regional Park Entrance	32,015	83	165	349	69.7	0.6
Scott Creek Drive						
West of Mokelumne Circle	3,360	< 50	< 50	< 50	56.0	2.2
East of Mokelumne Circle	3,040	< 50	< 50	< 50	55.6	2.6
Cosumnes Drive						
West of Mokelumne Circle	1,310	< 50	< 50	< 50	51.9	2.8
Between Mokelumne Circle and Trinity Parkway	10,780	< 50	< 50	66	61.1	1.4
East of Trinity Parkway	4,970	< 50	< 50	< 50	57.7	1.1
Mokelumne Drive						
Between Eight Mile Road and Scott Creek Drive	9,010	< 50	< 50	77	62.1	0.0
Between Scott Creek Drive and Cosumnes Drive	4,915	< 50	< 50	52	59.5	1.0
Trinity Parkway						
Between Eight Mile Road and Cosumnes Drive	18,560	< 50	58	125	65.3	0.2
Between Cosumnes Drive and McAuliffe Drive	24,580	< 50	70	151	66.5	0.4
South of McAuliffe Drive	17,360	< 50	56	120	65.0	0.3

Source: LSA Associates, Inc., 2003.
Notes: [1] Traffic noise within 50 feet of roadway centerline requires site specific analysis.

Table 4.5.J: Year 2025 Baseline Traffic Noise Levels

ROADWAY SEGMENT	ADT	CENTER-LINE TO 70 CNEL (FEET)	CENTER-LINE TO 65 CNEL (FEET)	CENTER-LINE TO 60 CNEL (FEET)	CNEL (DBA) 50 FEET FROM OUTERMOST LANE
Eight Mile Road					
West of Mokelumne Circle	8,000	< 50 [1]	64	138	65.9
Between Mokelumne Circle and Trinity Parkway	15,700	< 50	101	217	68.3
Between Trinity Parkway and I-5 SB Ramp	44,200	97	202	431	71.5
Between I-5 SB Ramp and I-5 NB Ramp	39,300	93	188	399	70.6
Between I-5 NB Ramp and Oak Grove Regional Park Entrance	29,800	80	158	333	69.4
Scott Creek Drive					
West of Mokelumne Circle	3,100	< 50	< 50	< 50	55.6
East of Mokelumne Circle	2,600	< 50	< 50	< 50	54.9
Cosumnes Drive					
West of Mokelumne Circle	4,100	< 50	< 50	< 50	56.9
Between Mokelumne Circle and Trinity Parkway	10,750	< 50	< 50	66	61.0
East of Trinity Parkway	3,500	< 50	< 50	< 50	56.0
Mokelumne Drive					
Between Eight Mile Road and Scott Creek Drive	9,900	< 50	< 50	82	62.5
Between Scott Creek Drive and Cosumnes Drive	4,750	< 50	< 50	51	59.4
Trinity Parkway					
Between Eight Mile Road and Cosumnes Dr.	23,800	< 50	69	148	66.4
Between Cosumnes Drive and McAuliffe Drive	25,150	< 50	71	153	66.6
South of McAuliffe Drive	18,100	< 50	57	213	65.2

Source: LSA Associates, Inc., 2003.
Notes: [1] Traffic noise within 50 feet of roadway centerline requires site specific analysis.

Table 4.5.K: Year 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						
West of Rio Blanco Road	2,360	< 50 [1]	< 50	62	60.6	N/A
Between Rio Blanco Road and Westlake Villages Entrance [1]	13,360	< 50	90	194	68.1	N/A
Between Westlake Villages Entrance [1] and Westlake Villages Entrance [2]	22,310	59	127	273	70.4	N/A
Between Westlake Villages Entrance [2] and Mokelumne Circle	29,110	71	152	326	71.5	5.6
Between Mokelumne Circle and Trinity Parkway	36,870	83	178	382	72.0	3.7
Between Trinity Parkway and I-5 SB Ramp	64,510	123	259	554	73.1	1.6
Between I-5 SB Ramp and I-5 NB Ramp	52,475	110	227	483	71.9	1.3
Between I-5 NB Ramp and Oak Grove Regional Park Entrance	33,880	86	171	362	70.0	0.6
Scott Creek Drive						
West of Mokelumne Circle	4,450	< 50	< 50	< 50	57.2	1.6
East of Mokelumne Circle	3,950	< 50	< 50	< 50	56.7	1.8
Cosumnes Drive						
West of Mokelumne Circle	4,730	< 50	< 50	< 50	57.5	0.6
Between Mokelumne Circle and Trinity Parkway	13,660	< 50	< 50	77	62.1	1.1
East of Trinity Parkway	6,420	< 50	< 50	< 50	58.8	-2.1
Mokelumne Drive						
Between Eight Mile Road and Scott Creek Drive	9,960	< 50	< 50	83	62.6	0.1
Between Scott Creek Drive and Cosumnes Drive	5,735	< 50	< 50	57	60.2	0.8
Trinity Parkway						
Between Eight Mile Road and Cosumnes Drive	24,465	< 50	70	150	66.5	0.1
Between Cosumnes Drive and McAuliffe Drive	27,400	< 50	76	162	67.0	0.4
South of McAuliffe Drive	19,070	< 50	59	127	65.4	0.2

Source: LSA Associates, Inc., 2003.
Notes [1] Traffic noise within 50 feet of roadway centerline requires site specific analysis.

Off-site Traffic Noise Impact

Tables 4.5.I and 4.5.K show that project-related traffic noise level increases along most roadway segments in the project vicinity would be 2.8 dBA or lower in year 2008 and 2025, except along Eight Mile Road. These traffic noise level increases are less than the 3 dBA threshold of change considered to be perceptible to human ear. Although there are existing residences along these roadways, noise impact from project-related increases would be considered less than significant.

Along Eight Mile Road, however, project related traffic noise level increases would be greater than 3 dBA between the project site and Trinity Parkway. Based on traffic noise levels included in Table 4.5.K, areas along Eight Mile Road would be exposed to traffic noise reaching 70 dBA CNEL. However, the proposed residential uses in the SPW development along Eight Mile Road in this area have an eight-foot noise barrier proposed along Eight Mile Road, and would effectively reduce the exterior noise levels to 65 dBA CNEL or lower. Therefore, no significant traffic noise impacts on off-site sensitive uses would occur. Project-related traffic noise level increases along other segments of Eight Mile Road would be below the 3 dBA threshold and would not result in any significant impacts.

On-site Traffic Noise Impact

The City discourages residential homes and elementary schools to be built in areas exceeding the 60 dBA CNEL, unless the project design includes effective mitigation measures allowing up to a maximum of 65 dBA CNEL noise standard. If new construction or development does proceed, noise insulation features must be included in the design. Standard construction for residential exterior walls would provide a minimum sound transmission class (STC) rating of STC-42, which would provide sufficient noise attenuation. A hollow-core wood door with no gaskets would provide an STC-12. With gaskets and drop door bottom seals, the door provides STC-19. A solid-core wood door with gaskets and drop door seals would provide at least STC-21. Steel doors and wood doors with adequate acoustical ratings can achieve up to STC-51 in noise attenuation. Monolithic and insulated glass provides STC ratings from the high 20s to the low 30s. Double paned windows provide STC ratings from the high 30s to the high 40s in noise attenuation.

Homes That Would Not Be Significantly Impacted by Traffic Noise. The proposed residential homes and elementary school that are not directly adjacent to Eight Mile Road would not be exposed to noise levels exceeding 60 dBA CNEL. This is less than the maximum 65 dBA CNEL exterior noise standard recommended by the City. These homes and elementary school would not be significantly affected by traffic noise from Eight Mile Road or any other local streets in the project area due to the distance and shielding provided by the front line buildings/structures. Standard construction for California residential buildings would provide 24 dBA or more in exterior to interior noise reduction with windows closed. With windows open, the noise reduction is 12 dBA or higher. It is not expected that the interior of these proposed residential dwellings would experience more than 45 dBA CNEL from traffic noise. The City's recommended interior noise standard of 45 dBA CNEL would not be violated.

Homes That Would Be Potentially Impacted by Significant Traffic Noise. The proposed residential uses on the northern part of the project site along Eight Mile Road would be potentially impacted by noise exceeding 70 dBA CNEL from Eight Mile Road traffic.

Typically, there are three types of traffic noise impacts that require measures to reduce the noise level:

X Group A: Areas that would be exposed to traffic noise exceeding 70 dBA CNEL. Residential homes with outdoor use areas exposed to traffic noise would require a freestanding sound wall

or sound wall and berm combination with an effective height of eight feet above grade along the property line. This eight foot sound wall or sound wall/berm combination would provide 7 dBA or more in noise reduction for ground floor receptors, when the direct line of sight to the traffic is blocked. Ground floor bedrooms facing the road would receive 7 dBA or more in noise attenuation provided by the sound wall or sound wall/berm combination. With a combination of walls, doors, and windows, standard construction for northern California residential buildings would provide more than 24 dBA in exterior to interior noise reduction with windows closed and 12 dBA or more with windows open. With windows closed, interior noise level in ground floor units would be 45 dBA CNEL or lower. Therefore, no building facade upgrades would be required. However, with windows open, there is a potential for interior noise in the ground floor units to exceed the 45 dBA CNEL standard (e.g., 63 dBA - 12 dBA = 51 dBA). Therefore, an air conditioning system, a form of mechanical ventilation, would be required to ensure that windows can remain closed for a prolonged period of time.

For second-story bedrooms exposed to 70 dBA CNEL or higher traffic noise, the eight foot sound wall would not provide sufficient noise mitigation. Therefore, second-story bedrooms with windows exposed to the traffic require building facade upgrades, such as double paned (or dual glazing) windows. In addition, mechanical ventilation, such as an air conditioning system, would be required.

Dwelling units located within 71 feet of the roadway centerline of Eight Mile Road would have the potential to be exposed to 70 dBA CNEL traffic noise impacts, and therefore, would be subject to the above requirements.

X Group B: Areas that would be exposed to traffic noise between 65 and 70 dBA CNEL. Residential homes with outdoor active use areas exposed to the traffic would require a freestanding sound wall or sound wall and berm combination with an effective height of six feet above grade along the property line. This six foot sound wall or sound wall/berm combination would provide 5 dBA or more in noise reduction for ground floor receptors when the direct line of sight to the traffic is blocked. Ground floor bedrooms facing the road would receive 5 dBA or more in noise attenuation provided by the sound wall or sound wall/berm combination. With windows closed, interior noise level in ground floor units would be 45 dBA CNEL or lower. Therefore, no building facade upgrades would be required. However, with windows open, there is a potential for interior noise in the ground floor units to exceed the 45 dBA CNEL standard (e.g., 60 dBA - 12 dBA = 48 dBA). Therefore, an air conditioning system should be provided to ensure that windows can remain closed for a prolonged period of time.

For second-story bedrooms exposed to 65 to 70 dBA CNEL traffic noise, the six foot sound wall would not provide sufficient noise mitigation. Therefore, second-story bedrooms with windows exposed to the traffic require building facade upgrades, such as double paned (or dual glazing) windows. In addition, an air conditioning system would be required.

Dwelling units located within 152 feet of the roadway centerline of Eight Mile Road, when no homes (such as Group A Homes above) or other structures are built between the road and these dwelling units, would have the potential to be exposed to 65 dBA CNEL traffic noise impacts, and therefore, would be subject to the above requirements.

X Group C: Areas that would be exposed to traffic noise between 57 and 65 dBA CNEL. Residential homes that fall within this category do not require mitigation measures for their outdoor active use areas, such as backyards or barbecue areas. With windows open, Group C homes would potentially experience interior noise levels exceeding the 45 dBA CNEL (e.g., 60 dBA - 12 dBA = 48 dBA) standard adopted by the State of California and City. An air conditioning system should be provided to ensure that windows can remain closed for a prolonged period of time. No building facade upgrades would be required.

Dwelling units located within 326 feet of the roadway centerline of Eight Mile Road, when no homes (such as Group A or Group B homes above) or other structures are built between the road and these dwelling units, would have the potential to be exposed to 60 dBA CNEL traffic noise impacts. There are no dwelling units exposed to this condition (i.e., all homes at this distance are shielded by intervening homes).

Other On-site Noise Impacts

The proposed residential homes would be adjacent to pump stations. It is not anticipated that pump noise would result in any significant noise impacts, as long as the City's noise ordinance requirements are met.

Similarly, noise associated with outdoor activities at the proposed elementary school would need to comply with the City's noise ordinance requirements, and would not result in any significant noise impacts.

Mitigation Measure NOI-3: During project operation, the following mitigation measures should be implemented to reduce long-term project related traffic noise impacts:

X Mechanical ventilation, such as air conditioning systems, is recommended for all residential homes along Eight Mile Road and are within 326 feet of the roadway centerline.

X A six-foot barrier is recommended for all outdoor active use areas, such as backyards, associated with homes along Eight Mile Road and are within 152 feet of the roadway centerline with direct exposure to traffic on Eight Mile Road. A five-foot barrier is recommended for balconies, if any, associated with these homes. Windows with a minimum sound transmission class (STC) rating of STC-30 are recommended for all bedroom windows within 152 feet of Eight Mile Road centerline and are directly exposed to traffic. Maintenance of sounds walls will be the responsibility of the HOA.

X An eight-foot barrier is recommended for all outdoor active use areas, such as backyards, associated with homes along Eight Mile Road and are within 71 feet of the roadway centerline. A five-foot barrier is recommended for balconies associated with these homes. Windows with a minimum STC-32 are recommended for all bedroom windows within 152 feet of Eight Mile Road centerline and are directly exposed to traffic. Maintenance of sounds walls will be the responsibility of the HOA.

Implementation of Mitigation Measures NOI-3 will ensure that noise impacts related to traffic will not be significant.

4.5.4 Level of Significance after Mitigation

There would be no significant noise impacts from short-term construction or long-term operation of the project site after implementation of Mitigation Measures NOI-2 and NOI-3.

4.6 LAND USE

4.6.1 Existing Setting

Existing Land Use

The project site consists of agricultural fields and Paradise Point Marina. Drainage and irrigation ditches transect the project site. These ditches provide aquatic habitat and riparian vegetation. The project site is surrounded by a variety of land uses. To the north of Eight Mile Road are agricultural uses, and the Reserve at Spanos Park golf course. To the west is Bishop Cut and agricultural operations. To the south is Disappointment Slough. The slough is hydrologically connected to the San Joaquin/Sacramento Delta. To the east, SPW is a multi-use development consisting of residential and commercial components. Figure 4.6.1 illustrates the existing land uses.

General Plan

The project site is currently within the jurisdiction of San Joaquin County. A component of the project is to annex the Master Development Plan Area within the City's boundaries. Subsequent to the annexation, the project site will be under the jurisdiction of the City and guided by the City's General Plan. Figure 4.6.2 illustrates the existing County General Plan land use designations on the project site. Table 4.6.A presents the acreage for existing County General Plan designations. The Spanos Parcel will be included in the General Plan Amendment and Sphere of Influence/Urban Service Area changes but will not be annexed as part of the project.

Table 4.6.A: Existing General Plan Designations

APN	COUNTY GENERAL PLAN	ACRES
071-12-13	General Agriculture	11.2
071-12-11	General Agriculture	671.5
055-310-04, 055-310-05, 055-310-06	Commercial- Recreation	170
Total		852.7

The existing San Joaquin County General Plan designation for the development and marina parcels is General Agriculture. This designation is intended to preserve agricultural lands for the continuation of commercial agricultural enterprises. The existing County General Plan designation for the Spanos Parcel is Commercial-Recreation.

Existing Zoning

The existing zoning districts for the project site are shown on Figure 4.6.3 and listed in Table 4.6.B. All of the land within the Master Development Plan Area is currently zoned AG-40. This zoning designation allows agricultural uses. The zoning for the Spanos Parcel is Commercial-Recreation (C-R) in unincorporated San Joaquin County.

Figure 4.6.1: Existing Surrounding Land Uses

Figure 4.6.2: Existing General Plan Designations

Figure 4.6.3: Existing Zoning Designations

Table 4.6.B: Existing Zoning Designations

APN	COUNTY ZONING	ACRES
071-12-13 (Marina)	AG-40	11.2
071-12-11 (Development Project)	AG-40	671.5
055-310-04, 055-310-05, 055-310-06 (Spanos Parcel)	C-R	170
Total		852.7

Surrounding General Plan Land Use

The San Joaquin County General Plan designates the lands to the north of the project site as General Agriculture. Lands to the south and west (across Disappointment Slough and Bishop Cut) are designated as General Agriculture. These lands are outside of the area designated as the Stockton Urban Service Area. The Urban Service Area is applied to areas where future urban development is anticipated, and infrastructure is or will be available. If the City of Stockton intends to provide service outside the City limits, the City must apply to and obtain approval from Local Agency Formation Commission (LAFCO).

The City of Stockton General Plan designates the land bordering to the east of the project site (SPW) as Low Density Residential. Interstate 5 is located east of SPW.

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.

Special Planning Study Area

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

4.6.2 Impact Significance Criteria

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

LU-a Type and extent of conversion from agricultural to suburban uses;

LU-b Change in land use represents a substantial adverse deviation from the character of the previous designations;

LU-c Compatibility with surrounding land uses (current and planned);

LU-d Consistency with City General Plan and regional land use plans and policies; and

LU-e Result in a substantial increase in intensity as a result of land use changes.

4.6.3 Impacts and Mitigation Measures

Effects Considered Not to Be Significant

Impact LU-1: The project may have growth inducing impacts and inconsistencies with regional land use policies.

The Westlake Villages project is located at the extreme limits of Stockton's boundaries, minimizing the opportunity to extend growth into adjacent San Joaquin County. The County's jurisdictional control, combined with the agricultural designations north of Eight Mile Road, provides emphasis on the limitations of the Westlake Villages project's growth-inducing influence on those lands, including such influence on the Community Separator (**Significance Criteria LU-d**).

Potentially Significant Impacts

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

The 11.2-acre marina parcel is considered Prime Farmland and zoned within the County as AG-40. The soils mapped on the site are also prime soils, however, this site is actively used as a marina. As such, these land uses are not conducive to agricultural production. The Master Development Plan proposes to develop the marina parcel based on future market forces, therefore the existing onsite land uses are not expected to change in the near future. The eventual conversion of the marina parcel to urban uses is not considered significant within respect to the conversion of agricultural lands due to the existing on-site land uses.

The remainder of the project site encompasses 841.5 acres (development and Spanos Parcel) of Prime Farmland that is actively farmed with row crops. Implementation of the project will convert this agricultural land to urban uses. This conversion runs contrary to policies set by the City and County General Plans to protect agricultural lands outside the City's boundary. Although this conversion presents a logical expansion of urban uses due to the proximity of SPW, the site is still agriculturally productive. Soils comprising the site are all considered prime agricultural soils which would be irretrievably lost through project development. Therefore, the conditions outlined in **Significance Criteria LU-a** would occur.

The proposed project will result in the conversion of agricultural lands. This represents an adverse effect on land use. No feasible mitigation is available to offset this impact.

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

The applicant is proposing a change in land use and zoning for the Master Development Plan Area. A General Plan Amendment is being requested for the Spanos Parcel. Tables 4.6.A and 4.6.B illustrate the changes required for the proposed project. The proposed project will amend the existing City General Plan and zoning designations with the following:

General Plan. The development and marina parcel will be redesignated to Mixed Use. This designation provides for 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 residential, administrative and professional offices, retail and service uses, light industrial, and public and quasi-public facilities. The allowable residential densities, nonresidential intensities, and the specific development standards for proposed projects are presented in the Master Development Plan (Appendix B). The Spanos Parcel will be redesignated as Low-Medium Density Residential but will not be developed as part of the project. Previous Figure 3.4.1 illustrates the proposed General Plan designations.

Zoning. The development and marina parcels would be prezoned M-X (Mixed Use District) as illustrated in Figure 3.4.2. This is the zoning district that most closely corresponds to the Mixed Use designation. Rezoning to the M-X (Mixed Use) zoning district shall occur concurrent with the Master Development Plan and General Plan Amendment. The M-X zoning district is intended to apply to large properties that can accommodate a wide range of residential and nonresidential land uses. Specific land uses and specific development standards for each M-X zoning district shall be determined on a site-by-site basis, as defined in the Master Development Plan prepared for the proposed project. The M-X zoning district is consistent with the Mixed Use land use designation of the General Plan. The Spanos Parcel will not be prezoned as part of the proposed project.

The project proposes to change the existing agricultural land use in the San Joaquin County General Plan to Mixed Use designations for the development and marina parcels. The Mixed Use designations allow for a variety of land uses, however, the Westlake Villages project proposes only residential uses at a variety of densities on the development parcel. Development of the marina would depend on future market forces. The Spanos Parcel will be changed from Commercial Recreation in the County's General Plan to Low-Medium Density Residential in the City's General Plan. While both designations (County and City) allow residential uses, the land use change will facilitate the conversion of current agricultural land uses to urban uses on the Spanos Parcel. These residential uses represent a significant change from the existing agricultural character of the site. Land use intensity will also be significantly increased (**Significance Criterion LU-b**).

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

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

Land use compatibility within the project's proposed land uses and existing surrounding land uses are reviewed in the following sections. Planned developments located adjacent to the proposed project are identified in Table 3.1.A.

Residential Land Uses

Figure 3.3.1 presents the overall Master Development Plan for the project. All areas within the Master Development Plan Area will be developed with residential or associated uses. Land use changes on the marina parcel are dependent on future market forces. The Spanos Parcel will not be developed as part of the project.

There are four land uses surrounding the project site: single family residential (east), open space and sloughs (south and west), golf and recreation (north), and agriculture (north, west, and south).

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

There are no apparent land use conflicts between the project and the SPW Mixed Use development located east of the proposed project site. The Reserve at Spanos Park is located north of a portion of the proposed project site. This recreational use is compatible with the M-X designations since Westlake Villages will be developed as a residential community. The adjacent waterways (Bishop Cut and Disappointment Slough) and levees provide open space and recreational opportunities. These uses are not incompatible with the proposed project as long as these natural resources are protected from degradation or destruction. Mitigation measures provided within Section 4.2, Water Resources and Section 4.4, Biological Resources will minimize negative impacts to water resources, therefore, the proposed project land use is not inconsistent with these residential, open space, and recreational uses.

Although the Spanos Parcel will be redesignated to Low-Medium Density Residential in the General Plan Amendment, the parcel will not be developed as part of the project and will retain its current agricultural land uses. The residential uses proposed for the Master Development Plan Area are not consistent with the agricultural land uses on the Spanos Parcel. No buffers or physical barriers exist between the Master Development Plan Area and Spanos Parcel. Due to the lack of physical barriers, impacts could include late night agricultural operations, nuisance odors, and dust and wind erosion disturbing Westlake Villages residents, or residents vandalizing agricultural areas.

The following mitigation is proposed to reduce the potential conflicts associated with the proposed residential uses with the ongoing agricultural operations on the Spanos Parcel.

Mitigation Measure LU-1: To reduce agricultural/residential land use incompatibilities, the following shall be required:

X The Applicant/Developer(s) shall inform and notify prospective buyers in writing, prior to purchase, about existing and on-going agricultural activities in the immediate area in the form of a disclosure statement. The notifications shall disclose that the Stockton area is an agricultural area subject to ground and aerial applications of chemical and early morning or nighttime farm operations which may create noise, dust, et cetera. The language and format of such notification shall be reviewed and approved by the City Community Development Department prior to recordation of final map(s). Each disclosure statement shall be acknowledged with the signature of each prospective owner.

X Prior to issuance of certificates of occupancy and predicated on the sequence of development, the perimeter of the project site affected by the potential conflicts in land use noted above shall be appropriately buffered by a landscaped open space buffer area, fences, and/or walls, to minimize conflicts between project residents, non-residential uses, and adjacent agricultural uses.

X Proposed homes adjacent to active agricultural operations shall be included in the final project construction phases.

X Prior to recordation of the final map(s) for homes adjacent to existing agricultural operations, the Applicant/Developer shall submit a detailed wall and fencing plan for review and approval by the Community Development Department.

Implementation of the proposed project will result in land use incompatibilities with agricultural uses on the Spanos Parcel.

Elementary School

The proposed elementary school will be located near the southeastern corner of the project site. The applicant is working with the Lodi Unified School District to determine the suitability of the proposed location. By locating the school adjacent to residential uses, this avoids potential land use compatibility conflicts between surrounding agricultural uses on the Spanos Parcel.

Parks and Open Space

The public and village parks proposed within Westlake Villages are consistent with the proposed residential uses. The parks and open space will not be incompatible with surrounding land uses.

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

Table 4.6.C: Primary Land Use Compatibility

PROPOSED PROJECT	ADJACENT LAND USE		COMPATIBILITY
LAND USE	DIRECTION	LAND USE	
Residential	East	Residential (SPW)	Compatible
Residential	North	Agriculture (north of Eight Mile Road)	Compatible
Residential	North	Recreation (The Reserve at Spanos Park)	Compatible
Residential	Northwest	Agriculture (Spanos parcel)	Incompatible
Residential	West	Agriculture (across Bishop Cut)	Compatible
Residential	West	Open Space (Bishop Cut)	Compatible
Residential	South	Open Space (Disappointment Slough)	Compatible
Residential	South	Agriculture	Compatible

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

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

Table 4.6.D: Goals and Policies

GOALS AND POLICIES	PAGE NUMBER	GOAL AND POLICY NUMBER	CONSISTENCY STATEMENT
General Objectives	I-13	**Objective 1:** Develop a balanced and complete community in terms of land use distribution and densities, housing types, and economic development opportunities.	**Consistent.** The proposed project provides a well developed community that integrates low and medium single family residential and Active Adult living units with open space, recreation area, parklands, and education facilities. The proximity of the SPW commercial development provides a nearby job base.
General Objectives	I-13	**Objective 4:** Promote the development of a sufficient quantity and variety of decent, safe, and sanitary housing units to meet the needs of all residents.	**Consistent.** The proposed project will provide a maximum of 2,894 low to medium density residential units. As proposed, the project would develop a maximum of 847 Active Adult units and 2,047 conventional single-family residential units.
General Objectives	I-13	**Objective 5**: Establish a balanced transportation and circulation system which provides for the efficient movement of people and goods while minimizing the impacts on adjacent land uses.	**Consistent.** A fundamental objective of the Westlake Villages project is to provide an orderly hierarchy of roadways to meet the transportation demands generated by the project. In addition, the proximity of SPW's commercial business center provides employment opportunities and the efficient movement of people and goods between developments will be facilitated.
General Objectives	I-13	**Objective 11:** Promote development which by its location and design reduces the need for nonrenewable energy resources and the associated release of air pollutants.	**Consistent.** The proximity of SPW's commercial business center increases the efficiency and movement of people and goods within the development.
Land Use - Urban Growth and Overall Development	III-1	**Goal 1, Policy 2:** The Urban Service Area shall be expanded only when applicable General Plan policies can be met and appropriate services and efficient infrastructure can be provided.	**Consistent**. Based on City policies, the project site will not be annexed unless adequate services, utilities, and infrastructure are available. The project applicant will extend all infrastructure from SPW and pay appropriate fees to mitigate related impacts. Additionally, the project applicant will provide amendments to the City's Sewer, Water, and Drainage Master Plans.
Land Use - Urban Growth and Overall Development	III-1	**Goal 1, Policy 3:** Future urban development adjacent to the City should occur within the City. This requires that vacant unincorporated properties shall annex to the City prior to provision of any City services.	**Consistent**. The project applicant has submitted an annexation application to the City of Stockton.
Land Use - Urban Growth and Overall Development	III-1	**Goal 1, Policy 4:** Considering the large amount of undeveloped land beyond the existing City Limits yet within the Urban Service Area, it 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.** A majority of the area within the Urban Service Area has been developed. The project is located adjacent to an area that is currently being developed with residential and commercial uses.

GOALS AND POLICIES	PAGE NUMBER	GOAL AND POLICY NUMBER	CONSISTENCY STATEMENT
Land Use - Urban Growth and Overall Development	III-3	**Goal 4, Policy 1:** The wasteful and inefficient sprawl of urban uses into agricultural lands surrounding the urban area should be avoided by regulating the location of urban uses through the Urban Growth and Overall Development policies to minimize the consumption of agricultural land and other open areas containing valuable natural resources or scenic beauty.	**Inconsistent.** The project will convert 841.5 acres of productive agricultural lands and prime agricultural soils to urban uses.
Land Use - Urban Growth and Overall Development	III-4	**Goal 4, Policy 2:** Urban growth shall be geographically limited by such environmental hazards as flood vulnerability and unstable soil characteristics.	**Consistent.** Extensive improvements have occurred to levee structures surrounding the project area. As a result of these improvements, the project site is 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	III-4	**Goal 4. Policy 3:** Urban growth, particularly sensitive developments (i.e., homes, schools, hospitals) should avoid locating in areas which are subject to adverse environmental or noise impacts.	**Consistent.** The proposed project is not located in an area that is subject to adverse environmental or noise impacts.
Land Use - Urban Growth and Overall Development	III-4	**Goal 4, Policy 4:** Environmentally sensitive areas, such as the Delta, oak groves, and areas of archaeological/historic value, should be preserved for the benefit of present and future generations.	**Inconsistent.** The farmstead located on the project site is potentially eligible for the California Register and will be removed through project implementation.
Land Use - Urban Growth and Overall Development	III-4	**Goal 4, Policy 5:** Storm water quality measures shall be undertaken to enhance to the maximum extent practicable the quality of the water in the sloughs, creeks, and rivers in this area.	**Consistent.** The applicant will be required to comply with conditions set forth in all applicable permits which may include: NPDES General Construction Permit, Waste Discharge Permit, Streambed Alteration Agreement, and/or Section 404 permit. The proposed storm drainage system must also be approved by the City's Municipal Utilities Department.
Land Use - Urban Growth and Overall Development	III-4	**Goal 4, Policy 6:** Encourage the use of energy efficient transportation systems and building designs along with other measures to reduce air pollution and to conserve energy resources in the process of urban 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	III-4	**Goal 1, Policy 1:** Encourage the development of identifiable boundaries for the City to maintain a sense of community identity. The City should also consider the development of some type of "gateway" treatment at major entrances into the City.	**Consistent.** The proposed project will extend the City's boundary west of the existing Spanos Park West residential/commercial development. The Master Development Plan for the proposed project provides landscaping and entry treatments into the residential development from Eight Mile Road that are aesthetically pleasing and will promote a positive image for the City.

GOALS AND POLICIES	PAGE NUMBER	GOAL AND POLICY NUMBER	CONSISTENCY STATEMENT
Land Use - City Concept and Design	III-5	**Goal 1, Policy 3:** Residential subdivisions shall be designed to provide for internal circulation within neighborhoods and to prevent through traffic from traversing neighborhoods.	**Consistent.** Connector roadway facilities are proposed for Westlake Villages project. Likewise, additional connections are being provided to Spanos Park West at the eastern end of the project site. These roadway connections are designed to convey traffic on major collector roads (Eight Mile Road), thus avoiding residential neighborhood impacts.
Land Use - City Concept and Design	III-5	**Goal 1, Policy 4:** Promote aesthetically pleasing and environmentally sound urban development by providing for design flexibility through the use of development controls such as planned unit developments.	**Consistent.** An objective of the project is to provide sound urban development while also providing maximum flexibility in the design concepts. Standards and design concepts proposed in the Master Development Plan have been designed to maintain considerable flexibility in the approach to development. All of the design concepts and guidelines are intended to promote aesthetically pleasing and environmentally sound planning development concepts.
Land Use - City Concept and Design	III-5	**Goal 2, Policy 1:** Varied residential densities, housing types, and styles should be equitably and appropriately distributed throughout the community and integrated with public facilities and commercial services.	**Consistent.** The project proposes a range of densities that provide low to medium density units. The proposed project will provide conventional single family residential units and Active Adult units.
Land Use - Residential Land Use	III-6	**Goal 2, Policy 1:** The neighborhood shall be utilized as the basic planning unit for maintaining and preserving existing residential areas and in the planning of new ones. Key features of the neighborhood unit include a centrally located meeting place (i.e., school, park), access to arterials only through collector streets with an internally directed local street system, and services located at the periphery of the neighborhood (i.e., commercial, offices, institutional).	**Consistent.** The neighborhood design incorporates the concept for a basic planning unit by looping the primary collector roadway around the neighborhood, without providing through vehicle travel. This design enhances neighborhood unity and minimizes the vehicular activity. Each village within the proposed development is centered around a village park. 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	III-6	**Goal 2, Policy 3:** Residential development shall provide open space in either private yards or common areas to partially meet the residents' recreational needs.	**Consistent.** A variety of open space types will be included within the development. Several public parks and open space/recreational areas are proposed for the project, including 12 acres of village parks.
Land Use - Residential Land Use	III-6	**Goal 2, Policy 6:** Residential neighborhoods shall be protected from the excessive encroachment of incompatible activities and land uses (i.e., traffic, noise) and environmental hazards (i.e., flood, soil instability) which may have negative impacts on the living environment.	**Consistent.** The proposed residential uses will be protected from traffic and noise on I-5 by the intervening SPW. Onsite soils are assumed to be adequate for development and the project site is protected from regional flooding hazards.

GOALS AND POLICIES	PAGE NUMBER	GOAL AND POLICY NUMBER	CONSISTENCY STATEMENT
Land Use - Commercial Land Use	III-7	**Goal 1, Policy 3:** The compatible integration of commercial and new residential uses shall be encouraged. Existing residential areas shall be buffered from new commercial uses through the provisions of the zoning code.	**Consistent.** While the proximity of SPW's commercial business center provides employment and commercial opportunities, the residential component of SPW will buffer Westlake Villages from these commercial uses.
Land Use - Mixed Land Use	III-10	**Goal 4, Policy 1:** Project developments proposed in the Mixed Use designation shall be implemented by developing and processing a Master Development Plan for the project area, and rezoning the area to an M-X District.	**Consistent.** A General Plan Amendment and rezoning are being requested by the project applicant. A Master Development Plan has been prepared and submitted concurrently with those applications for consideration by the City to ensure internal and external land use compatibility (Appendix B).
Land Use - Mixed Land Use	III-10	**Goal 4, Policy 2:** Land uses proposed for a Mixed Use development in the Mixed Use designation shall support each other by providing an integrated master plan that may include one or more of the following: industries, services, offices, retail, and residential opportunities for the common needs of the occupants and users of the Mixed Use development.	**Consistent.** The Master Development Plan includes a variety of densities and uses that have been designed to complement each other. The mixture of uses are internally compatible and are meant to function as a complementary land use program.
Housing - Adequate Sites	III-13	**Goal 1, Policy 1:** The General Plan shall designate sufficient vacant land for residential purposes to accommodate anticipated population growth.	**Consistent.** Implementation of the proposed project will require a General Plan Amendment, annexation, and amendment to City's Sphere of Influence for the Master Development Plan Area. The project is proposed to fulfill the future demand for housing and the existing need for affordable Active Adult facilities. As such, the proposed project is consistent with the intent of this policy.
Housing - Adequate Sites	III-13	**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.** Residential uses will be proximate to the commercial uses on the adjacent Spanos Park West. The project site will also have convenient access to I-5 via Eight Mile Road. Consequently, residents in Westlake Villages will have convenient access to local commercial uses adjacent to the project, as well as regional commercial uses, employment centers, etc.
Housing - Adequate Sites	III-13	**Goal 1, Policy 3:** Sites designated for new residential development on the General Plan shall be adequately served by public utilities, minimally impacted by noise and blighting conditions, and be compatible with surrounding land uses.	**Consistent.** The proposed project residential uses within the Westlake Villages 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.

GOALS AND POLICIES	PAGE NUMBER	GOAL AND POLICY NUMBER	CONSISTENCY STATEMENT
Housing - Adequate Sites	III-13	**Goal 1, Policy 5:** Encourage the construction of new homes on vacant lots in the existing developed areas of the City where most public improvements have already been installed.	**Consistent.** The proposed project site is located directly adjacent to SPW. All infrastructure and utilities will be extended from the adjacent development In addition, previous improvements to levee structures and channels in the Bishop Tract area have resolved local flooding issues from 100-year flood plain constraints.
Housing - Affordability	III-13	**Goal 1, Policy 1:** Designate adequate high-density areas on the General Plan to provide for the development of apartments, planned unit residential developments, and other forms of high-density housing.	**Inconsistent.** The Westlake Villages project does not provide high density housing.
Housing - Governmental Constraints	III-14	**Goal 1, Policy 2:** Continue to plan for the timely and adequate expansion and/or improvement of public facilities and infrastructure to coincide with housing development and improvements.	**Consistent.** The proposed project intends to extend water and sewer infrastructure from the adjacent SPW development. The Master Development Plan describes the phasing of infrastructure to ensure that the development and infrastructure coincide in the appropriate time frame. The City's Master Sewer, Water, and Storm Water Drainage Plans are being amended to include the proposed project.
Housing - Preserving Housing and Neighborhoods	III-14	**Goal 1, Policy 4:** Provide and maintain community facilities in all community areas.	**Consistent.** The project will provide numerous "village" parks, public parks, recreational areas, and open space. The onsite lakes will be available for non-motorized boating recreation.
Housing - Adequate Sites	III-16	**Implementation Program 1:** Continue to monitor the supply of land in various zoning categories (R-1, R-2, R-3, and C-R) to prevent shortages from developing which may increase housing costs.	**Inconsistent**. While the project will provide extensive single family housing, multi-family dwellings are not proposed as part of the project.
Housing - Affordability	III-16	**Implementation Program 3:** Maintain at least 900 acres of undeveloped land designated for Low/Medium Density Residential uses on the General Plan to assure an adequate supply of such land.	**Consistent.** By developing 2,894 single family residential units, the applicant will be providing approximately 683 acres of residential uses thus assisting in providing an adequate supply of low/medium density residential land. The Spanos Parcel will be redesignated to Low-Medium Density Residential, allowing for the future development of residential uses.
Housing Affordability	III-16	**Implementation Program 4:** Maintain at least 300 acres of undeveloped land designated for High-Density Residential Uses on the General Plan to assure an adequate supply of such land.	**Inconsistent.** The project does not provide high density residential units.
Transportation - Streets and Highways	III-20	**Goal 1, Policy 2:** The street system shall provide at least two (2) independent access routes for all major developed areas.	**Consistent.** The project will provide 2 access routes via Eight Mile Road..

GOALS AND POLICIES	PAGE NUMBER	GOAL AND POLICY NUMBER	CONSISTENCY STATEMENT
Transportation - Streets and Highways	III-20	**Goal 1, Policy 3:** Significant trip generating land uses should be served by roadways adequate to provide vehicular access with a minimum of delay.	**Consistent.** The project roadways are designed to accommodate expected vehicular trips.
Transportation - Streets and Highways	III-21	**Goal 1, Policy 8:** Seek to improve freeway interchanges along both Route 99 and Interstate 5 to current design standards as required by the traffic demands of new development.	**Consistent**. Feasible mitigation is available to offset all project-related traffic impacts, however, feasible mitigation does not exist to offset all cumulative impacts.
Transportation - Streets and Highways	III-21	**Goal 1, Policy 9:** For traffic operating conditions use "Level-of-Service" (LOS) of "D" or better on a p.m. peak hour basis as the planning objective for the evaluation of new development, mitigation measures, impact fees, and public works capital improvement programs.	**Consistent**. Feasible mitigation is available to offset all project-related traffic impacts, however, feasible mitigation does not exist to offset all cumulative impacts.
Transportation - Streets and Highways	III-21	**Goal 2, Policy 1:** Inter-neighborhood traffic movement should occur on arterial and collector streets and is discouraged on neighborhood streets.	**Consistent.** One of the objectives included in the overall Westlake Villages planned community is to create a system of street hierarchy that discourages traffic through neighborhood streets.
Transportation - Streets and Highways	III-21	**Goal 2, Policy 2:** Neighborhood streets shall be designed to discourage through traffic and excessive speeds.	**Consistent.** One of the objectives included in the overall Westlake Villages planned community is to create a system of street hierarchy that discourages traffic through neighborhood streets.
Transportation - Streets and Highways	III-21	**Goal 2, Policy 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	III-22	**Goal 3, Policy 1:** Streets and highways shall be constructed to accommodate the expected traffic flow from existing and planned development, both local and regional.	**Consistent**. Feasible mitigation is available to offset all project-related traffic impacts, however, feasible mitigation does not exist to offset all cumulative impacts.
Transportation - Public Transportation	III-23	**Goal 1, Policy 2:** Large new developments along arterial and major collector streets shall provide transit-related public improvements (i.e., bus pullouts, bus shelters) to encourage bus use.	**Consistent.** The Master Development Plan include provisions for bus parking areas, turnouts, and shelters. The design and location of these facilities will be approved by the Community Development Director and Transit Authority.
Public Services and Facilities - Public Facilities	III-29	**Goal 1, Policy 2:** Capital improvements and facility needs generated by new development shall be financed by new development. The existing community should not be burdened by increased taxes and fees or by lowered service levels to accommodate the needs created by new development. Exceptions to this policy may be considered in an effort to encourage affordable housing.	**Consistent**. The project applicant will pay all required City fees as a condition of the Tentative Map and as outlined in the Annexation Memorandum of Understanding. A Homeowner's Association will also provide fees for maintenance of some parks, landscaping, etc.

GOALS AND POLICIES	PAGE NUMBER	GOAL AND POLICY NUMBER	CONSISTENCY STATEMENT
Public Services and Facilities - Public Facilities	III-29	**Goal 1, Policy 3:** The Urban Service Area shall not be expanded without taking into consideration the funding necessary to adequately provide services and facilities to the development anticipated in any area proposed for expansion.	**Consistent**. The project applicant will pay all required City fees as a condition of the Tentative Map. A Homeowner's Association will also provide fees for maintenance of some parks, landscaping, etc.
Public Services and Facilities - Public Facilities	III-30	**Goal 2, Policy 1:** Elementary schools should be located within residential neighborhoods with an ideal service radius of approximately ½ mile. Elementary schools should be located where students need not cross major arterial or collector streets.	**Consistent**. The project applicant is working with the Lodi Union School District to determine the appropriate location for the planned elementary school. The proposed site would serve SPW and Westlake Villages, meeting the ½ mile radius requirement.
Public Services and Facilities - Public Facilities	III-31	**Goal 2, Policy 7:** Residential developers should coordinate with the school district to insure the adequate provision of schools.	**Consistent**. The applicant has been working with the LUSD to provide an appropriate location for the elementary school. The LUSD has indicated that the elementary school planned as part of the proposed project will adequately serve the project. Existing middle and high schools will adequately serve the proposed project.
Public Services and Facilities - Public Facilities	III-31	**Goal 3, Policy 2:** Schools and other public facilities shall be encouraged to provide sufficient off-street parking on-site for both normal use and for special events.	**Consistent.** Off-street parking will be included in all non-residential uses. 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	III-32	**Goal 1, Policy 4:** The use of Best Management Practices for the reduction of pollutants in urban runoff shall be encouraged within the storm drainage system in order to reduce the amount of pollutants entering the surface waters.	**Consistent.** The applicant will be required to comply with all conditions set forth in the NPDES General Construction Permit and Waste Discharge Permit, and any City regulations regarding treatment of storm water runoff. Prior to the commencement of construction activities, the contractor will provide proof of a SWPPP.
Public Services and Facilities - Water Facilities	III-32	**Goal 1, Policy 7:** Encourage and support water conservation measures by all City water users.	**Consistent.** Landscaping irrigation will be designed with the most current water conservation policies and available equipment. The onsite lakes may provide a source of water for landscape irrigation.
Public Services and Facilities - Water Facilities	III-32	**Goal 1, Policy 8:** Non-potable water should be used to fill any lake or water features within development projects.	**Consistent.** The on-site lakes will be filled with storm water and/or ground water.

GOALS AND POLICIES	PAGE NUMBER	GOAL AND POLICY NUMBER	CONSISTENCY STATEMENT
Public Facilities and Services - Parks and Rec	III-33	**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 — 1.00 — 5 - 10 — ½ mile Community Park — 2.00 — 10 - 30 — 1 mile to city wide Regional Park — 7.00 — 30+ — region wide Golf Courses — 1 course/40,000 — 130 - 180 — region wide	**Inconsistent.** The project provides 12 acres of "village" parks, however, these parks will be between 0.5 - 1.0 acres in size. This does not meet the City's minimum size requirement for village parks. The project will also provide a 12.8 acre public park. The size of this park does not meet the City's standard of 2 acres per 1,000 individuals. Based on the City's requirements, the proposed project is 3.5 acres short of meeting this requirement. Additionally, some of the proposed parks will be private and inaccessible to the general public.
Public Facilities and Services - Parks and Rec	III-33	**Goal 1, Policy2:** The City shall ensure that community centers are provided at a level that meets the following standards. **Community Center Standards** City-owned community centers — 1 center / 50,000 population Combined City-owned, school district, and housing authority — 1 center / 30,000 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 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 onsite elementary school could serve as a community center as this facility will be open to the general public. The City's General Plan include provisions to include all schools as meeting the requirement for community centers.
Public Facilities and Services - Parks and Rec	III-33	**Goal 1, Policy 3:** The City shall require that new parks be located and designed in such a way as to facilitate their security and policing.	**Consistent.** The public park sites proposed in Westlake Villages 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.

GOALS AND POLICIES	PAGE NUMBER	GOAL AND POLICY NUMBER	CONSISTENCY STATEMENT
Public Facilities and Services - Parks and Rec	III-33	**Goal 1, Policy 4:** Whenever possible, the City shall develop neighborhood parks in conjunction with elementary schools that are centrally located within the neighborhood and where park patrons need not cross major arterial or collector streets.	**Consistent.** A majority of the villages within the proposed project are centered around "village parks." The community as a whole will be centered around the public park and recreation areas. While the elementary school will not be located adjacent to parklands, it will serve as a community center. Park patrons will not need to cross major arterials or collector streets to access the parks, recreation areas, or elementary school.
Public Facilities and Services - Parks and Rec	III-33	**Goal 1, Policy 5:** Community and City-wide parks shall be located with access to arterial or collector streets and shall have public streets around the balance of the park except where it is adjacent to another public facility.	**Consistent.** The proposed public park will be bounded on three sides by the two main collector streets in Westlake Villages. The fourth side will be directly adjacent to the western recreation area.
Public Facilities and Services - Parks and Rec	III-33	**Goal 1, Policy 6:** Continue to provide for the development of linear parkways and recreational bikeways where the opportunity exists (i.e., Calaveras River path, EBMUD right-of-way).	**Consistent.** The project applicant has provided bike lanes on major streets within the proposed development. Existing levees along Bishop Cut and Disappointment Slough will also be maintained as recreational bicycle facilities.
Public Facilities and Services - Parks and Rec	III-33	**Goal 1, Policy 7:** Continue to cooperate with the County and the various school districts to provide a wide variety of recreational opportunities for Stockton residents and visitors.	**Consistent.** The project applicant has integrated park and recreational facilities into the Westlake Villages Master Development Plan. These facilities will be available to residents and visitors to the community.
Public Facilities and Services - Parks and Rec	III-33	**Goal 1, Policy 8:** The City shall encourage the development of private open space and recreational facilities in larger residential developments in order to meet a portion of the open space and recreation needs generated by the residents of those developments.	**Consistent.** The project applicant has integrated 139 acres of parklands, recreational areas, and opens space into the Westlake Villages Master Development Plan. Six of the neighborhoods will be gated and private therefore the parks located in these villages will not be accessible to the public. This represents between 3 to 6 acres of parkland. However, since the project will provide 139 acres of parklands, recreational areas, and open space, this is not considered significant.
Public Facilities and Services - Fire Safety	III-36	**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 should review and approve the project plan.
Public Facilities and Services - Police Protection	III-36a	**Goal 1, Policy 1:** Seek to promote the inclusion of security features in all structures.	**Consistent.** The City of Stockton's Fire Department should review and approve the project plan. The applicant will implement all applicable city, State, and Uniform Building and Fire Codes relating to security features in structures.

GOALS AND POLICIES	PAGE NUMBER	GOAL AND POLICY NUMBER	CONSISTENCY STATEMENT
Public Facilities and Services - Police Protection	III-36a	**Goal 1, Policy 2:** Defensible space design techniques shall be considered in the review of new developments in order to enhance crime prevention.	**Consistent.** The Master Development Plan includes features to facilitate the concept of defensible space (e.g. lighting, gated-community, landscaping requirements). The applicant will consult with the City of Stockton's Police Department regarding any additional measures that are feasible for the proposed project.
Natural and Cultural - Conservation	III-37	**Goal 1, Policy 1:** Existing agricultural soils capable of producing a wide variety of valuable crops shall be retained in agricultural use until the time that such soils are needed for logical urban expansion.	**Inconsistent.** The project will convert 841 acres of productive agricultural lands and prime agricultural soils to urban uses.
Natural and Cultural - Conservation	III-37	**Goal 1, Policy 2:** Support firm policies and ordinance by San Joaquin County to protect productive agricultural land.	**Inconsistent.** The project will convert 841 acres of productive agricultural lands and prime agricultural soils to urban uses.
Natural and Cultural - Conservation	III-38	**Goal 3, Policy 1:** Consider the cumulative air quality impacts from development and use land use regulations to reduce air pollution.	**Inconsistent.** Generation of fugitive dust and pollutant emissions during construction may result in substantial short-term increases in air pollutants. This would be a contribution to short-term cumulative air quality impacts and is unavoidable.
Natural and Cultural - Conservation	III-38	**Goal 4, Policy 2:** Land use decisions shall consider the proximity of industrial and commercial uses to major residential areas in order to reduce commuting.	**Consistent.** Residential uses will be proximate to the commercial uses on the adjacent Spanos Park West. The project site will also have convenient access to I-5 via Eight Mile Road. Consequently, residents in future residential uses will have convenient access to local commercial uses adjacent to the project, as well as regional commercial uses, employment centers, etc., as a result of the I-5 facility.
Natural and Cultural - Conservation	III-39	**Goal 5, Policy 2:** Review proposed development for both local and regional air quality impacts.	**Consistent.** Section 4.3, Air Quality, assesses the local and regional air quality impacts of the proposed project.
Natural and Cultural - Conservation	III-39	**Goal 5, Policy 3:** Assist project applicants in understanding and meeting the air quality mitigation requirements established by the San Joaquin County Air Pollution Control District.	**Consistent.** Measures are proposed in Section 4.3, Air Quality, to mitigate impacts of the proposed project. The General Plan will be amended as part of the proposed project. If approved, the amendment will be included in the next revision of the regional AQAP.
Natural and Cultural - Open Space	III-39	**Goal 1, Policy 1:** The Delta and related waterways shall be used only for activities which are consistent with the sensitive environmental characteristics of this area. Any disturbance of levee vegetation should be minimized and replaced consistent with flood control and reclamation district constraints.	**Consistent**. The upgrade of the existing pump station may require the removal of riparian vegetation. Removal of this vegetation may be subject to numerous regulations including, Section 1602 of the Fish and Game Code, Streambed Alteration Agreement. The applicant will comply with all applicable laws, regulations and permits relating to the potential removal of riparian vegetation along Bishop Cut or Disappointment Slough.

GOALS AND POLICIES	PAGE NUMBER	GOAL AND POLICY NUMBER	CONSISTENCY STATEMENT
Natural and Cultural - Open Space	III-39	**Goal 1, Policy 2:** Urban development adjacent to the Delta and related waterways should give special consideration to the natural hazards in this area (i.e., flooding, soil subsidence, peat fires) and shall be required to provide access to and along this resource consistent with public safety and the preservation of sensitive biological areas.	**Consistent**. The project site is protected from a 100-year flood event. The applicant will ensure that the design of the proposed project meets all city, State, and federal regulations regarding minimization of flooding hazards. Measure recommended in Section 4.1, Geophysical Resources, should be implemented.
Natural and Cultural - Open Space	III-40	**Goal 1, Policy 6:** Continue to recognize and preserve Stockton's historical and cultural resources.	**Consistent.** Mitigation has been provided to avoid potential cultural resource impacts.
Natural and Cultural - Open Space	III-40	**Goal 2, Policy 1:** Residential developments shall be encouraged to provide private open space areas.	**Consistent.** The project applicant has integrated 139 acres of parklands, recreational areas, and opens space into the Westlake Villages Master Development Plan. Six of the neighborhoods will be gated and private therefore the parks located in these villages will not be accessible to the public. This represents between 3 to 6 acres of parkland. However, since the project will provide 139 acres of parklands, recreational areas, and open space, this is not considered significant.
Natural and Cultural - Open Space	III-40	**Goal 2, Policy 1:** Major arterials shall be provided with landscaped median strips in order to enhance these street systems as aesthetic open space corridors.	**Consistent.** The project applicant has designed the main collector street to include a landscaped center median. No major arterials run through the project site.
Natural and Cultural	III-41	**Implementation Programs 2:** Prepare and adopt a City right-to-farm ordinance to protect the viable farm area immediately adjacent to the City from complaints due to normal agricultural operations.	**Consistent.** The City has adopted a right to farm ordinance that protects adjacent farm lands from existing and planned residential land use conflicts.
Natural and Cultural	III-41	**Implementation Programs 3:** Encourage San Joaquin County to maintain large lot zoning (minimum parcel size - 40 acres) within the agricultural lands adjacent to Stockton's Urban Service Area.	**Consistent.** The lands adjacent to the proposed project site annexation are zoned with a minimum parcel size of 40 acres.
Noise	III-48	**Goal 2, Policy 2:** The compatibility of proposed projects with existing and future noise levels due to traffic on public roadways, railroad line operations, and aircraft in flight shall be evaluated by comparison to Figure 1 of the Stockton General Plan Policy Document (May 20, 1996).	**Consistent.** Section 4.5, Noise, assesses the noise impacts of the proposed project.

GOALS AND POLICIES	PAGE NUMBER	GOAL AND POLICY NUMBER	CONSISTENCY STATEMENT
Noise	III-49	**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.

Policy Consistency Conclusion

The above consistency analysis concludes that the proposed Westlake Villages project is consistent with a majority of the General Plan policies that have applicability to the project. Inconsistencies are discussed under Section 4.8, Housing/Population/Socieconomics, Section 4.9, Public Services, and Section 4.12, Cultural Resources. Inconsistencies with agricultural land uses are discussed at the beginning of this section (**Impact LU-2**).

This impact is significant and unavoidable. No feasible mitigation exists to offset this impact (Significance Criterion LU-d).

4.6.4 Level of Significance after Mitigation

Implementation of the proposed Westlake Villages 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 which conflicts with the City's goals for providing affordable, high density residential units. Additionally, the project will create impacts to parklands and air quality that are not consistent with the General Plan. The conversion to urban uses will represent an irretrievable loss of prime agricultural lands and soils. Potential land use conflicts between the ongoing agricultural uses on the Spans Parcel and the proposed residential uses cannot be completely mitigated. These impacts are significant and unavoidable.

4.7 TRAFFIC AND CIRCULATION

This section of the EIR describes the transportation and circulation conditions in the area surrounding the project site, and identifies transportation impacts associated with development of the proposed project. The analysis focuses on potential impacts to intersections, freeway segments, and internal site circulation, and evaluates the project's consistency with the City of Stockton General Plan Policy Document (adopted January 22, 1990). The following section on Traffic and Circulation was prepared by Fehr & Peers Associates. Technical analyses data related to this section are included in Appendix H. Selected revised data sheets are provided in Appendix A.

4.7.1 Existing Setting

Roadway System

The roadways in the study area are described below and 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 Eight Mile Road. Three mixed-flow lanes are provided in each direction of I-5 in the vicinity of the project site.

Eight Mile Road is a two-lane, east-west rural roadway that extends from west of I-5 to east of State Route (SR) 99. Future plans call for between six and eight lanes on Eight Mile Road to the east of the project site. As this roadway is being improved, sidewalks and bicycle facilities are being added.

Thornton Road (County Road 8) is primarily a two-lane, north-south major arterial that extends from the north of Eight Mile Road to Hammer Lane, where it continues south as Pacific Avenue. Speed limits range from 45 to 55 miles per hour (mph) along the roadway. Sidewalks are provided along improved sections of Thornton Road throughout the study area.

Davis Road is a two-lane, north-south rural road throughout the study area. This roadway extends from Thornton Road through Eight Mile Road within the study area. No bicycle or pedestrian facilities are provided. The speed limit on this roadway is 45 mph.

Lower Sacramento Road (County Road 10) is a two-lane, north-south rural road that extends from north of Eight Mile Road to Thornton Road. No bicycle or pedestrian facilities are provided on this roadway in the study area. The posted speed limit is 55 mph.

Trinity Parkway is a new six-lane, north-south roadway that connects McAuliffe Drive to Eight Mile Road on the west side of I-5. This roadway provides primary access to the commercial portion of the Spanos Park West project. Bicycle lanes and sidewalks are provided along the entire length of the roadway.

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

Figure 4.7.1: Study Intersection Locations

Traffic Conditions and Operations

Impacts on study intersection and freeway segments were determined by measuring the effect project traffic would have on traffic operations at key inter-sections during the AM (7:00 to 9:00 AM) and PM (4:00 to 6:00 PM) peak periods. The following intersections and freeway segments were selected for analysis, as shown on Figure 4.7.1.

Study Intersections

1. Eight Mile Road/Mokelumne Circle
2. Eight Mile Road/Trinity Parkway
3. Eight Mile Road/I-5 Southbound Ramps
4. Eight Mile Road/I-5 Northbound Ramps
5. Eight Mile Road/Oak Grove Regional Park Entrance
6. Eight Mile Road/Thornton Road
7. Eight Mile Road/Davis Road
8. Eight Mile Road/Lower Sacramento Road
9. Mokelumne Circle/Scott Creek Drive (west intersection)
10. Mokelumne Circle/Cosumnes Drive (east intersection)
11. Trinity Parkway/Cosumnes Drive
12. Trinity Parkway/McAuliffe Drive
13. Thornton Road/AG Spanos Boulevard (north intersection)
14. Thornton Road/Whistler Way
15. Thornton Road/AG Spanos Boulevard (south intersection)
16. Mariners Drive/Otto Drive
17. Hammer Lane/Mariners Drive
18. Hammer Lane/I-5 Northbound Ramps
19. Hammer Lane/I-5 Southbound Ramps

The proposed site access intersections with Eight Mile Road are also included in the analysis.

Freeway Segments

1. Northbound I-5, South of Eight Mile Road
2. Southbound I-5, South of Eight Mile Road
3. Northbound I-5, North of Eight Mile Road
4. Southbound I-5, North of Eight Mile Road

Analysis Scenarios

The following five scenarios were evaluated for this study:

Existing - Represents existing (2003) conditions from recent traffic counts.

Existing Plus Approved Projects - Near-term forecast 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.

Cumulative Without Project - Future (Year 2025) forecasted conditions taking into account future development in the City of Stockton and the surrounding jurisdictions, in addition to planned roadway improvements.

Cumulative With Project - Future (Year 2025) forecasted conditions plus project-related traffic.

Analysis Methodology

The analysis methodologies presented in the Transportation Research Board's Circular 212 (1980) and 2000 Highway Capacity Manual (HCM) were utilized for service level calculations for signalized and unsignalized intersections, respectively. HCM methodologies were also used to analyze conditions on I-5 in the study area.

Level of Service Criteria

To measure and describe the operational status of the local roadway network, transportation engineers and planners commonly use a grading system called level of service (LOS). Level of service is a description of an intersection's operation, ranging from LOS A (indicating free-flow traffic conditions with little or no delay) to LOS F (representing over-saturated conditions where traffic flows exceed design capacity, resulting in long queues and delays).

Signalized Intersections. At signalized intersections, the Circular 212 methodology was used to determine the LOS rating. This method is based on the volume-to-capacity (V/C) ratio which relates total traffic volume for critical opposing movements to the theoretical capacity for those movements. Table 4.7.A summarizes the relationship between the V/C ratio and LOS for signalized intersections.

Unsignalized Intersections. For unsignalized (all-way stop-controlled and side-street stop-controlled) intersections, the 2000 HCM methodology for unsignalized intersections was utilized. With this methodology, operations are defined by the average control delay per vehicle (measured in seconds) for each stop-controlled movement. This incorporates delay associated with deceleration, acceleration, stopping, and moving up in the queue. For side-street, stop-controlled intersections, the delay is typically represented for each stop-controlled movement. Table 4.7.B summarizes the relationship between delay and LOS for unsignalized intersections.

Freeway Mainline. For the freeway mainline segments, LOS was calculated using the 2000 HCM methodology. This methodology considers peak hour traffic volumes, free-flow speeds, percentage of heavy vehicles (i.e., trucks), and the number of travel lanes. These factors are used to determine the vehicle

density, measured in passenger cars per mile per lane, for a freeway segment. Table 4.7.C summarizes the relationship between vehicle density and LOS for mainline freeway segments.

Table 4.7.A: Signalized Intersection Level of Service Definitions Using V/C Ratio

LEVEL OF SERVICE	DESCRIPTION OF TRAFFIC CONDITIONS	V/C RATIO
A	Stable flow – Very slight or no delay. Conditions are such that no approach phase is fully utilized by traffic and no vehicle waits longer than one red indication.	0.00 – 0.60
B	Stable flow – Slight delay. An occasional approach phase is fully utilized.	0.61 – 0.70
C	Stable flow – Acceptable delay. A few drivers arriving at the end of a queue may have to wait through one signal cycle.	0.71 – 0.80
D	Approaching unstable flow – Tolerable delay. Delay may be substantial during short periods, but excessive back ups do not occur.	0.81 – 0.90
E	Unstable flow – Intolerable delay. Delay may be great – up to several signal cycles. Long queues form upstream of intersection.	0.91 – 1.00
F	Forced flow – Excessive delay. Volumes vary widely, depending on downstream queue conditions.	> 1.00

Source: Circular 212, Transportation Research Board, 1980.

Table 4.7.B: Unsignalized Intersection Level of Service Definitions Using Average Vehicular Control Delay

LEVEL OF SERVICE	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.

Table 4.7.C: Freeway Mainline Level of Service Definitions Using Density Ranges

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

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

Existing Traffic Counts. Intersection turning movement counts were conducted in April 2003 at the study intersections during the AM (7:00 to 9:00 AM) and PM (4:00 to 6:00 PM) peak periods. Traffic counts were conducted on a clear weekday with area schools in normal session. For each count period, the single hour with the highest traffic volumes was identified and is represented on Figure 4.7.2. The peak hour data is used as the basis for analysis. The existing lane configuration at each study intersection is shown on Figure 4.7.3.

Existing (2002) traffic counts on I-5, both north and south of the Eight Mile Road interchange, were taken from Caltrans' Traffic Volumes on the California Highway System website. Current daily traffic volumes on I-5 are 70,000 vehicles south of Eight Mile Road and 56,000 vehicles north of Eight Mile Road.

Existing Intersection Operations. Existing intersection conditions were evaluated for the weekday AM and PM peak hours at the 19 study intersections, as summarized in Table 4.7.D. As shown, the all-way stop-controlled Eight Mile Road/Davis Road intersection operates unacceptably during both the AM and PM peak hours. Although the Eight Mile Road/I-5 Southbound Ramps, Eight Mile Road/I-5 Northbound Ramps, and Eight Mile Road/Oak Grove Regional Park Entrance intersections operate at an overall acceptable service level, individual side-street movements operate at LOS E or LOS F during one or both peak hours.

Figure 4.7.2: Existing Peak Hour Traffic Volumes

Figure 4.7.3: Existing Lane Configuration and Traffic Control

Table 4.7.D: Existing (2003) Peak Hour Intersection Levels of Service

	INTERSECTION	CONTROL [1]	PEAK HOUR	V/C RATIO [2] OR DELAY [3]	LOS
1.	Eight Mile Road/Mokelumne Circle	SSSC	AM PM	7 Sec. (WB 10 Sec.) 6 Sec. (EB 11 Sec.)	A (B) A (B)
2.	Eight Mile Road/Trinity Parkway	Signalized	AM PM	0.20 0.15	A A
3.	Eight Mile Road/I-5 Southbound Ramps	SSSC	AM PM	32 Sec. (SB > 50 Sec.) 33 Sec. (SB > 50 Sec.)	D (F) D (F)
4.	Eight Mile Road/I-5 Northbound Ramps	SSSC	AM PM	13 Sec. (NB 43 Sec.) 9 Sec. (NB 26 Sec.)	B (E) A (D)
5.	Eight Mile Road/Oak Grove Regional Park Entrance	SSSC	AM PM	3 Sec. (NB 36 Sec.) 2 Sec. (NB 20 Sec.)	A (E) A (C)
6.	Eight Mile Road/Thornton Road	Signal	AM PM	0.79 0.66	C B
7.	Eight Mile Road/Davis Road	AWS	AM PM	**> 50 Sec.** **> 50 Sec.**	**F** **F**
8.	Eight Mile Road/Lower Sacramento Road	Signal	AM PM	0.77 0.65	C B
9	Mokelumne Circle/Scott Creek Drive (west intersection)	SSSC	AM PM	1 Sec. (EB 12 Sec.) 1 Sec. (EB 10 Sec.)	A (B) A (B)
10.	Mokelumne Circle/Cosumnes Drive (east intersection)	SSSC	AM PM	5 Sec. (EB 9 Sec.) 7 Sec. (EB 9 Sec.)	A (A) A (A)
11.	Trinity Parkway/Cosumnes Drive	SSSC	AM PM	2 Sec. (WB 9 Sec.) 2 Sec. (WB 9 Sec.)	A (A) A (A)
12.	Trinity Parkway/McAuliffe Drive	SSSC	AM PM	2 Sec. (SB 7 Sec.) 5 Sec. (WB 8 Sec.)	A (A) A (A)
13.	Thornton Road/AG Spanos Boulevard (north intersection)	Signal	AM PM	0.48 0.24	A A
14.	Thornton Road/Whistler Way	Signal	AM PM	0.33 0.21	A A
15.	Thornton Road/AG Spanos Boulevard (south intersection)	Signal	AM PM	0.36 0.34	A A
16.	Mariners Drive/Otto Drive	No Control	AM PM	N/A N/A	N/A N/A
17.	Hammer Lane/Mariners Drive	Signal	AM PM	0.58 0.65	A B
18.	Hammer Lane/I-5 Northbound Ramps	Signal	AM PM	0.86 0.52	D A
19.	Hammer Lane/I-5 Southbound Ramps	Signal	AM PM	0.55 0.73	A C

Source: Fehr & Peers, 2003.
Notes: N/A = Not Applicable. There are currently no conflicting movements at the Mariners Drive/Otto Drive intersection.
[1] Signal = Signalized intersection
SSSC = Side-street stop-controlled intersection
AWS = All-way stop-controlled intersection
[2] Signalized intersection level of service is based on V/C ratio according to the Circular 212 methodology, Transportation Research Board, 1980.
[3] 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. Both the average intersection control delay and worse case stop-controlled movement delay are presented.
Values in bold represent unacceptable level of service

Traffic Signal Warrant Analysis. In addition to intersection operations, this study examines peak hour traffic signal warrants at the unsignalized study intersections to determine if signalization would be warranted. The

need for signalization is determined through the peak hour signal warrant analyses procedures presented in Caltrans' Traffic Manual. Table 4.7.E indicates the degree to which the unsignalized study intersections meet the peak hour signal warrant.

Peak hour signal warrants are currently satisfied at two intersections: Eight Mile Road/I-5 Northbound Ramps and Eight Mile Road/Davis Road. Operation of the Eight Mile Road/I-5 Northbound Ramps intersection would be improved with implementation of improvements to the Eight Mile Road/I-5 interchange planned in conjunction with the Spanos Park West development.

Freeway Analysis. The freeway mainline segments north and south of Eight Mile Road were analyzed based on the peak hour volumes shown in Table 4.7.F. The analysis results indicate that all mainline segments are currently operating at LOS C or better during both peak hours.

Bicycle, Pedestrian, and Transit Access. Within the study area, pedestrian facilities are provided along improved portions of roadways including: Thornton Road, Trinity Parkway, Scott Creek Drive, Cosumnes Drive, Mokelumne Circle, McAuliffe Drive, Whistler Way, and A.G. Spanos Boulevard. Bicycle facilities are also provided on Thornton Road and are planned for most of the major roadways in the future. Figure 4.7.4 illustrates existing and future bicycle facilities within the study area.

Regulatory Setting

The City's General Plan was utilized to provide evaluation criteria for determining project impacts. Goals outlined within the Transportation section of the General Plan were used for reference in this study. These goals are summarized below.

Streets and Highways Goal 1.2 - The street system shall provide at least two (2) independent access routes for all major developed areas.

Streets and Highways Goal 1.3 - Significant trip generating land uses should be served by roadways adequate to provide vehicular access with a minimum of delay.

Streets and Highways Goal 1.6 - Traffic signals on arterial streets shall be synchronized to the extent possible to facilitate the flow of traffic and to minimize stops or delays.

Streets and Highways Goal 1.8 - Seek to improve freeway interchanges along both Route 99 and Interstate 5 to current design standards as required by the traffic demands of new development.

Streets and Highways Goal 1.9 - For traffic operating conditions use "Level-of-Service" (LOS) of "D" or better on a PM peak hour basis as the planning objective for the evaluation of new development, mitigation measures, impact fees and public works capital improvement programs.

Streets and Highways Goal 2.3 - Off-street parking shall be required for all land uses in order to reduce congestion, improve overall operation and land use compatibility.

Streets and Highways Goal 4.2 - Specific Plans for future roadways on the fringe of the City shall be prepared in coordination with the County and/or Caltrans.

Table 4.7.E: Existing Conditions (2003) Peak Hour Signal Warrants [1]

INTERSECTION	PEAK HOUR	STATUS
Eight Mile Road/Mokelumne Circle	AM	Not Met
	PM	Not Met
Eight Mile Road/I-5 Southbound Ramps	AM	Not Met
	PM	Not Met
Eight Mile Road/I-5 Northbound Ramps	AM	Met
	PM	Met
Eight Mile Road/Oak Grove Regional Park Entrance	AM	Not Met
	PM	Not Met
Eight Mile Road/Davis Road	AM	Met
	PM	Met
Mokelumne Circle/Scott Creek Drive (west intersection)	AM	Not Met
	PM	Not Met
Mokelumne Circle/Cosumnes Drive (east intersection)	AM	Not Met
	PM	Not Met
Trinity Parkway/Cosumnes Drive	AM	Not Met
	PM	Not Met
Trinity Parkway/McAuliffe Drive	AM	Not Met
	PM	Not Met

Source: Fehr & Peers, 2003.
Notes: [1] Based on methodologies presented in Caltrans Traffic Manual.

Table 4.7.F: Mainline I-5 Analysis Existing Conditions

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	1,610	8.7	A	2,770	14.9	B
North of Eight Mile Road	Southbound	2,760	14.9	B	1,940	10.5	A
South of Eight Mile Road	Northbound	2,010	10.8	A	3,460	18.6	C
South of Eight Mile Road	Southbound	3,450	18.6	C	2,420	13.0	B

Source: Fehr & Peers, 2003.
Notes: [1] Traffic volumes taken from Caltrans web page, 2002.
[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.

Figure 4.7.4: Existing and Future Bicycle Network

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.

X A through roadway should connect adjacent developments so as to permit transit circulation between developments.

X In major employment/commercial areas, parking should be prohibited on collector and arterial streets to provide access to bus stops in these areas.

X Shielded openings in subdivisions sound walls should be provided to facilitate more direct pedestrian access to transit stops.

X In major employment/commercial areas, the Transit District should be encouraged to post route and schedule information.

X Commercial and industrial developments should have easy access to major arterials and transit stops.

X Park and ride sites should be strategically located to maximize utilization.

X Park and ride lots should be designed to accommodate not only motorists but also other users of public transit and van or carpooling.

Non-Motorized Transportation Goal 1.1 - Pedestrian travel shall be encouraged as a viable mode of movement throughout the City by providing safe and convenient pedestrian facilities, particularly in commercial areas and residential neighborhoods.

Non-Motorized Transportation Goal 1.2 - Within large retail and office centers, provisions shall be made for convenient and safe pedestrian movement through the large parking areas which surround these commercial centers.

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

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

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

4.7.2 Significance Criteria

Based on the CEQA Guidelines, a traffic increase from a project is considered to be a significant impact if the associated change to the transportation system either:

X Conflicts with adopted environmental plans and goals of the community where it is located; or

X Causes an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system.

Conditions without and with the project have been compared to identify significant impacts according to the following criteria:

X If a signalized intersection is projected to operate acceptably (i.e., LOS D or better with a V/C ratio equal to or less than 0.90) without the project and the project is expected to cause the facility to operate at an unacceptable LOS (LOS E or worse with a V/C ratio greater than 0.90), the impact is considered significant.

X If an unsignalized intersection is projected to operate acceptably (i.e., LOS D or better with an average control delay equal to or less than 35.0 seconds per vehicle for the entire intersection) without the project and the project is expected to cause the facility to operate at an unacceptable LOS (LOS E or worse with an average control delay greater than 35.0 seconds per vehicle), the impact is considered significant.

X If a facility is projected to operate unacceptably (i.e., LOS E or worse) without the project, and the project is expected to increase total volume through the intersection by more than 5 percent, the impact is considered significant.

X If a facility is projected to operate at an unacceptable LOS E without the proposed project and the proposed project is expected to cause the facility to operate at an unacceptable LOS F, but the total traffic volumes through the intersection do not increase by more than 5 percent, City staff would determine whether the project has a significant impact.

Failure to comply with the Transportation Policy of the City's General Plan would result in a significant impact.

Existing plus Approved Projects Traffic Conditions

This section discusses the Existing Plus Approved Projects traffic condition.

Planned Roadway Improvements

There are several planned roadway improvements in the study area that are anticipated to be completed prior to occupancy of Westlake Villages. The following improvements were assumed for the analysis of Existing Plus Approved Project conditions:

1. Constructing the Askland Drive extension over Bear Creek which would connect Trinity Parkway to Otto Drive and Mariners Drive.
2. Widening of Eight Mile Road to eight lanes at the I-5 interchange.
3. Improving the Eight Mile Road/I-5 interchange to provide additional ramp capacity and signalization of the ramp intersections.
4. Signalizing the following intersections:

X Eight Mile Road/Mokelumne Circle

X Trinity Parkway/Cosumnes Drive

X Trinity Parkway/McAuliffe Drive

5. Completion of the Eight Mile Road/I-5 interchange improvements is expected by late 2004. The assumed lane configurations are shown on Figure 4.7.5.

Existing plus Approved Project Traffic Forecasts

This scenario includes existing traffic counts and traffic from those developments that are approved and/or under construction within the study area. Therefore, these conditions represent the likely traffic levels with the opening of the project in the next several years.
Based on information provided by City of Stockton staff, three developments would add traffic in the immediate study area. The location of these developments is shown on Figure 4.7.6, with a description of each project listed in Table 4.7.G.

The Spanos Park West project would also include the following commercial land uses:

X 43,560 square-foot mini-storage (4-acre site developed with a floor-to-area ratio [FAR] of 0.25)

X 60,000 square-foot auto dealership

X 207,990 square-foot Wal-Mart

X 795,825 square feet of retail (749,761 square-foot Park West Pavilions and 4.23-acres remainder site developed with a FAR of 0.25)

X 215,800 square-foot office parcel

X 24.29 acres of remaining parcel developed with 150,000 square feet of office space

X 1,150 student middle school (consistent with future enrollment estimates at middle schools in both the adjacent Stockton and Lodi school districts)

Approved project vehicle trip generation was estimated using appropriate trip generation rates for the proposed land uses from ITE's Trip Generation (6th Edition), as shown in Table 4.7.H. Vehicle trip generation was derived by applying the appropriate ITE trip generation rates to the proposed project components. Trip generation for the approved development is shown in Table 4.7.I.

Trip generation for the middle school portion of Spanos Park West was adjusted to account for students that would reside in Spanos Park West. Based on discussions with staff from the Lodi Unified School District, an estimated 0.081 middle school students (grades 7-8) would be generated per single-family home, and 0.162 middle school students would be generated per apartment unit, resulting in approximately 152 middle school students residing in Spanos Park West. The number of students expected to come from within Spanos Park West 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 Spanos Park West.

Trips generated by the approved projects in the study area were added to the existing intersection volumes, as shown on Figure 4.7.7, to form the basis of the Existing Plus Approved Projects analysis.

Figure 4.7.5: Existing Plus Approved Projects Lane Configurations and Traffic Control

Figure 4.7.6: Approved Development Locations

Table 4.7.G: Approved Residential Project Listing

MAP NUMBER	PROJECT NAME	TOTAL PLANNED UNITS	BUILDING PERMITS ISSUED	REMAINING BUILDING PERMITS
1.	North Stockton Projects[1]	688	341	347
2.	Spanos Park East	1,794	1,544	250
3.	Spanos Park West[2]	1,640	858	782

Source: City of Stockton Residential Development, 2003.
Notes: [1]Elkhorn County Club, Waterford Estates West and East, Beck Ranch, Beck Estates, Fairway Greens.
[2]Current residential plan for Spanos Park West obtained from A.G. Spanos Companies (2003). Building permits have been issued for 411 single-family homes and a 308-unit apartment complex. The apartment complex was not occupied at the time traffic counts were collected.

Table 4.7.H: Trip Generation Rates for Approved Projects

PROPOSED LAND USE	ITE CODE	DAILY[1]	AM PEAK HOUR[1]	PM PEAK HOUR[1]
Single-Family	210	Ln(T) = 0.920 Ln(D) + 2.707	T= 0.7(X) + 9.477	Ln(T) = 0.901 Ln(X) + 0.527
Apartment	220	T = 5.994(D) + 134.114	T=0.497(X)+3.238	T = 0.541(X) + 18.743
Office	710	Ln(T) = 0.768 Ln(X) + 3.654	Ln(T) = 0.797 Ln(X) + 1.558	T = 1.121(X) + 79.295
Retail	820	Ln(T) = 0.643 Ln(X) + 5.866	Ln(T) = 0.596 Ln(X) + 2.329	Ln(T) = 0.66 Ln(X) + 3.403
Mini-Storage	151	T = 2.50(X)	T = 0.15(X)	T = 0.26(X)
Auto Dealership	841	T = 37.50(X)	T = 2.21(X)	T = 2.80(X)
Discount Superstore	813	T = 46.96(X)	T = 1.84(X)	T = 3.82(X)
Middle School	522	T = 1.45(S)	T = 0.46(S)	T = 0.16(S)

Source: Trip Generation (6th Edition), Institute of Transportation Engineers
Notes: [1]T= Number of trips, LN= Natural Logarithm, D= Dwelling units, S = Students, X=1,000 square feet of development

Table 4.7.I: Trip Generation Approved Projects

PROPOSED PROJECT	SIZE		DAILY	AM PEAK HOUR			PM PEAK HOUR		
				INBOUND	OUTBOUND	TOTAL	INBOUND	OUTBOUND	TOTAL
North Stockton Projects	347	Dwelling units	3,260	63	189	252	211	118	325
Spanos Park East	250	Dwelling units	2,410	46	138	184	157	88	245
Spanos Park West									
Mini-Storage	43,560	sf	110	4	3	7	6	5	11
Auto Dealership	60,000	sf	2,250	97	36	133	67	101	168
Wal-Mart	207,990	sf	9,760	195	188	383	390	405	795
Shopping Center	795,826	sf	25,870	335	215	550	1,185	1,284	2,469
General Office	150,000	sf	1,810	227	31	258	42	205	247
General Office	215,800	sf	2,400	303	41	344	55	266	321
Spanos Park West Commercial Subtotal			42,200	1,161	514	1,675	1,745	2,266	4,011
Apartments	308	Dwelling units	1,980	25	131	156	124	61	185
Single Family Homes	1,260	Dwelling units	10,670	223	668	891	674	379	1,053
Spanos Park West Residential Subtotal			12,650	248	800	1,048	798	440	1,238
Less Internal Trips									
From Commercial (5%)			2,110	58	26	84	87	113	201
To Residential			2,110	26	58	84	113	87	201
Middle School [1]	998	Students	1,450	262	197	459	75	85	160
Spanos Park West Net New Trips			52,080	1,590	1,430	3,010	2,420	2,590	5,010

Source: Fehr & Peers, 2003
Notes: [1] The estimated middle school enrollment of 1,150 was reduced by 152 (0.081 students per single-family home and 0.162 students per apartment unit) to account for students residing in the residential portion of the project.

Cumulative Traffic Conditions

This section describes build-out conditions within the vicinity of project site. The analysis of future traffic conditions considers future development within the City and land use development within the surrounding jurisdictions.

Planned Roadway Improvements

The future lane configurations at the study intersections are shown on Figure 4.7.8. Major roadway improvements in the study area include:

X Construction of a new I-5 interchange at Otto Drive. (Construction of a freeway under-crossing at Otto Drive was not assumed. Therefore, from the west side of the freeway, only access to the southbound ramps is provided; from the east side of the freeway, only northbound I-5 access is provided.)

X Widening of Eight Mile Road to eight lanes from Trinity Parkway through West Lane.

Figure 4.7.7: Existing Plus Approved Projects Peak Hour Traffic Volumes

Figure 4.7.8: Cumulative Lane Configurations and Traffic Control

Cumulative Traffic Forecasts

City staff requested adjustments to the model to reflect land uses in the study area that were not accounted for in the model.

X Detail was added to account for the Spanos Park West project, located east of the project site.

X Development on the Spanos Property, west of Westlake Villages, was assumed to occur with single-family homes at similar densities to the proposed project.

X No development was assumed to occur on the Shima Tract, located south of the project site.

X Future (Year 2025) Without Project peak hour traffic volumes at each study intersections are shown on Figure 4.7.9.

Analysis of Existing plus Approved Projects and Cumulative Conditions Without the Project

As shown in Table 4.7.J, fourteen of the nineteen study intersections, would operate at acceptable LOS ranges (i.e., LOS D or better) in the Existing Plus Approved Projects scenario. The five intersections that would operate at unacceptable levels include:

1. Eight Mile Road/Trinity Parkway - PM peak hour
2. Eight Mile Road/Thornton Road - AM and PM peak hours
3. Eight Mile Road/Davis Road - AM and PM peak hours
4. Eight Mile Road/Lower Sacramento Road - AM and PM peak hours
5. Hammer Lane/I-5 Northbound Ramps - AM peak hour

In the Cumulative Without Project condition, all study intersections are expected to operate at acceptable service levels, except for the Hammer Lane/I-5 Northbound Ramps intersection, which is projected to operate at LOS F during the AM peak hour.

Traffic Signal Warrants

Peak hour traffic signal warrants were reviewed for the Existing Plus Approved Projects and Cumulative Without Project scenarios, as presented in Table 4.7.K. This review indicated that, for the Existing Plus Approved Projects scenario, traffic signal warrants would be satisfied at the Eight Mile Road/Davis Road intersection. In the Cumulative Without Project scenario, peak hour signal warrants would not be satisfied at the two unsignalized intersections.

Figure 4.7.9: Cumulative Without Project Peak Hour Traffic Volumes

Table 4.7.J: Without Project Peak Hour Intersection Level of Service

	Intersection	Peak Hour	Existing		Existing Plus Approved Projects		Cumulative Without Project	
			V/C Ratio[1] or Delay[2]	LOS	V/C Ratio[1] or Delay[2]	LOS	V/C Ratio[1] or Delay[2]	LOS
1.	Eight Mile Road/Mokelumne Circle	AM PM	7 Sec. (WB 10) 6 Sec. (EB 11)	A (B) A (B)	0.41 0.36	A A	0.51 0.43	A A
2.	Eight Mile Road/Trinity Parkway	AM PM	0.20 0.15	A A	0.64 **0.92**	B **E**	0.52 0.63	A B
3.	Eight Mile Road/I-5 Southbound Ramps	AM PM	32 Sec. (SB > 50) 33 Sec. (SB > 50)	D (F) D (F)	0.63 0.80	B C	0.87 0.68	D B
4.	Eight Mile Road/I-5 Northbound Ramps	AM PM	13 Sec. (NB 43) 9 Sec. (NB 26)	B (E) A (D)	0.46 0.52	A A	0.51 0.70	A C
5.	Eight Mile Road/Oak Grove Regional Park Entrance	AM PM	3 Sec. (NB 36) 2 Sec. (NB 20)	A (E) A (C)	3 Sec.(NB>50) 3 Sec.(NB>50)	A (F) A (F)	0.45 0.29	A A
6.	Eight Mile Road/Thornton Road	AM PM	0.79 0.66	C B	**1.17** **1.07**	**F** **F**	0.71 0.53	C A
7.	Eight Mile Road/Davis Road	AM PM	**> 50 Sec.** **> 50 Sec.**	**F** **F**	**> 50 Sec.** **> 50 Sec.**	**F** **F**	0.45 0.50	A A
8.	Eight Mile Road/Lower Sacramento Road	AM PM	0.77 0.65	C B	**0.94** **0.93**	**E** **E**	0.74 0.65	C B
9	Mokelumne Circle/Scott Creek Drive (west intersection)	AM PM	1 Sec. (EB 12) 1 Sec. (EB 10)	A (B) A (B)	5 Sec. (EB>50) 2 Sec. (EB 24)	A (F) A (C)	5 Sec. (EB 47) 4 Sec.(EB 33)	A (E) A (D)
10.	Mokelumne Circle/Cosumnes Drive (east intersection)	AM PM	5 Sec. (EB 9) 7 Sec. (EB 9)	A (A) A (A)	7 Sec. (EB 15) 8 Sec. (EB 11)	A (C) A (B)	7 Sec. (EB 16) 9 Sec. (WB 15)	A (B) A (C)
11.	Trinity Parkway/Cosumnes Drive	AM PM	2 Sec. (WB 9) 2 Sec. (WB 9)	A (A) A (A)	0.43 0.59	A A	0.43 0.73	A C
12.	Trinity Parkway/McAuliffe Drive	AM PM	2 Sec. (SB 7) 5 Sec. (WB 8)	A (A) A (A)	0.37 0.57	A A	0.43 0.64	A B
13.	Thornton Road/AG Spanos Boulevard (north intersection)	AM PM	0.48 0.24	A A	0.59 0.31	A A	0.40 0.35	A A
14.	Thornton Road/Whistler Way	AM PM	0.33 0.21	A A	0.41 0.28	A A	0.46 0.39	A A
15.	Thornton Road/AG Spanos Boulevard (south intersection)	AM PM	0.36 0.34	A A	0.56 0.65	A B	0.53 0.52	A A
16.	Mariners Drive/Otto Drive	AM PM	N/A N/A	N/A N/A	9 Sec. (EB 12) 15 SEC. (EB23)	A (B) B (C)	4 Sec. (SB 23) 4 Sec. (NB 23)	IA I(C)
17.	Hammer Lane/Mariners Drive	AM PM	0.58 0.65	A B	0.50 0.82	A D	0.67 0.66	B B
18.	Hammer Lane/I-5 Northbound Ramps	AM PM	0.86 0.52	D A	**1.01** 0.73	**F** C	**1.11** 0.57	**F** A
19.	Hammer Lane/I-5 Southbound Ramps	AM PM	0.55 0.73	A C	0.59 0.80	A D	0.64 0.68	B B

Source: Fehr & Peers, 2003.
Notes: [1]Signalized intersection level of service is based on V/C ratio according to the Circular 212 methodology, Transportation Research Board, 1980 [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. Both the average intersection control delay and worse-case stop-controlled movement delay are presented. Values in bold represent unacceptable level of service

Table 4.7.K: Without Project Peak Hour Signal Warrants [1]

INTERSECTION	PEAK HOUR	EXISTING PLUS APPROVED PROJECTS	CUMULATIVE WITHOUT PROJECT
Eight Mile Road/Oak Grove Regional Park Entrance	AM PM	Not Met Not Met	N/A
Eight Mile Road/Davis Road	AM PM	Met Met	N/A
Mokelumne Circle/Scott Creek Drive (west intersection)	AM PM	Not Met Not Met	Not Met Not Met
Mokelumne Circle/Cosumnes Drive(east intersection)	AM PM	Not Met Not Met	Not Met Not Met
Otto Drive/Mariners Drive	AM PM	Not Met Not Met	Not Met Not Met

Source: Fehr & Peers, 2003.
Notes: [1] Based on methodologies presented in Caltrans' Traffic Manual
N/A = Not Applicable – Intersection Signalized in Cumulative Condition

Freeway Analysis

Traffic from the approved projects was added to the existing peak hour traffic on I-5 to determine near-term traffic volumes on I-5. Under Cumulative Without Project conditions, I-5 forecasts were developed using the Stockton Traffic Model. Each mainline segment of I-5 north and south of Eight Mile Road was analyzed based on the volumes shown in Table 4.7.L. The analysis results indicated that, for the Existing Plus Approved Projects scenario, all mainline segments would operate at LOS D or better during both peak hours. In the Cumulative Without Project condition, the southbound segment of I-5 south of Eight Mile Road would operate at a deficient LOS E during the AM peak hour and the northbound segment of I-5 south of Eight Mile Road would operate at a deficient LOS E during the PM peak hour.

Project Trip Generation and Distribution Assumptions

This section provides an overview of the proposed project components, and addresses the project trip generation, distribution, and assignment characteristics. This allows for an evaluation of project impacts on the surrounding roadway network.

Table 4.7.L: Mainline I-5 Analysis Without Project Conditions

SEGMENT	PEAK HOUR	EXISTING			EXISTING PLUS APPROVED PROJECTS			CUMULATIVE WITHOUT PROJECT		
		VOLUME	DENSITY[1]	LOS[2]	VOLUME	DENSITY[1]	LOS[2]	VOLUME	DENSITY[1]	LOS[2]
North of Eight Mile Road Northbound	AM	1,610	8.7	A	1,784	9.6	A	1,991	10.7	A
	PM	2,770	14.9	B	3,065	16.5	B	3,409	18.4	C
North of Eight Mile Road Southbound	AM	2,7601,9	14.9	B	2,9252,2	15.8	B	3,314	17.9	B
	PM	40	10.5	A	35	12.0	B	2,324	12.5	B
South of Eight Mile Road Northbound	AM	2,010	10.8	A	2,551	13.7	B	3,189	17.2	B
	PM	3,460	18.6	C	4,447	24.3	C	6,104	40.4	E
South of Eight Mile Road Southbound	AM	3,450	18.6	C	4,074	22.1	C	5,702	35.0	E
	PM	2,420	13.0	B	3,364	18.1	C	3,725	20.1	C

Source: Fehr & Peers, 2003.
Notes: [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.

No specific development program is currently proposed for the 16.7-acre Marina site, although development is anticipated to occur with a maximum FAR ratio of 0.25, with 50 percent of the square footage devoted to office use and 50 percent to retail. A 14-acre elementary school site is also proposed within the development. For purposes of trip generation, an enrollment of 700 students was assumed, which is based on projected future average elementary school enrollment as developed by both the Stockton and Lodi Unified School Districts. Construction of several village parks and recreation areas is also proposed as part of this project. Trip generation for the recreational portions of the project was assumed to remain internal to the site, as the majority of users would originate within the site.

Project Trip Generation. Standard ITE trip generation rates, as presented in Trip Generation (6th Edition), were utilized to estimate project trips for all uses, except the Active Adult component of the project. Trip generation rates for this component were based on trip generation surveys conducted by Fehr & Peers at a similar development in Brentwood, California. The community surveyed is restricted to active adults (age 55+) and provides minimal on-site amenities. Based on data collected over a week-long period, daily trip generation for Active Adult communities was documented at about 45 percent of single-family home daily trip generation. Peak hour trip generation was approximately 44 percent of single-family home peak hour trip generation.

Trip generation for the elementary school portion of the project was reduced to account for students residing in Westlake Villages. Based on discussions with staff from the Lodi Unified School district, an estimated 0.302 elementary school students would be generated per single-family home within the development, resulting in approximately 650 elementary school students residing in Westlake Villages with maximum conventional housing densities (the remaining 50 students would reside in other neighborhoods in the school district). The number of students expected to come from within Westlake Villages 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 an already planned trip (e.g., commute trip 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 Westlake Villages.

Internal trips were assumed between the residential and commercial portions of the project, as the commercial portion would be neighborhood-serving. Internal trips are trips that originate in one portion of the project that are destined for another portion of the project. Internal trips were assumed between the following land uses:

Westlake Villages Residential and Marina Site Commercial and Office - Based on internal capture rates presented in ITE's publication Trip Generation Handbook (2001), an internal capture rate of 25 percent was applied to the commercial and office trip generation (i.e., 25 percent of the Marina Sites commercial and office trips would originate from Westlake Villages).

Westlake Villages Residential and Proposed Elementary School Site - Based on elementary school student generation per single family household (0.302 elementary school students generated per single-family household), 93 percent of elementary school traffic would originate in Westlake Villages.

Westlake Residential and Spanos Park West Commercial Site - Based on information contained in Spanos Park West Traffic Impact Analysis (Rajappan & Meyer., 2001) as well as internal capture rates presented in ITE's publication Trip Generation Handbook (2001), an internal capture rate of 10 percent was applied to Westlake Village's residential generation (i.e., 10 percent of the Westlake Villages trips would be destined for the Spanos Park West commercial and office development).

For purposes of the traffic analysis, development of the project at maximum density was assumed. At this density, the proposed project is expected to generate approximately 29,880 daily trips, including 2,294 AM and 3,081 PM peak hour trips. The 25 percent commercial internal trip reduction accounting for elementary school students that reside in Westlake Villages, results in 4,670 daily, 331 AM, and 573 PM peak hour trips remaining within the site. As shown in Table 4.7.M, the proposed project is expected to generate approximately 25,210 new daily trips, including 1,964 AM and 2,509 PM peak hour trips that would be added to the adjacent roadway system.

Pass-by trips (i.e., trips already on the roadway system that stop on an already planned trip) were not assumed, as the amount of through traffic by the Marina is minimal, and the marina site is not visible from regional roadways.

Trip Distribution. The City of Stockton Traffic Model was used as a preliminary means to determine general trip distribution patterns for Westlake Villages. Information provided in the Spanos Park West Traffic Impact Analysis (Rajappan & Meyer, 2001) was also utilized. Trip distribution percentages are shown on Figure 4.7.10.

Trips generated by the proposed project were assigned to the roadway system based on the approach and departure directions shown on Figure 4.7.10. AM and PM peak hour project trip assignment is shown on Figures 4.7.11a and 4.7.11b for the near-term and Figures 4.7.11c and 4.7.11 d for the cumulative condition.

Table 4.7.M: Westlake Villages Trip Generation Summary

UNITS	LAND USE	DAILY	AM PEAK HOUR			PM PEAK HOUR		
		TRIPS	INBOUND	OUTBOUND	TOTAL	INBOUND	OUTBOUND	TOTAL
700	Student Elementary School[1]	710	120	83	203	84	98	182
2,161	Single Family Homes[2]	17,520	381	1,142	1,522	1,096	616	1,712
868	Active Adult Residences[3]	3,650	103	183	286	244	138	382
	Residential Subtotal	21,170	484	1,325	1,808	1,340	754	2,094
97,357	Square Feet General Office[4]	1,300	161	22	183	32	156	188
97,357	Square Feet Retail[5]	6,700	61	39	100	296	321	617
	Commercial Subtotal	8,000	222	61	283	328	477	805
Less Internal Trips								
653	Elementary School Students[6]	670	112	77	189	78	92	170
	To Commercial (25%)	2,000	56	15	71	82	119	201
	From Residential	2,000	15	56	71	119	82	201
	Net New Trips	25,210	643	1,321	1,964	1,473	1,036	2,509

Source: Fehr & Peers, 2003.

Notes:[1]Trip generation determined from the average rates for Elementary Schools (Land Use 520) in ITE's Trip Generation (6th Edition), as presented below.

Daily Rate: T = 1.02 (S)

AM Rate: T = 0.29 (S) (inbound = 59 percent, outbound = 41 percent)

PM Rate: T = 0.26 (S) (inbound = 46 percent, outbound = 54 percent)

[2]Trip generation determined from the regression equation for Single Family Detached Housing (Land Use 210) in ITE's Trip Generation (6th Edition), as presented below.

Daily Equation: Ln(T) = 0.920 Ln(D) + 2.707

AM Equation: T = 0.700 (D) + 9.477 (inbound = 25 percent, outbound = 75 percent)

PM Equation: Ln(T) = 0.901 Ln(D) + 0.527 (inbound = 64 percent, outbound = 36 percent)

[3] Trip generation determined trip generation studies conducted by Fehr & Peers of similar Active Adult residences, as presented below.

Daily Rate: T = 4.21 (D)

AM Rate: T = 0.33 (D) (inbound = 36 percent, outbound = 64 percent)

PM Rate: T = 0.44 (D) (inbound = 64 percent, outbound = 36 percent)

[4]Trip generation determined from the regression equation for General Office (Land Use 710) in ITE's Trip Generation (6th Edition), as presented below.

Daily Equation: Ln(T) = 0.768 Ln(X) + 3.654

AM Equation: Ln (T) = 0.797 Ln(X) + 1.558 (inbound = 88 percent, outbound = 12 percent)

PM Equation: T = 1.121 (X) + 79.295 (inbound = 17 percent, outbound = 83 percent)

Trip generation determined from regression equation for Shopping Center (Land Use 820) in ITE's Trip Generation (6th Edition), as presented below.

Daily Equation: Ln(T) = 0.643 Ln(X) + 5.866

AM Rate: T = 1.03 (X) (inbound = 61 percent, outbound = 39 percent)

PM Equation: Ln (T) = 0.66 Ln(X) + 3.403 (inbound = 48 percent, outbound = 52 percent)

Where: T = trip ends, LN = logarithmic equation, D = number of dwelling units, X = 1,000's of square feet, S = Students

[6] Elementary school trip generation reduced to account for students residing in Westlake Villages. Based on information provided from the Lodi Unified School District, conventional single-family homes in their district generate approximately 0.302 elementary school students per household.

Figure 4.7.10: Project Trip Distribution

Figure 4.7.11a: Peak Hour Project Trip Assignment - Near-Term

Figure 4.7.11b: Peak Hour Project Trip Assignment - Near-Term

Figure 4.7.11c: Peak Hour Project Trip Assignment - Cumulative

Figure 4.7.11d: Peak Hour Project Trip Assignment - Cumulative

Existing plus Approved Projects plus Project Conditions Analysis

Intersection Analysis. Traffic from the proposed project was added to the Existing Plus Approved Projects forecasts, as shown on Figures 4.7.12a and 4.7.12b. Each study intersection was analyzed (including the project entrances) as summarized in Table 4.7.N. The analysis results indicate that sixteen of twenty-two study intersections would operate at an acceptable LOS range (i.e., LOS D or better) with the addition of project traffic. The six intersections that would operate at unacceptable levels include:

X Eight Mile Road/Trinity Parkway - AM and PM peak hours

X Eight Mile Road/I-5 Southbound Ramps - AM and PM peak hours

X Eight Mile Road/Thornton Road - AM and PM peak hours

X Eight Mile Road/Davis Road - AM and PM peak hours

X Eight Mile Road/Lower Sacramento Road - AM and PM peak hours

X Hammer Lane/I-5 Northbound Ramps - AM peak hour

Traffic Signal Warrant Analysis. The results of the signal warrant analysis listed in Table 4.7.O shows that traffic signal warrants are satisfied at the Eight Mile Road/Davis Road intersection prior to the addition of project traffic. The addition of project traffic would cause the peak hour signal warrant to be met at the following four intersections:

X Mokelumne Circle/Scott Creek Drive (west intersection)

X Eight Mile Road/Rio Blanco Road

X Eight Mile Road/Primary Entrance

X Eight Mile Road/Secondary Entrance

Satisfaction of traffic signal warrants at the Eight Mile Road/Rio Blanco Road intersection is largely a function of the westbound left-turn and northbound right-turn volumes to the Marina Parcel. As the left- and right-turn movements do not conflict and the side-street would operate at LOS A, signalization of this intersection is not recommended. Signalization for the two project entrances on Eight Mile Road, as well as the Mokelumne Circle/Scott Creek Drive intersection, is recommended.

Freeway Analysis. Traffic from the approved projects and Westlake Villages was added to the existing peak hour traffic on I-5. Each mainline segment of I-5 north and south of Eight Mile Road was analyzed based on the volumes shown in Table 4.7.P. The analysis results indicate that, with the addition of project traffic, all mainline segments would operate at LOS D or better during both peak hours.

Figure 4.7.12a: Existing Plus Approved Projects Plus Project Traffic Volumes

Figure 4.7.12b: Existing Plus Approved Projects Plus Project Traffic Volumes

Table 4.7.N: Existing Plus Approved Projects Plus Project Intersection Level of Service Summary

	INTERSECTION	PEAK HOUR	EXISTING		EXISTING + APPROVED PROJECTS		EXISTING + APPROVED PROJECTS + PROJECT	
			V/C RATIO[1] OR DELAY[2]	LOS	V/C RATIO[1] OR DELAY[2]	LOS	V/C RATIO[1] OR DELAY[2]	LOS
1.	Eight Mile Road/Mokelumne Circle	AM PM	7 Sec. (WB 10) 6 Sec. (EB 11)	A (B) A (B)	0.41 0.36	A A	0.75 0.63	C B
2.	Eight Mile Road/ Trinity Parkway	AM PM	0.20 0.15	A A	0.64 **0.92**	B **E**	**0.98** **1.17**	**E** **F**
3.	Eight Mile Road/I-5 Southbound Ramps	AM PM	32 Sec. (SB > 50) 33 Sec. (SB > 50)	D (F) D (F)	0.63 0.80	B C	**1.07** **1.13**	**F** **F**
4.	Eight Mile Road/I-5 Northbound Ramps	AM PM	13 Sec. (NB 43) 9 Sec. (NB 26)	B (E) A (D)	0.46 0.52	A A	0.63 0.78	B C
5.	Eight Mile Road/Oak Grove Regional Park Entrance	AM PM	3 Sec. (NB 36) 2 Sec. (NB 20)	A (E) A (C)	3 Sec.(NB>50) 3 Sec.(NB>50)	A (F) A (F)	3 Sec.(NB>50) 4 Sec.(NB>50)	A (F) A (F)
6.	Eight Mile Road/Thornton Road	AM PM	0.79 0.66	C B	**1.17** **1.07**	**F** **F**	**1.24** **1.18**	**F** **F**
7.	Eight Mile Road/Davis Road	AM PM	**> 50 Sec.** **> 50 Sec.**	**F** **F**	**> 50 Sec.** **> 50 Sec.**	**F** **F**	**> 50 Sec.** **> 50 Sec.**	**F** **F**
8.	Eight Mile Road/ Lower Sacramento Road	AM PM	0.77 0.65	C B	**0.94** **0.93**	**E** **E**	**1.02** **1.00**	**F** **E**
9.	Mokelumne Circle/ Scott Creek Drive (west intersection)	AM PM	1 Sec. (EB 12) 1 Sec. (EB 10)	A (B) A (B)	5 Sec. (EB>50) 2 Sec. (EB 24)	A (F) A (C)	9 Sec. (EB>50) 5 Sec. (EB 32)	A (F) A (D)
10.	Mokelumne Circle/ Cosumnes Drive (east intersection)	AM PM	5 Sec. (EB 9) 7 Sec. (EB 9)	A (A) A (A)	7 Sec. (EB 15) 8 Sec. (EB 11)	A (C) A (B)	9 Sec. (EB 21) 9 Sec. (WB 13)	A (C) A (B)
11.	Trinity Parkway/ Cosumnes Drive	AM PM	2 Sec. (WB 9) 2 Sec. (WB 9)	A (A) A (A)	0.43 0.59	A A	0.52 0.69	A B
12.	Trinity Parkway/ McAuliffe Drive	AM PM	2 Sec. (SB 7) 5 Sec. (WB 8)	A (A) A (A)	0.37 0.57	A A	0.45 0.67	A B
13.	Thornton Road/AG Spanos Boulevard (north intersection)	AM PM	0.48 0.24	A A	0.59 0.31	A A	0.62 0.36	B A
14.	Thornton Road/ Whistler Way	AM PM	0.33 0.21	A A	0.41 0.28	A A	0.42 0.30	A A
15.	Thornton Road/AG Spanos Boulevard (south intersection)	AM PM	0.36 0.34	A A	0.56 0.65	A B	0.64 0.75	B C
16.	Mariners Drive/Otto Drive	AM PM	N/A N/A	N/A N/A	9 sec. (EB 13) 15 SEC. (EB 24)	A C	10 Sec. (BE 14) 17 sec. (27)	A(B) C(D)
17.	Hammer Lane/Mariners Drive	AM PM	0.58 0.65	A B	0.72 0.74	C C	0.74 0.75	C C
18.	Hammer Lane/I-5 Northbound Ramps	AM PM	0.86 0.52	D A	**1.01** 0.73	**F** C	**1.01** 0.73	**F** C
19.	Hammer Lane/I-5 Southbound Ramps	AM PM	0.55 0.73	A C	0.59 0.80	A D	0.60 0.81	A D
20.	Eight Mile Road/Rio Blanco Road	AM PM	-- --	-- --	-- --	-- --	6 Sec. (NB 9) 9 Sec. (NB 14)	A (A) A (B)

21.	Eight Mile Road/Primary Entrance	AM PM	-- --	-- --	-- --	-- --	6 Sec. (NB 12) 5 Sec. (NB 21)	A (C) A (C)
22.	Eight Mile Road/ Secondary Entrance	AM PM	-- --	-- --	-- --	-- --	6 Sec. (NB 24) 5 Sec. (C27)	A (C) A (D)

Source: Fehr & Peers, 2003.
Notes: [1] Signalized intersection level of service is based on V/C ratio according to the Circular 212 methodology, Transportation Research Board, 1980.
[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. Both the average intersection control delay and worse case stop-controlled movement delay are presented.

Table 4.7.O: Existing Plus Approved Plus Project Peak Hour Signal Warrants [1]

INTERSECTION	PEAK HOUR	EXISTING PLUS APPROVED	EXISTING PLUS APPROVED PLUS PROJECT
Eight Mile Road/Oak Grove Regional Park Entrance	AM PM	Not Met Not Met	Not Met Not Met
Eight Mile Road/Davis Road	AM PM	Met Met	Met Met
Mokelumne Circle/Scott Creek Drive (west intersection)	AM PM	Not Met Not Met	Met Not Met
Mokelumne Circle/Consumnes Drive (east intersection)	AM PM	Not Met Not Met	Not Met Not Met
Mariners Drive/Otto Drive	AM PM	Not Met Not Met	Not Met Not Met
Eight Mile Road/Rio Blanco Road	AM PM	-- --	Not Met Met
Eight Mile Road/Primary Entrance	AM PM	-- --	Met Met
Eight Mile Road/Secondary Entrance	AM PM	 --	Met Met

Source: Fehr & Peers, 2003.
Notes: [1] Based on methodologies presented in Caltrans' Traffic Manual

Table 4.7.P: Mainline I-5 Analysis Near-Term Conditions

SEGMENT	PEAK HOUR	EXISTING			EXISTING PLUS APPROVED			EXISTING PLUS APPROVED PLUS PROJECT		
		VOLUME	DENSITY[1]	LOS[2]	VOLUME	DENSITY[1]	LOS[2]	VOLUME	DENSITY[1]	LOS[2]
North of Eight Mile Road Northbound	AM	1,610	8.7	A	1,784	9.6	A	1,916	10.3	A
	PM	2,770	14.9	B	3,065	16.5	B	3,169	17.1	B
North of Eight Mile Road Southbound	AM	2,760	14.9	B	2,925	15.8	B	2,989	16.1	B
	PM	1,940	10.5	A	2,235	12.0	B	2,382	12.8	B
South of Eight Mile Road Northbound	AM	2,010	10.8	A	2,551	13.7	B	2,901	15.6	B
	PM	3,460	18.6	C	4,447	24.3	C	5,254	30.4	D
South of Eight Mile Road Southbound	AM	3,4502,4	18.	C	4,074	22.1	C	4,798	26.7	D
	PM	20	13.0	B	3,364	18.1	C	3,932	21.2	C

Source: Fehr & Peers, 2003
Notes: [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.

Cumulative Conditions Analysis

Intersection Analysis. Traffic from the proposed project was added to the Cumulative Without Project forecasts, as shown on Figures 4.13a and 4.13b. Each study intersection was analyzed (including the project entrances) as summarized in Table 4.7.Q. The analysis results indicate that the addition of project traffic would degrade the operation of the Eight Mile Road/I-5 Southbound Ramps and the Eight Mile Road/I-5 Northbound Ramps intersections. Additionally, the project would add traffic to an intersection projected to operate at a deficient LOS F (Hammer Lane/I-5 Northbound Ramps - AM peak hour). All other intersections would operate acceptably (i.e., LOS D or better) with the addition of project traffic.

Traffic Signal Warrant Analysis. Traffic signal warrants were reviewed for the Cumulative condition, as presented in Table 4.7.R. Traffic signal warrants would not be satisfied at any of the unsignalized study intersections prior to the addition of project traffic. With the addition of project traffic, signal warrants would be satisfied at the following four intersections:

X Mokelumne Circle/Scott Creek Drive (west intersection)

X Eight Mile Road/Rio Blanco Road

X Eight Mile Road/Primary Entrance

X Eight Mile Road/Secondary Entrance

The satisfaction of traffic signal warrants at the Eight Mile Road/Rio Blanco Road intersection is largely a function of the westbound left-turn and northbound right-turn volumes to the Marina Parcel. As the left- and right-turn movements do not conflict, and the side-street would operate at LOS B or better during the peak hours, signalization of this intersection is not recommended. Signalization of the two project entrances on Eight Mile Road, as well as the Mokelumne Circle/Scott Creek Drive intersection, is recommended.

Freeway Analysis. Traffic from the proposed project was added to the Cumulative Without Project peak hour traffic forecasts for I-5. Each mainline segment of I-5 north and south of Eight Mile Road was analyzed based on the volumes shown in Table 4.7.S. The analysis results indicated that the addition of project traffic would worsen the service level conditions from LOS E to LOS F for the southbound I-5 south of Eight Mile

Road (AM peak hour) and northbound I-5 south of Eight Mile Road (PM peak hour). All other freeway study segments would operate at acceptable service levels with the addition of project traffic.

Figure 4.7.13a: Cumulative With Project Peak Hour Traffic Volumes

Figure 4.7.13b Cumulative With Project Peak Hour Traffic Volumes

Table 4.7.Q: Cumulative Build Conditions Intersection Level of Service Summary

	Intersection	Peak Hour	Existing		Cumulative Without Project		Cumulative With Project	
			V/C Ratio[1] or Delay[2]	LOS	V/C Ratio[1] or Delay[2]	LOS	V/C Ratio[1] or Delay[2]	LOS
1.	Eight Mile Road/Mokelumne Circle	AM	7 Sec. (WB 10)	A (B)	0.51	A	0.83	D
		PM	6 Sec. (EB 11)	A (B)	0.43	A	0.70	C
2.	Eight Mile Road/ Trinity Parkway	AM	0.20	A	0.52	A	0.74	C
		PM	0.15	A	0.63	B	0.82	D
3.	Eight Mile Road/I-5 Southbound Ramps	AM	32 Sec. (SB > 50)	D (F)	0.87	D	**1.29**	**F**
		PM	33 Sec. (SB > 50)	D (F)	0.68	B	**0.94**	**E**
4.	Eight Mile Road/I-5 Northbound Ramps	AM	13 Sec. (NB 43)	B (E)	0.51	A	0.68	B
		PM	9 Sec. (NB 26)	A (D)	0.70	C	**0.97**	**E**
5.	Eight Mile Road/Oak Grove Regional Park Entrance	AM	3 Sec. (NB 36)	A (E)	0.45	A	0.50	A
		PM	2 Sec. (NB 20)	A (C)	0.29	A	0.31	A
6.	Eight Mile Road/Thornton Road	AM	0.79	C	0.71	C	0.76	C
		PM	0.66	B	0.53	A	0.60	A
7.	Eight Mile Road/Davis Road	AM	**> 50 Sec.**	**F**	0.45	A	0.46	A
		PM	**> 50 Sec.**	**F**	0.44	A	0.46	A
8.	Eight Mile Road/ Lower Sacramento Road	AM	0.77	C	0.74	C	0.76	C
		PM	0.65	B	0.65	B	0.66	B
9.	Mokelumne Circle/ Scott Creek Drive (west intersection)	AM	1 Sec. (EB 12)	A (B)	5 Sec. (EB 47)	A (E)	8 Sec. (EB>50)	A (F)
		PM	1 Sec. (EB 10)	A (B)	4 Sec.(EB 33)	A (D)	9 Sec. (EB>50)	A (F)
10.	Mokelumne Circle/ Cosumnes Drive (east intersection)	AM	5 Sec. (EB 9)	A (A)	7 Sec. (EB 16)	A (B)	10 Sec. (EB 23)	B (C)
		PM	7 Sec. (EB 9)	A (A)	9 Sec. (WB 15)	A (C)	15 Sec. (WB 29)	C (D)
11.	Trinity Parkway/ Cosumnes Drive	AM	2 Sec. (WB 9)	A (A)	0.43	A	0.52	A
		PM	2 Sec. (WB 9)	A (A)	0.73	C	0.85	D
12.	Trinity Parkway/ McAuliffe Drive	AM	2 Sec. (SB 7)	A (A)	0.43	A	0.49	A
		PM	5 Sec. (WB 8)	A (A)	0.64	B	0.69	B
13.	Thornton Road/AG Spanos Boulevard (north intersection)	AM	0.48	A	0.40	A	0.41	B
		PM	0.24	A	0.35	A	0.38	A
14.	Thornton Road/ Whistler Way	AM	0.33		0.46	A	0.47	A
		PM	0.21	A	0.39	A	0.41	A
15.	Thornton Road/AG Spanos Boulevard (south intersection)	AM	0.36	A	0.53	A	0.61	B
		PM	0.34	A	0.52	A	0.61	B
16.	Mariners Drive/Otto Drive	AM	N/A	N/A	4 Sec. (SB 23)	A (C)	4 Sec. (SB 24)	A (C)
		PM	N/A	N/A	4 Sec. (NB 23)	A (C)	4 Sec. (NB 23)	A (C)
17.	Hammer Lane/Mariners Drive	AM	0.58	A	0.67	B	0.69	B
		PM	0.65	B	0.66	B	0.68	B
18.	Hammer Lane/I-5 Northbound Ramps	AM	0.86	D	**1.11**	**F**	**1.11**	**F**
		PM	0.52	A	0.57	A	0.59	A
19.	Hammer Lane/I-5 Southbound Ramps	AM	0.55	A	0.64	B	0.65	B
		PM	0.73	C	0.68	B	0.68	B
20.	Eight Mile Road/Rio Blanco Road	AM	--	--	--	--	6 Sec. (NB 9)	A (A)
		PM	--	--	--	--	9 Sec. (NB 14)	A (B)
21.	Eight Mile Road/Primary Entrance	AM	--	--	--	--	5 Sec. (NB 17)	A (C)
		PM	--	--	--	--	7 Sec. (NB 42)	A (E)

22.	Eight Mile Road/Secondary Entrance	AM PM	-- --	-- --	-- --	-- --	13 Sec. (NB>50) 6 Sec. (NB 42)	B (F) A (E)

Source: Fehr & Peers, 2003.
Notes: [1] Signalized intersection level of service is based on V/C ratio according to the Circular 212 methodology, Transportation Research Board, 1980.
[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. Both the average intersection control delay and worse case stop-controlled movement delay are presented.
Values in bold represent unacceptable level of service

Table 4.7.R: Cumulative Conditions Peak Hour Signal Warrants [1]

INTERSECTION	PEAK HOUR	CUMULATIVE	CUMULATIVE PLUS PROJECT
Mokelumne Circle/Scott Creek Drive (west intersection)	AM PM	Not Met Not Met	Met Not Met
Mokelumne Circle/Cosumnes Drive (east intersection)	AM PM	Not Met Not Met	Not Met Not Met
Eight Mile Road/Rio Blanco Road	AM PM	-- --	Not Met Met
Eight Mile Road/Primary Entrance	AM PM	-- --	Met Met
Eight Mile Road/Secondary Entrance	AM PM	-- --	Met Met

Source: Fehr & Peers, 2003.
Notes: [1] Based on methodologies presented in Caltrans' Traffic Manual

Table 4.7.S: Mainline I-5 Analysis Cumulative Conditions

SEGMENT	PEAK HOUR	EXISTING			CUMULATIVE			CUMULATIVE PLUS PROJECT		
		VOLUME	DENSITY[1]	LOS[2]	VOLUME	DENSITY[1]	LOS[2]	VOLUME	DENSITY[1]	LOS[2]
North of Eight Mile Road Northbound	AM PM	1,610 2,770	8.7 14.9	A B	1,991 3,409	10.7 18.4	A C	2,123 3,513	11.4 18.9	B C
North of Eight Mile Road Southbound	AM PM	2,760 1,940	14.9 10.5	B A	3,314 2,324	17.9 12.5	B B	3,378 2,471	18.2 13.3	C B
South of Eight Mile Road Northbound	AM PM	2,010 3,460	10.8 18.6	A C	3,189 **6,104**	17.2 **40.4**	B **E**	3,539 **6,911**	19.1 **> 45**	C **F**
South of Eight Mile Road Southbound	AM PM	3,450 2,420	18.6 13.0	C B	**5,702** 3,725	**35.0** 20.1	**E** C	**6,426** 4,293	**> 45** 23.4	**F** C

Source: Fehr & Peers, 2003.
Notes: [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.
Values in bold represent unacceptable level of service

4.7.3 Impacts and Mitigation Measures

Existing plus Approved Projects plus Project Conditions

The following describes the impacts and mitigation measures for the proposed project under the Existing Plus Approved Projects Plus Project condition.

Potential for Unacceptable Intersection Operations - Existing plus Approved Projects plus Project

Based on the significance criteria, the proposed project would potentially result in significant impacts at six intersections in the Existing Plus Approved Projects Plus Project scenario.

Further review of the potentially impacted intersections shows the proposed project would increase traffic through the Hammer Lane/I-5 Northbound Ramps intersection by less than 5 percent. Therefore, the impact of the proposed project does would not be considered significant at the Hammer Lane/I-5 Northbound Ramps intersection.

Impact TRAF-1: The proposed project would worsen the operation at four intersections projected to operate at an unacceptable service level under Existing Plus Approved Projects conditions. This is considered a significant impact under Streets and Highways Goal 1.9.

a. Eight Mile Road/Trinity Parkway. Project traffic would result in LOS E conditions during the AM peak hour and worsen projected LOS E conditions to LOS F during the PM peak hour.

Mitigation Measure TRAF-1a. The project applicant shall contribute its fair share towards the following improvements: dual northbound right-turn lanes and dual westbound left-turn lanes. With implementation of this mitigation measure, this impact would be reduced to a less-than-significant level, as shown in Table 4.7.T.

b. Eight Mile Road/Thornton Road. Project traffic would worsen the LOS F conditions during both peak hours.

Mitigation Measure TRAF-1b: The project applicant shall contribute its fair share toward planned improvements at this intersection. Planned improvements include widening Eight Mile Road to provide four through lanes in each direction, dual eastbound and westbound left-turn lanes, and eastbound and westbound right-turn only lanes. Planned improvements on the north leg of Thornton Road include a left-turn lane, two through lanes and a right-turn lane. Improvements on the south leg of Thornton Road include dual left-turn lanes, three through lanes, and a right-turn lane. With implementation of this mitigation measure, the impact would be reduced to a less-than-significant level, as shown in Table 4.7.T.

c. Eight Mile Road/Davis Road. Project traffic would worsen the LOS F conditions during both peak hours.

Table 4.7.T: Near-Term Intersection Analysis With Mitigation

	INTERSECTION	PEAK HOUR	EXISTING PLUS APPROVED PROJECTS		EXISTING PLUS APPROVED PROJECTS PLUS PROJECT		EXISTING PLUS APPROVED PROJECTS PLUS MITIGATION		EXISTING PLUS APPROVED PROJECTS PLUS PROJECT PLUS MITIGATION	
			V/C RATIO[1] OR DELAY[2]	LOS	V/C RATIO[1] OR DELAY[2]	LOS	V/C RATIO[1] OR DELAY[2]	LOS	V/C RATIO[1] OR DELAY[2]	LOS
2.	Eight Mile Road/ Trinity Parkway	AM PM	0.64 **0.92**	B **E**	**0.98** **1.17**	**E** **F**	0.45 0.57	A A	0.78 0.82	C D
3.	Eight Mile Road/I-5 Southbound Ramps	AM PM	0.63 0.80	B C	**1.07** **1.13**	**F** **F**	0.40 0.41	A A	0.46 0.76	A C
4.	Eight Mile Road/ Thornton Road	AM PM	**1.17** **1.07**	**F** **F**	**1.24** **1.18**	**F** **F**	0.60 0.57	A A	0.64 0.64	B B
7.	Eight Mile Road/ Davis Road	AM PM	**> 50 Sec.** **> 50 Sec.**	**F** **F**	**> 50 Sec.** **> 50 Sec.**	**F** **F**	0.33 0.27	A A	0.34 0.29	A A
8.	Eight Mile Road/ Lower Sacramento Road	AM PM	**0.94** **0.93**	**E** **E**	**1.02** **1.00**	**F** **E**	0.40 0.37	A A	0.42 0.38	A A
9.	Mokelumne Circle/ Scott Creek Drive	AM PM	5 Sec. (EB>50) 2 Sec. (EB 24)	A (F) A (C)	9 Sec. (EB>50) 5 Sec. (EB 32)	A (F) A (D)	0.45 0.35	A A	0.48 0.40	A A
21.	Eight Mile Road/ Primary Entry	AM PM	-- --	-- --	6 Sec. (NB 12) 5 Sec. (NB 21)	A (B) A (C)	-- --	-- --	0.44 0.65	A B
22.	Eight Mile Road/ Secondary Entry	AM PM	-- --	-- --	6 Sec. (NB 24) 5 Sec. (NB 27)	A (C) A (D)	-- --	-- --	0.61 0.72	B C

Source: Fehr & Peers, 2003.

Notes: [1]Signalized intersection level of service is based on V/C ratio according to the Circular 212 methodology, Transportation Research Board, 1980.

[2] 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.

Mitigation Measures TRAF-1c: The project applicant shall contribute its fair share toward planned improvements at this intersection. Planned improvements include widening of Eight Mile Road to provide four through lanes in each direction, dual eastbound and westbound left-turn lanes, and an eastbound right-turn lane. Planned improvements on Davis Road include a left-turn lane, two through lanes, and a right-turn lane in both directions. The intersection would also be signalized. With implementation of this mitigation measure, the impact would be reduced to a less-than-significant level, as shown in Table 4.7.T.

d. Eight Mile Road/Lower Sacramento Road. Project traffic would worsen projected LOS E conditions to LOS F during the AM peak hour, and worsen projected LOS E conditions during the PM peak hour.

Mitigation Measures TRAF-1d: The project applicant shall contribute its fair share toward planned improvements at this intersection. Planned improvements include widening of Eight Mile Road to provide four through lanes in each direction, dual eastbound and westbound left-turn lanes, and an eastbound right-turn lane. Planned improvements on Lower Sacramento Road include a left-turn lane, two through lanes, and a right-turn lane in the northbound direction, and dual left-turn lanes, two through lanes, and a right-turn only lane in the southbound direction. With implementation of this mitigation measure, this impact would be reduced to a less-than-significant level, as shown in Table 4.7.T.

Implementation of the above mitigation measures would reduce TRAF-1 impacts to a less than significant level.

Impact TRAF-2: The proposed project would result in unacceptable service levels at the Eight Mile Road/I-5 interchange. This is considered a significant impact under Streets and Highways Goals 1.8 and 1.9.

Eight Mile Road/I-5 Southbound Ramps. The addition of project trips would result in unacceptable LOS F conditions at the Eight Mile Road/I-5 southbound ramps intersection.

Mitigation Measures TRAF-2: The project applicant shall provide an eastbound to southbound free right-turn lane at the Eight Mile Road/I-5 southbound ramps intersection.

With implementation of this measure, the impact would be reduced to a less-than-significant level, as shown in Table 4.7.T.

Table 4.7.U shows the project contribution for each intersection, in addition to the proportion of existing traffic and traffic from approved developments, at each mitigated intersection.

Table 4.7.U: Project Contribution to Mitigation Under Existing Plus Approved Plus Project Conditions

INTERSECTION	TRAFFIC CONTRIBUTION [1]		
	EXISTING TRAFFIC	APPROVED DEVELOPMENT	WESTLAKE VILLAGES
Eight Mile Road/ Trinity Parkway	420 Vehicles (7 percent)	3,065 Vehicles (55 percent)	2,117 Vehicles (38 percent)
Eight Mile Road/I-5 Southbound Ramps	1,012 Vehicles (16 percent)	3,217 Vehicles (51 percent)	2,031 Vehicles (33 percent)
Eight Mile Road/ Thornton Road	2,097 Vehicles (54 percent)	1,338 Vehicles (35 percent)	407 Vehicles (11 percent)
Eight Mile Road/ Davis Road	1,607 Vehicles (56 percent)	1,007 Vehicles (35 percent)	253 Vehicles (9 percent)
Eight Mile Road/ Lower Sacramento Road	2,322 Vehicles (67 percent)	884 Vehicles (26 percent)	252 Vehicles (7 percent)

Source: Fehr & Peers, 2003.
Notes: XX (YY) = Traffic Volume (Percent of Total)
[1] Percentage is based on the projected project traffic divided by the total traffic at the intersection. The PM peak hour contribution is reflected.

Potential for Unacceptable Operations at Site Access Intersections

Impact TRAF-3: The proposed project would result in unacceptable operations at the site access intersections. This is considered a significant impact based on Streets and Highways Goal 1.3.

Although the Primary and Secondary access roadways would operate at an overall acceptable service level, delay would be experienced for vehicles exiting the site onto Eight Mile Road, as well as vehicles traveling through the Mokelumne Circle/Scott Creek Drive intersection. Additionally, peak hour traffic signal warrants would be satisfied at all three intersections with the addition of project traffic.

Mitigation Measure TRAF-3: The project applicant shall install traffic signals at the Westlake Villages Primary and Secondary Entrances on Eight Mile Road, as well as the Mokelumne Circle/Scott Creek Drive intersection.

The signalization of these intersections would minimize delay for vehicles exiting the project site and would improve overall access to the development, reducing this impact to a less-than-significant level, as shown in Table 4.7.T.

Cumulative Conditions

The following describes the impacts and mitigation measures for the proposed project under Cumulative Plus Project conditions.

Potential for Unacceptable Intersection Operations - Cumulative Conditions

Based on the significance criteria, the proposed project would potentially result in significant impacts at three intersections in the Cumulative With Project scenario. Further review of the potentially impacted intersections shows that the proposed project would increase traffic through the Hammer Lane/I-5

Northbound Ramps intersection by less than 5 percent. Therefore, the impact of the proposed project would not be considered significant at the Hammer Lane/I-5 Northbound Ramps intersection.

Impact TRAF-4: The proposed project would result in unacceptable service levels at the Eight Mile Road/I-5 interchange. This is a significant impact under Streets and Highways Goal 1.9.

The addition of traffic through the Eight Mile Road/I-5 interchange would result in LOS F conditions during the AM peak hour at the southbound ramps intersection and LOS E during the PM peak hour at both the northbound and southbound ramps intersections.

Mitigation Measure TRAF-4: The project applicant shall fund improvements to the Eight Mile Road/I-5 interchange. Recommended improvements are shown in Figure 4.7.14 and include a northbound loop off-ramp.

As identified in ***Impact TRAF-3***, the proposed project would result in unacceptable operations at the site access intersections. **Mitigation Measure TRAF-3** would also mitigate the cumulative site access impact, as shown on Table 4.7.V.

With implementation of this measure, the impact would be reduced to a less-than-significant level, as shown in Table 4.7.V.

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

The addition of project traffic would result in LOS F conditions for the segment of I-5 south of Eight Mile Road. These conditions would be experienced in the southbound direction during the AM peak hour, and the northbound direction during the PM peak hour.

Mitigation Measures TRAF-5: None Available. Widening of I-5 to provide four mixed-flow travel lanes per direction would reduce this impact to a less-than-significant level, as shown in Table 4.7.W. 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.

Figure 4.7.14: Cumulative Interchange Improvements

Table 4.7.V: Cumulative Intersection Analysis With Mitigation

Intersection	Peak Hour	Cumulative Without Project		Cumulative With Project		Cumulative Without Project Plus Mitigation		Cumulative With Project Plus Mitigation	
		V/C Ratio[1] or Delay[2]	LOS	V/C Ratio[1] or Delay[2]	LOS	V/C Ratio[1] or Delay[2]	LOS	V/C Ratio[1] or Delay[2]	LOS
Eight Mile Road/I-5 Southbound Ramps	AM PM	0.87 0.68	D B	**1.29** **0.94**	**F** **E**	0.55 0.48	A A	0.63 0.85	B D
Eight Mile Road/I-5 Northbound Ramps	AM PM	0.51 0.70	A C	0.68 **0.97**	B **E**	0.40 0.41	A A	0.50 0.52	A A
Mokelumne Circle/ Scott Creek Drive	AM PM	5 Sec. (EB 47) 4 Sec.(EB 33)	A (E)A (D)	8 Sec. (EB>50) 9 Sec. (EB>50)	A (F) A (F)	0.42 0.41	A A	0.45 0.46	A A
Eight Mile Road/ Primary Entry	AM PM	-- --	----	5 Sec. (NB 17) 7 Sec. (NB 42)	A (C)A (E)	-- --	-- --	0.56 0.69	A B
Eight Mile Road/ Secondary Entry	AM PM	-- --	-- --	13 Sec. (NB>50) 6 Sec. (NB 42)	B (F)A (E)	-- --	-- --	0.73 0.76	C C

Source: Fehr & Peers, 2003.
Notes: [1]Signalized intersection level of service is based on V/C ratio according to the Circular 212 methodology, Transportation Research Board, 1980.
[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. Both the average intersection control delay and worse case stop-controlled movement delay are presented.

Site Access, Circulation, and Parking

This section evaluates project site access, on-site circulation, and parking.

Vehicular Site Access. Access to the residential portion of the project would be provided from two roadways intersecting Eight Mile Road and three east-west roadways connecting to the neighboring Spanos Park West development. Access to the Active Adult component of the project would be provided from one roadway connecting to the main collector roadway of the conventional housing project. The secondary access road could potentially be extended across Pixley Slough to provide additional access to the neighboring Shima Tract if it develops in the future.

Access to the Marina portion of the project site would be provided from Rio Blanco Road (an existing roadway that intersects with Eight Mile Road).

Inconsistencies with the Eight Mile Road Specific Plan

Impact Traf-6: the Project Proposes Modifications to Eight Mile Road That Are Inconsistent with the Eight Mile Road Specific Plan. This Is Considered a Significant Impact under Streets and Highways Goal 4.2.

The Eight Mile Road Specific Plan (Omni-Means, 2003) specifies future roadway cross-sections on Eight Mile Road between I-5 and SR 99. It does not address the improvement needs for the section of Eight Mile Road west of I-5, including the segment adjacent to the project site.

Table 4.7.W: Mainline I-5 Analysis Cumulative Conditions Plus Mitigation

SEGMENT	PEAK HOUR	CUMULATIVE WITHOUT PROJECT			CUMULATIVE WITH PROJECT			WITHOUT PROJECT PLUS MITIGATION		WITH PROJECT PLUS MITIGATION	
		VOLUME	DENSITY	LOS	VOLUME	DENSITY	LOS	DENSITY	LOS	DENSITY	LOS
South of Eight Mile Road Northbound	AM	3,189	17.2	B	3,539	19.1	C	12.9	B	14.3	B
	PM	**6,104**	**40.4**	**E**	**6,911**	**> 45**	**F**	25.2	C	29.8	D
South of Eight Mile Road Southbound	AM	**5,702**	**35.0**	**E**	**6,426**	**> 45**	**F**	23.3	C	26.9	D
	PM	3,725	20.1	C	4,293	23.4	C	15.1	B	17.3	B

Source: Fehr & Peers, 2003.
Notes: Density measured in passenger cars per mile per lane.
Mainline segment LOS based on vehicle density, according to the Highway Capacity Manual, Transportation Research Board, 2000.

Mitigation Measures TRAF-6: The project applicant shall update the Eight Mile Road Specific Plan and construct the required widening improvements between I-5 and Rio Blanco Road. This update should consider the roadway cross-sections and intersection design requirements for the subject section of Eight Mile Road.

Implementation of this measure would reduce this impact to a less-than-significant level

Potential for Increase in Transit Demand

Transit, Pedestrian, and Bicycle Access. Transit service is not currently provided in the study area. Four potential transit stop locations are proposed within the project site. These locations would directly serve the public park area, the Active Adult housing, as well as the two school sites. Appropriate bus shelters would also be provided at the bus stops, thereby satisfying Public Transportation Goal 1.2. The layout of these stops would provide for counter-clockwise transit circulation along the main collector within the project site.

Impact TRAF-7: The project would increase transit demand in an area that is not currently served by public transit. This considered a significant impact under Public Transportation Goal 1.2.

Mitigation Measures TRAF-7: The project applicant shall construct transit stops and transit shelters within the project site at locations approved by San Joaquin Regional Transit District. Implementation of this measure would reduce the impact to a less-than-significant level.

Implementation of this measure would reduce this impact to a less-than-significant level.

Potential to Conflict with General Plan Policies - Non-motorized Transportation

Impact TRAF-8: The proposed project would not provide for adequate levels of connectivity for bicycle and pedestrian routes within the project site. This considered a significant impact under Non-Motorized Transportation Goal 1.1.

Proposed roadway-cross sections indicate that sidewalks would be provided along all roads within the project site. Bike lanes would be provided along the collector roads and the Active Adult entry road. Both bike lanes and sidewalks would connect Westlake Villages to Spanos Park West, while a dedicated pedestrian and bike path would run along the levee for access to the marina parcel (i.e., Pixley Slough multi-use trail).

As shown on the site plan, pedestrian access to Eight Mile Road would be limited to the primary and secondary access roads, resulting in circuitous access to Eight Mile Road for some neighborhoods. Additionally, access between adjacent neighborhoods and to the Pixley Slough multi-use trail would be circuitous for neighborhoods K, N, and S. Additionally, only one pedestrian access is proposed from neighborhood K.

Mitigation Measure TRAF-8: The project applicant shall provide a bicycle/pedestrian connection to the trail from neighborhoods N and S, as well as a second access from neighborhood K to the adjacent neighborhoods.

Implementation of the above mitigation measure would reduce the impact to a less than significant level.

Potential for Inadequate Access

On-Site Circulation. The on-site circulation elements include one major collector loop providing access from Eight Mile Road, an east-west collector road connecting to Spanos Park West, a collector road with future potential extension across Pixley Slough, and the Active Adult entry road. The travel lanes on the internal roadways range from 9 to 12 feet in width. The major internal roads have either 10- or 12-foot wide travel lanes. Residential streets and the collector joining Westlake Villages to Spanos Park West have 7- or 8-foot wide adjacent parking lanes on both sides of the road. The collectors that interface with Spanos Park West include two-way center left-turn lanes, while the collector loop and Active Adult entry road have a landscaped median with left-turn pockets. All roadway cross-sections are adequate to provide circulation within the project site.

No direct access is proposed to residences along the collector roadways, which is positive in terms of minimizing conflicts between resident's access and through traffic. Most of the neighborhoods are served by two or more access points which allows for efficient access and circulation.

Impact TRAF-9: The proposed project would not provide multiple access points for all major developed areas within the site. This is considered a significant impact under Streets and Highways Goal 1.2.

One vehicular access is proposed to neighborhoods K, L, P, and R through W (Active Adult neighborhood). Neighborhood K would include a maximum of 132 housing units, Neighborhood L would include a maximum of 99 housing units, and Neighborhood P would provide a maximum of 121 units. A maximum of 868 Active Adult homes would be provided.

Mitigation Measures TRAF-9: The project applicant shall provide a second vehicular access point to neighborhoods K, L, P, and R through W. The additional access shall, at minimum, accommodate emergency vehicles.

Impact TRAF-10: The project site plan does not provide sufficient detail to evaluate access plans for the proposed elementary school. Due to the potential for safety-related conflicts between vehicles, bicycles, and pedestrians, this is considered a significant impact.

Access to the proposed elementary school site would occur from three roadways: the Secondary Access collector and two minor residential collectors. The site plan does not indicate a circulation scheme for the school.

Mitigation Measure TRAF-10: The project applicant shall prepare a detailed access and circulation plan for the elementary school in accordance with applicable design standards. The plan shall identify the location of proposed access points for vehicle, bicycle, and pedestrian traffic including drop-off and pick-up areas. The plan shall be approved by the City and LUSD prior to site construction.

Implementation of these measures would reduce these impacts to less than significant levels

Potential for Inadequate Parking Supply

Parking. As indicated by the proposed roadway cross-sections, on-street parking would be permitted only on residential streets and the collector interfacing with Spanos Park West. The City of Stockton Municipal Code (Section 16-102.1.1) requires one covered parking space and paved access thereto for each single-family dwelling unit. As all houses would be constructed with garages, each unit would provide its required off-street parking supply. The City has no requirements for on-street parking; therefore, any on-street parking provided would be considered sufficient.

The project site plan does not include sufficient detail to assess the adequacy of the off-street parking for the commercial and office uses proposed at the Marina. The following describes the parking requirements for these components of the project based on the City of Stockton Municipal Code (Section 16-102.2.B2 and 16-102.2.B3).

X *Commercial.* Off-street parking would be required at a rate of 13 parking spaces plus one additional space for each 250 square feet of gross floor area in excess of 5,000 square feet (Section 16-102.2.B2). For a 97,357 square-foot retail center, a total of 382 off-street parking spaces would be required.

X *Office.* A total of 125 parking spaces would be required plus one additional space per each 500 square feet of gross floor area in excess of 25,000 square feet (Section 16-102.2.B3). For a 97,357 square foot-office development, a total of 270 off-street parking spaces would be required.

Impact TRAF-11: The project site plan does not provide sufficient detail to evaluate parking plans for the proposed Marina commercial and office development. This is considered a significant impact.

Mitigation Measures TRAF-11: The project applicant shall provide adequate parking as required by the City's Zoning Code prior to the approval of the site plan for each non-residential use within the project area. Implementation of this measure would reduce the impact to a less-than-significant level.

Implementation of this measure would reduce this impact to a less than significant level.

4.7.4 Level of Significance after Mitigation

All project-related impacts will be mitigated to a less than significant level. However, feasible mitigation does not exist to offset all cumulative impacts. These impacts are significant and unavoidable.

4.8 HOUSING/POPULATION/SOCIOECONOMICS

4.8.1 Existing Setting

Population

Figure 4.8.1 presents the five population subareas used to describe population changes. Over the years, Stockton has grown primarily to the north. In 1960, only 26 percent of Stockton's Metropolitan Area population (22,805 persons) resided in the area north of the Calaveras River (Subarea A). By 1990, the population of Subarea A increased to 47.9 percent (129,064 persons) of the total. The other four subareas (B, C, D1, and D2) have decreased in population during this same period, suggesting that people are migrating to the north area away from the other subareas. This movement, coupled with natural increase and new in-migration, account for the rapid growth of Subarea A. The population of Subarea D1 grew slightly from 2.3 percent in 1980 to 2.5 percent in the 1990's, indicating some recent growth in the downtown Stockton area. Subarea B's share of the population showed the most significant reduction in population share from 1960 to 1990, dropping from 40.7 percent to 23.6 percent of the total population (LSA, 2001). Table 4.8.A shows the population changes by subarea from 1960 to 1990.

Table 4.8.A: Population Changes by Subarea Metropolitan Stockton, 1960 - 1990

	1960		1970		1980		1990	
SUBAREA	NUMBER	% TOTAL	NUMBER	% TOTAL	NUMBER	% TOTAL	NUMBER	% TOTAL
A	22,805	14.7%	42,978	24.5%	86,631	42.2%	129,064	47.9%
B	63,168	40.7%	63,658	36.3%	56,213	27.4%	63,527	23.6%
C	15,007	9.7%	16,967	9.7%	16,112	7.8%	18,196	6.7%
D_1	7,980	5.1%	6,008	3.4%	4,833	2.4%	6,765	2.5%
D_2	46,261	29.8%	45,954	26.2%	41,600	20.3%	52,070	19.3%
Total	**155,221**	100.0%	175,565	100.0%	205,389	100.0%	269,622	100.0

Source: City of Stockton, 2003

The County and City have each shown substantial growth since 1980, driven by immigration of Southeast Asians and increases in Bay Area commute traffic. The City's average annual growth rate between 1990 and 2000 has been about 1.6 percent. Between April 2000 and January 2002, the City of Stockton experienced a 4.1 percent growth rate (SJCOG, 2003).

Demographic characteristics have also changed in the City within the last 20 years. Race or ethnicity within the City has varied from white residents comprising 57 percent of the population in 1980 to 32 percent in 2000. The percentage of black residents has increased from 10 percent in 1980 to 11 percent in 2000. The percentage of Hispanics has increased from 22 percent in 1980 to 33 percent in 2000, while the percentage of Asians has increased from 9 percent in 1980 to 19 percent in 2000 (City of Stockton, 2003).

Figure 4.8.1: Population Subareas

The General Plan indicated that Stockton is expected to "experience relatively significant population growth (2-4% annually) and increasing demand for housing" over the planning period. The General Plan projects a population increase for the City of Stockton to a total population of 262,955 by 2000 (25%) and 302,900 by 2010 (44%). The General Plan indicates that "North Stockton will continue to be the focal point of increased population and housing development."

The SJCOG also projects that Stockton will reach a population of 311,033 by 2010 and 374,631 by 2020. SJCOG projections are shown in Table 4.8.B.

Table 4.8.B: SJCOG Projections Metropolitan Stockton and San Joaquin County Planning Areas

	2000	2010	2020
PLANNING AREA	POPULATION	POPULATION	POPULATION
Stockton*	247,400	311,033	374,631
Escalon	5,825	7,448	8,929
Lathrop	9,975	15,546	20,627
Lodi	57,900	63,787	69,156
Manteca	49,500	64,248	77,699
Ripon	10,400	15,695	20,524
Tracy	54,200	87,456	117,788
Unincorporated	131,400	134881	138,056
Total	**566,600**	**700,095**	**821,851**

Source: SJCOG, 2003
*Notes: *SJCCOG's 1990 population is lower than the 1990 Census tabulation due to slight difference in geographic coverage.*

Housing

The State Department of Finance reports the 2000 household size for Stockton as 3.143 (City of Stockton, 2003).

Information provided by the applicant states that 40% of the individuals moving into the Active Adult community will relocate from within the City while seven percent will relocate from within the County (Gruen, 2003). The average household size for the Active Adult is assumed to be 1.8, based on information provided by the applicant (see Appendix A for documentation). To be conservative, the figure of 2 individuals per household was used to estimate the Active Adult population for the proposed project.

The City's General Plan recognizes the probability of continuing population growth and housing demand over the next 10 to 20 years. The General Plan establishes a series of goals and policies which will ensure that adequate infrastructure and community needs are provided as anticipated growth occurs. The plan contains no policies directly related to population growth.

The housing stock for the City of Stockton as of 2000 was 81,621 total units as determined by the California Department of Finance (DOF) Demographic Research Unit. Between 1990 and 2000, 9,096 units were added, an increase of about 12.5%. The average increase was approximately 910 units per year over the decade. The number of housing units in the North Stockton area has increased from 6,280 in 1960 to 45,883 in 1990 (City of Stockton, 2003). Housing stock totals for 2000, 1990, and 1980 for the City are shown in Table 4.8.C.

Table 4.8.C: Housing Stock, City of Stockton, 1980-2000

	1980 UNITS	%	1990 UNITS	%	2000 UNITS	%
Single Family Units	39,706	64.8	44,871	61.9	53,107	65.1
Multi-Family Units	21,584	35.2	26,325	36.2	27,184	33.3
Mobile Homes	not given		1,329	1.9	1,330	1.6
Total	61,290		72,525		81,621	

Source: DOF 1990

Based on the 2000 Census, the housing vacancy rate (Jan. 1, 2000) is reported at 4.2% for the City of Stockton and 4.0% for San Joaquin County.

Land available for housing development is represented by the designations of vacant land in the General Plan. Nearly 1,526 acres of Low-Medium Density Residential and 285 acres of High-Density Residential designated lands are vacant and available for housing development. These designations would accommodate up to 7,497 and 3,871 units of housing, respectively, for a total of 11,368 units.

The Housing Element of the General Plan contain several goals, policies, and objectives related to housing, primarily related to land allocation. Other policy direction establishes criteria for project-level decisions or mandates action on the part of government officials which would further the provision of housing to all economic segments of the community. Housing policies relevant to the proposed project are discussed in Section 4.6, Land Use as are more general land use policies.

Employment

The 2000 Census indicates that the total labor force for the City of Stockton was 101,850 individuals. The unemployment rate for the civilian labor force was estimated at 12.4%. Total wage and salary employment by industry for the Stockton-Lodi Metropolitan Service Area in 1990, 2000, and 2002 are shown in Table 4.8.D.

Stockton area employment is dominated by four industries which together make up about 62% of the employed civilian labor force. The largest of these industries, trade, transportation, and utilities, makes up 21 percent of the total. Government makes up the second largest industry at approximately 20 percent. Educational and health services make up 12 percent while manufacturing makes up 10 percent of employment. Agriculture, formerly an important part of San Joaquin County's economy, now represents the sixth largest industry at approximately 8 percent of total employment (SJCOG, 2001).

San Joaquin County unemployment averaged about 10% in 2002 (EDD, 1996). This represents an increase after a long, slow decline from 1982-1989 when average annual employment dropped to 9.4%. The unemployment rate is subject to seasonal fluctuation due to the seasonal nature of agricultural, construction, and construction-related employment. Unemployment during 1995, for example, averaged 12.3% but fluctuated from a high of 14.1% in January to a low of 9.7% in September (LSA, 2001).

Table 4.8.D: Stockton-Lodi Metropolitan Service Area Wage and Salary Employment by Industry

INDUSTRY	1990	2000	2002
Agriculture, and Natural Resource and Mining	15,700	16,900	16,200
Construction	9,500	11,600	13,400
Manufacturing	24,300	24,700	21,000
Trade, Transportation, and Utilities	30,800	41,700	44,300
Information	2,700	3,000	3,100
Financial Activities	9,300	8,500	9,200
Professional and Business Services	9,200	16,800	17,200
Educational and Health Services	16,500	22,000	23,300
Leisure and Hospitality	11,700	14,400	15,900
Other Services	4,800	5,900	6,400
Government	33,800	37,000	40,100
Total	**168,300**	**202,500**	**210,100**

Source: San Joaquin Council of Governments 2001

4.8.2 Impact Significance Criteria

Potential significant impacts associated with population, housing, and socioeconomics have been evaluated using the following criteria:

HPS-a Result in substantial, unanticipated population growth;

HPS-b Level of conflict with housing/population projections and policies in the General Plan;

HPS-c Compliance with Stockton's affordable housing policies and objectives;

HPS-d Compliance with Stockton's jobs/housing balance policies and objectives;

HPS-e The CEQA Guidelines state that a project may have adverse impacts on housing if it will affect the existing supply of housing or create a demand for additional housing. A shift in housing supply or demand can produce significant impacts on household formation, commute patterns, and a community's quality of life; and

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: The project may have an impact on the City's housing/population projections and policies.

In 2010, the projected population for the City is 311,033. This represents an increase of 63,633 individuals over the 2000 population. Based on an average household size of 3.143, the City will need to add 20,265 housing units to accommodate this population increase. Recent and proposed residential development projects have constructed 13,900 housing units with an additional 3,036 units to be developed. A remaining 3,329 units would need to be planned to accommodate projected population growth. As such, the proposed project does not conflict with housing/population projections in the General Plan. The project will supply housing for a projected demand, including providing an Active Adult community. Therefore, the conditions presented in **Significance Criterion HPS-b** will not occur.

Impact HPS-2: The project may have an impact on the City's jobs/housing balance.

It is expected that 40 percent of the Active Adult home buyers will relocate from within the City limits, while 7 percent will relocate from within the County (Gruen, 2003). It is assumed that these individuals will retain their existing jobs and will not burden the City's jobs/housing balance. A number of these individuals are also expected to be retired. Additionally, a number of individuals who purchase homes in Westlake Villages will come within the City of Stockton. It can be assumed that these individuals are already employed and will not impact the jobs/housing balance. Individuals who relocate from outside of Stockton will most likely move due to employment relocation and will not impact the jobs/housing balance. Additionally, the commercial uses on SPW will provide an employment base, if needed. Therefore, the conditions presented in **Significance Criterion HPS-d** will not occur.

Impact HPS-3: The project will not shift a housing supply or create the need for additional housing.

Project implementation is not expected to affect any existing housing supplies or create a demand for additional housing beyond those proposed in the project. The project is designed to complement the adjacent SPW residential community and will not adversely affect established neighborhoods. Consequently, the project does not result in a shift in housing supply or demand, rather it is a response to expected demand and needed supply. As a result, the conditions expressed in **Significance Criterion HPS-e** will not occur.

Impact HPS-4: The project will not impact established communities.

The project site is located adjacent to SPW and has been designed to complement and extend this community. Project implementation will not divide or disrupt this residential neighborhood or otherwise have an effect on established communities. Therefore, the conditions presented in **Significance Criterion HPS-f** will not occur.

Potentially Significant Effects

Impact HPS-5: Result in substantial, unanticipated population growth.

It is expected that 40 percent of the Active Adult home buyers will relocate from within the City limits, while 7 percent will relocate from within the County. A number of individuals who purchase homes in the

conventional single-family communities are also expected to relocate from within the City. However, based on the number of proposed units, the project would add 8,128 individuals to the City of Stockton population. Based on a 2002 population of 253,800, the proposed project would increase the City's population to 261,928. This constitutes an approximate 3 percent increase in the City's population. In spite of the number of individuals that may relocate within the City, this represents a significant population growth since this area was not considered in planning projections of 2-4% growth rates. In light of these findings, the project may result in the conditions outlined in **Significance Criterion HPS-a**.

This impact is significant and unavoidable. No feasible mitigation exists to offset this impact.

Impact HPS-6: The proposed project does not provide high density residential units (or equivalent) which conflicts with the City's goals for multi-family residential uses.

The General Plan indicates that 300 acres of undeveloped plan should be provided in the General Plan area for high density housing. Because the project does not provide any multi-family housing, the existing deficiency of high density areas will be exacerbated. In light of these findings, the project may result in the conditions outlined in **Significance Criterion HPS-c**.

This impact is significant and unavoidable. No feasible mitigation exists to offset this impact.

4.8.4 Level of Significance after Mitigation

The proposed project results in two significant and unavoidable impacts to population and housing. The project will generate a substantial and unanticipated population that has not been considered in planning efforts and will not provide affordable housing, compounding existing deficiencies. Mitigation is not available to offset these impacts.

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

Parks and Recreation

Background

Park and Recreation Standards
The City of Stockton has adopted the parkland standards presented in Table 4.9.A.

Table 4.9.A: Recommended Park Classification and Standards

TYPE OF PARK	ACRES/1,000 POP.	ACRES/PARK	SERVICE RADIUS
Neighborhood Park	1	5 - 10	½ mile
Community Park	2	10 - 30	1 mile to citywide
Regional Park	7	30+	region wide

Source: LSA, 2001.

Neighborhood and Community Parks
By applying the above standards to the City's population base, the Park and Recreation Element determined the total parkland acreage by park type. This park acreage is expressed by park "need" for the entire City of Stockton in accordance with the parkland standard. The population of the City is estimated at 261,300 with a parkland need of 783.9 acres. When compared to the existing amount of parkland (545.25 acres), there is an overall deficiency of 238.65 acres. Table 4.9.B illustrates the parkland deficiency for the City.

Table 4.9.B: Neighborhood and Community Park Acreage Stockton City Limits

PARK TYPE	EXISTING CITY PARKS	NEED PER PARKLAND STANDARD	SURPLUS/ (DEFICIT)

PARK TYPE	EXISTING CITY PARKS	NEED PER PARKLAND STANDARD	SURPLUS/ (DEFICIT)
Total Citywide (Population 261,300)			
Neighborhood	153.15	261.3	(108.15)
Community	392.1	522.6	(130.5)
Total	**545.25**	**783.9**	**(238.65)**

Source: City of Stockton, 2003

Regional Parks

Table 4.9.C illustrates the existing regional parks that serve the Stockton area and how their combined acreage compares with the City standard. It should be noted that none of the regional parks are located in the City of Stockton.

Table 4.9.C: Regional Park Facilities and Regional Park Standard Comparison

PARK	ACREAGE
Micke Grove	258
Oak Grove	180
Silver Lake	150*
Regional Sports Center	70
Total Acreage	**658**
Needed Acreage per Parkland Standard	**1,829**
(Shortfall)/Overage	**(1,171)**

Source: LSA, 2001.
*Notes: *Actual acreage of the camp is 17 acres; however, this number is increased to include surrounding USFS land.*

The City and County are significantly deficient in regional parkland per the City's parkland standards.

Community Centers
Five community centers operate within the City: McKinley, Seifert, Sierra Vista, Stribley, and Van Buskirk. Based on a City standard of providing 1 community center per 30,000 people, the City appears to fall short of this standard. Additionally, the City falls short of meeting the standard of ½ square foot per resident, with a city population of 261,300. However, the City's General Plan provides policies to consider schools as community centers, thereby alleviating the deficiency in community centers.

Assessment of Future Demand

According to the City's Park and Recreation Element, as the City continues to grow in population, additional parks will need to be added to the City's current park system to keep up with demand. The City currently has several park sites that it anticipates developing over the next five to ten years. These sites are listed in Table 4.9.D.

The SJCOG estimates that the Stockton Metropolitan Area's population will grow by 90,000, to approximately 380,000, in 2010 (the Stockton Metropolitan Area is larger than the City of Stockton). Using the standard of 3 acres of neighborhood and community parkland per 1,000 population, 270 acres of parkland would need to be developed to meet the needs of these 90,000 new residents. As Table 4.9.D shows, only approximately 25.7 acres of this parkland is currently planned. Therefore, not counting the existing City-owned undeveloped sites, an additional 244.3 acres would need to be planned and developed to meet Stockton's estimated 2010 population. This calculation does not consider the existing deficit of neighborhood and communities parklands within the City limits.

Table 4.9.D: Future Park Sites

PARK	TOTAL ACREAGE
S.L. Fong (formerly Blossom Ranch Park)	5.0
Matt Equinoa Park (formerly La Morada Park)	15.0
Mike Garrigan Park	5.7
John Peri Park	N/A
Arnold Rue Park	N/A
Total	**25.7**

Source: City of Stockton, 2003.

Planned Bikeways

In May 1995, the City adopted the Bikeway Facilities Master Plan (Bikeway Plan). The Bikeway Plan was amended in January, 1999, and is currently being proposed for a subsequent amendment. The Bikeway Plan defines a classification system for bikeways, describes a proposed bikeway system (including construction and maintenance cost estimates), recommends policies for promoting bicycling and maintaining the City's bikeways, and presents a set of short-term (three- to five-year) implementation projects. The Bikeway Plan suggests a system that includes a total of 66 miles of separated bike paths (Class I), 92 miles of striped bike lanes (Class II), and 78 miles of bike routes (Class III). Figure 4.7.4 shows the adopted bikeway route plan. The plan designates a class I bikeway (12-foot width) along Pixley Slough, which forms the southern boundary of the SPW development. It is assumed that the bike path would be extended to include the Westlake Villages site.

Solid Waste/Landfill

The City of Stockton Public Works Department is responsible for the planning and administration of the solid waste management plans for the City. In the City, a majority of solid waste disposal is by means of landfill with material recovery accounting for the rest.

As mandated by law, the City complies with the requirements outlined in the California Solid Waste Reuse and Recycling Access Act (PRC 42900 through 42911).

The Forward, North County, and Foothill Landfills are the City of Stockton's main landfills. The Forward Landfill receives 85% of the City's waste and is owned and operated by Allied Waste North America. The remaining 15% is sent to the North County and Foothill Landfills which are County owned facilities (Miller, 2003). The Forward Landfill is a Class I, II, and III facility that accepts municipal, construction, agricultural, and industrial wastes, including asbestos, contaminated soils, and biosolids (CIWMB, 2003).

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

The City of Stockton Fire Department is responsible for fire protection services, water rescues, technical rescues (e.g., building collapse rescues), and response to hazardous materials spills within the City. It also provides emergency medical services, although American Medical Response, a private company, provides transport services. The current firefighting staff size of the Fire Department is 218 (City of Stockton, General Plan Background Report, 2003), and the standard structure fire response time is 3-4 minutes.

Police Protection Services

The City of Stockton Police Department provides protection to the community. The Police Department has centralized offices at 22 East Market Street in the downtown area of the City. There are approximately 377 sworn officers and 183 additional staff working for the Police Department. The Police Department has a master plan that estimates future staffing needs to lower crime rates and meet response time standards.

The proposed project would fall under the Police Department's Lakeview District geographical borders, generally Pacific Avenue to the east, Harding Way to the south, and the City limits to the north and west. A new police facility located in north Stockton at Hammertown and Tam O'Shanter is scheduled to open in November 2003. The four district comprising the Police Department will be reconfigured after the new station is opened (Evans, 2003).

Schools

The project site is located within the Lodi Unified School District (LUSD). The LUSD is responsible for providing public education to area residents at the elementary, middle, and high school levels. In light of the current vacant condition associated with the project site, there are no students being generated by the project site. An elementary school is planned for the adjacent SPW 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 Westlake Villages project would be served by the proposed Westlake Villages elementary school, Spanos Park West elementary school, Delta Sierra Middle School, and Bear Creek High School (Ryan, 2003). Current enrollments are presented in Table 4.9.E.

Table 4.9.E: Current Enrollments

SCHOOL	CURRENT ENROLLMENT	TOTAL CAPACITY
Delta Sierra Middle School	887	727*
Bear Creek High School	2,398	1,773

Source: Ryan, 2003
** Year-round education. Actually holds more than 727 students.*

Library

The Stockton-San Joaquin Public Library Department is operated by Stockton as a City department but is funded jointly by the City and County. The library system serves the entire County with the exception of the City of Lodi, which has its own system.

The library closest to the project site is the Troke Branch at 502 Benjamin Holt Drive, located approximately 8.0 miles south of the project site. The Thornton Branch is located in Thornton, approximately 15 miles north of the project area and is a County Library that serves the unincorporated areas of the County (a population of approximately 10,000 people).

The annual library attendance for 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 Provide an adequate supply of parkland and related facilities to meet the City's Parkland acreage and size requirements for neighborhood and community parks;

PR-b Contribute to the over-usage of Oak Grove Regional Park due to the proximity of the project to the park.

PR-c Park maintenance requirements could contribute to the financial burden of the City.

PR-d Conflict with General Plan policies for park locations.

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 Determined to Be Insignificant

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.

Potentially Significant Effects

Parks and Recreation

Impact PR-1: Project implementation shall result in an overall deficiency of parkland area, based on the project population and demand.

Community Parks. As indicated on the Master Development Plan (Figure 3.3.1), the Westlake Villages project will provide 12.8-acres of public parkland[1] for use by the project residents. Based on a maximum of 2,894 units, the total number of residents generated by the proposed project would be 8,128 (based on 3.143 individuals per conventional housing and 2.0 individuals per Active Adult housing). City parkland standards would require a total of 16.3 acres of community parklands. The proposed project is 3.5-acres deficient in community parklands based on City standards. As a result, the project would have a significant impact on the provision of community park land, and the conditions outlined in **Significance Criterion PR-a** would occur.

Neighborhood Parks. The project will provide 12 acres of village parks[2], ranging in size from 0.5 to 1.5 acres. The total acreage for these parklands was not provided in the Master Development Plan. Based on City standards of 1 acre for every 1,000 individuals, the proposed project should provide 8.1-acres of neighborhood parklands. Additionally, City standards for neighborhood parks require a minimum size of 5 acres per park. Collectively, it appears that the proposed project would provide an adequate amount of neighborhood parks, however, the proposed village parks do not meet the City's minimum size requirements. As a result, the project would have a significant impacts on the provision of neighborhood park land, and the conditions outlined in **Significance Criterion PR-a** would occur.

The proposed project does not provide adequate community parkland space and the proposed size of the neighborhood parks do not meet minimum City size requirements. In light of the existing shortfall of park land in the City, project implementation would aggravate this deficiency and contribute further to the unmet

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[1]Referred to as public parks in the Westlake Villages. Public parks do not meet the minimum size standards for Community Parks.

[2]Referred to as village parks in the Westlake Villages. Village parks do not meet the minimum size standards for Neighborhood Parks.

demand for parks. As a result, the project would have a significant impact on the provision of park lands, and the conditions outlined in **Significance Criterion PR-a** would occur.

Regional Parks. As presented in Table 4.9.A, the recommended regional parkland standard for the City of Stockton is 7.0 acres per thousand population. Application of this standard to the Westlake Villages project would warrant an obligation of 56.9 acres of regional parkland.

Oak Grove Regional Park provides a total of 180 acres of regional park land in the north Stockton region. Despite this relatively large County facility near the project site, based on population of 261,300 persons, a sizeable regional parkland shortfall (1,171 acres) is noted in the City when applying the regional parkland standard of 7.0 acre per 1,000 population. When adding the new population from the proposed project to the region, the shortfall will be incrementally impacted. Additionally, consultation with County staff indicates that Oak Grove Regional Park is already overburdened during events. Consequently, the conditions outlined in **Significance Criterion PR-b** are expected to occur.

Mitigation Measure PR-1: Prior to issuance of building permits, the applicant shall pay in-lieu fees equivalent to the neighborhood and community park acreage requirements (per City standards) that remain unfulfilled. The applicant will be required to provide 56.9 acres of regional parklands or an equivalent fee as determined by the City.

While payment of in-lieu fees is required to accommodate the park dedication requirements for the Westlake Villages project, park land will continue to be in short supply for the City. Unless the applicant provides adequate parkland acreage (as previously identified), the project will adversely contribute to these shortages, and is considered a significant impact.

Impact PR-2: Public parks proposed within the Westlake Villages project will impose a financial burden on the City with respect to park maintenance.

The City has adopted a policy regarding the development and maintenance of public parks. 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 Maintenance District. As a result of Proposition 218, City Council policy specifies that parks will be developed only when property owners approve an assessment for park maintenance fees and sufficient funds have been accumulated within the area's development fee zone for such improvements. For the Westlake Villages project, the policy is applicable to the parks, recreation areas, and open space proposed by the applicant. The applicant will fund park maintenance through the formation of a homeowner's association or equivalent. This homeowner's association will assess fees to provide funds to maintain the parklands within the project boundary. Therefore, the conditions outlined in **Significance Criterion PR-c** will not occur. However, the following measures are required.

Mitigation Measure PR-2a: Prior to recordation of any Final Map, the Owner, Developer, successor-in-interest (ODS) shall form a new zone of the Stockton Consolidated Landscape Maintenance District 96-2, 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. The ODS may request to annex to an existing zone of the Stockton Consolidated Landscape Maintenance District 96-2 provided the subdivision is within the service area of a park for which a zone of the Stockton Consolidated Landscape Maintenance District 96-2 has already been formed.

Formation of a new zone shall result in an assessment being established that include, but not 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 annual assessment to be increased in an amount equal tot he greater of: 1) three percent (3%) or 2) the percentage increase of the Consumer Price Index for the San Francisco - Oakland - San Jose County Area for All Urban Consumers, as developed by the U.S. Bureau of Labor Statistics, for a similar period.

Mitigation Measure PR-2b: Prior to recordation of any Final Map, the ODS shall establish 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 this subdivision.

If the ODS elects to provide maintenance for the improvements through a maintenance assessment district, the ODS shall form a new zone of the Stockton Consolidated Landscape Maintenance District 96-2 that include the entire subdivision. The entire subdivision may be considered for annexation to an existing zone of the Stockton Consolidate Landscape Maintenance District 96-2, 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 result in an assessment being approved 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 this subdivision.

Mitigation Measure PR-2c: All walls shall be located on private property and a separate maintenance easement shall be recorded for such walls. Such easement shall be sufficient to allow for regular maintenance (i.e graffiti removal) and shall include the width of the support footing as it extends from both sides of the wall.

Implementation of the above mitigation measure will ensure that the park facilities provided in Westlake Villages will receive sufficient financial means to be maintained and operated parks over the long term.

Impact PR-3: Design and/or locations for neighborhood parks without public street access around the park will conflict with City design criteria.

General Plan policy (Public Facilities and Services - Parks and Recreation, Goal 1, Policy 5) requires neighborhood park sites to be surrounded by public street access. All the village park sites proposed by the applicant will be surrounded by public streets, consequently, the conditions outlined in **Significance Criterion PR-d** will not occur.

Implementation of the proposed project will not result in inconsistencies with General Plan policy regarding the provision of public street access around neighborhood park sites.

Solid Waste/Landfill

Impact SW-1: Implementation of the Westlake Villages 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 Westlake Villages				
Residential	2,894	8,128	11.5 lbs./person/day	93,472
Total:				**93,472**

Source: Miller, 2003

The application of these rates to the population projected for the proposed Westlake Villages project results in an estimated volume of 93,472 pounds per day or 41 tons per day. Assuming a 50% diversion rate, the total landfill capacity required for the proposed project would be 7,483 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.

Solid waste service is a competitive business that benefits from an increase in service. As a result of the competition generated by market demand, collection service companies adjust to specific demand requirements. While the collection companies may require additional staff, equipment, etc., to manage the increase in project demand, the effects are beneficial to the individual participating companies. Consequently, the conditions presented in **Significance Criterion SW-b** will not occur.

Implementation of the proposed project will not result in overburdening the regional landfills or collection services.

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 8,128 individuals to the North Stockton area. This would require a subsequent increase in fire fighting personnel to provide adequate fire protection services. A fire station is included as part of the project and will be located at the southwestern corner of Eight Mile Road and Driveway #1. This will prevent increases to response times and level of service. The new fire station will also provide services to areas outside of the project site. However, the fire station will need to be staffed which may create a financial burden on the City. Mitigation is provided to offset this impact.

New developments tend to generate fewer fire-related calls due to the use of new materials and construction techniques in accordance with current codes. The Active Adult community is expected, however, to generate more emergency medical services calls than conventional communities (Gruen, 2003).

Mitigation Measure FP-1a: The applicant will provide an on-site fire station at the southwest corner of Eight Mile Road and F Street. Additionally, prior to issuance of building permits, the project applicant shall pay development impacts fees (as applicable) to reduce the burden on fire protection services. Evidence indicating payment of fees shall be provided to the Director of Community Development Department.

Mitigation Measure FP-1b: The applicant will consult with the City's Fire Department regarding adequacy of project plans relating to the safety of structure, safety devices, and emergency vehicle access.

Implementation of the above mitigation measures will reduce fire protection impacts to less than significant levels.

Police

Impact PP-1: The proposed Westlake Villages project will increase the demand for law enforcement services.

The proposed project would add 8,128 individuals to the North Stockton area. This would require a subsequent increase in law enforcement officers to provide adequate police protection services. The Active Adult community is expected to generate only 54 percent of the average per capita police costs induced by the conventional housing community (Gruen, 2003).

It was noted, however, that the "gated" nature of villages G through L will serve to deter criminal activity, thereby decreasing the number of calls generated from the project site.

Mitigation Measure PP-1a: Prior to issuance of building permits, the project applicant shall pay development impacts fees (as applicable) to reduce the burden on police protection services. Evidence indicating payment of fees shall be provided to the Director of Community Development Department.

Mitigation Measure PP-1b: The applicant will consult with the City's Police Department regarding adequacy of project plans relating to the safety and defensible space issues.

Mitigation Measure PP-1c: Contractors are responsible for providing licensed uniformed security guards for after hours and weekends to prevent damage or theft of building materials, equipment, and/or appliances. Removal of doors to home appliances until after installation in new hoes shall be considered.

Mitigation Measure PP-1d: Construction site perimeter fencing is also essential to prevent criminal activity during construction.

Implementation of the above mitigation measures will reduce police-related/security impacts to less than significant levels.

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	0.150

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.

Table 4.9.H: Estimated Student Generation from Westlake Villages

GRADE LEVEL	SINGLE FAMILY
K-6	618
7-8	166
9-12	307
Total:	**1,091**

Source: LSA, 2003

A new elementary school facility will be constructed at Westlake Villages to serve a majority of the new elementary aged children. The first phase of Westlake Villages will be accommodated by the new Spanos Park West elementary school. Students generated by the proposed project for middle and high school levels will be accommodated by the new Crista McAuliffe Middle School (to be completed in August 2004) and Bear Creek High School. As a result, the conditions outlined in **Significance Criterion SCH-a** would not occur.

Mitigation Measure SCH-1: Prior to issuance of building permits, the project applicant shall pay fees (as applicable) to comply with State-mandated impact fees. Evidence indicating payment of fees shall be provided to the Director of Community Development Department. 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 is planning to construct a branch library to service the northeastern portion of the City. The City's Library Master Plan does not provide provisions for a library in the northwestern section of the City. Consultation with library personnel indicated that providing adequate space within the commercial portion of Spanos Park West would offset any impacts from the proposed project. It is expected that the additional population generated as part of the proposed project may result in the conditions outlined in **Significance Criterion LIB-a**.

Mitigation Measure LIB-1a: Prior to issuance of building permits, the project applicant shall pay development impacts fees (as applicable) to reduce the burden on community library services. Evidence indicating payment of fees shall be provided to the Director of Community Development Department.

Implementation of the previous mitigation measure will create a less than significant impact on library services.

Vector Control

Impact VC-1. Locating the project development adjacent to sources of mosquito populations could result in health risks to residents

The County Mosquito and Vector Control District monitors mosquito populations throughout the project area, and provides vector control services to reduce health risks to area residents. Based on their records, the mosquito populations may periodically be at levels that could present a public health problem. Even with aggressive mosquito control operations, mosquito populations may remain higher 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 Westlake Villages 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

Except for park land impacts, implementation of the above mitigation measures will reduce the impacts to public services to less than significant levels. For park lands, even with the proposed mitigation measures, the potential impacts to park lands will remain significant and adverse.

4.10 PUBLIC WATER SUPPLY ASSESSMENT

The City of Stockton Municipal Utilities District has prepared a Water Supply Assessment in conjunction with the proposed project. This Water Supply Assessment is the basis for this section of this EIR and is provided in Appendix I.

4.10.1 Existing Setting

Water Supply

The Stockton East Water District (SEWD) is a public agency that treats and supplies water to City of Stockton, San Joaquin County, California Water Service Company and San Joaquin County farmers. At the time of the Water Supply Assessment, the SEWD water treatment plant capacity was 45 million gallons per day (mgd). Actual SEWD water supply availability ranges from 100,000 acre-feet per year (wet years) to 30,000 acre-feet per year (dry years) to 22,000 acre-feet (critical years). The source of SEWD's is via the New Hogan Reservoir (up to 110,000 acre-feet) and New Melones Reservoir (75,000 acre-feet). The contract for New Hogan Reservoir water also entitles the SEWD to 10,000 acre-feet per year that has not yet been appropriated by Calaveras County. The SEWD also has interim contacts with the Oakdale Irrigation District (OID) and South San Joaquin Irrigation District (SSJID) for a total of 30,000 acre-feet per year. Surface water availability is expected to decrease, in the future, since either the OID or SSJID contracts will not be renewed. Additionally, as Calaveras County appropriates more water from the Calaveras River, less will be available to the SEWD. Table 4.10.A outlines SEWD water sources.

Table 4.10.A: Existing SEWD Water Sources and Critical Year Availability

Water Source	Annual Contract Amount Thousand Acre Feet	Projected "Critical Year" Annual Availability (acre-feet per year)		
		2000	2010	2020
New Hogan Water Supplies	Total Yield 100	12,000	12,000	12,000
New Melones Interim Contract	Total Contract 75	Not Available in Dry Years		
Calaveras County Water District	Unused Calaveras County Water Rights	10,000	8,000	6,000
Oakdale Irrigation District	15	4,000	4,000	4,000
South San Joaquin Irrigation District	15	4,000	4,000	0
TOTAL	205	30,000	28,000	22,000

Source: MUD, 2004

Ground water comprises approximately 40 percent of City of Stockton Metropolitan Area's (COSMA) total water supply. Between 1947 and 1978, ground water levels declined due to the reliance of ground water as the sole means of a water supply. More recently, ground water fluctuations are due to seasonal wetness and irrigation usage. Since the drought of the early 1990's, the ground water basin is considered to be recovering and is "operating within a manageable range." Since 1947, saline water has migrated east-northeast and

rendered groundwater unusable in some areas. The estimated sustainable use of ground water is 0.92 acre-feet per acre per year for new growth in the northeastern portion of the City and 0.75 acre-feet per acre per year for the remaining areas. These numbers are expected to limit saline water intrusion, maintain or not significantly lower ground water levels, and be sustainable over the long term. This equals approximately 43,000 acre-feet per year over wet and dry years.

Significant growth in the City of Stockton has increased the demand of water. This growth coupled with regulatory "pressures" and saltwater intrusion of groundwater have put pressure on the City of Stockton's water supplies. To offset this pressure and growth, the City has attempted to secure existing surface water supplies from the SEWD and sustainably manage groundwater supplies. The City has applied to the State Water Resources Control Board to appropriate up to 125,900 acre-feet of water per year from the Delta Water Supply Project. The rights to this water supply are not yet secure.

Currently, the existing water demand for the City of Stockton Metropolitan Area (COSMA) is 68,000 acre-feet per year. This is expected to increase to 85,330 acre-feet per year by 2015, which coincides with the build-out under the current City of Stockton General Plan. Table 4.10.B outlines the existing water supplies and demands for the COSMA. Table 4.10.C outlines the estimated future water demand based on approved General Plan projects.

Table 4.10.B: Existing Water Supplies and Demands for the COSMA

Year Type	Demand Reduction	Surface Water (acre-feet/ year)	Ground Water (acre-feet/ year)	Total Water Supply (acre-feet/year)	Year 2000 Demand with Reductions (acre-feet/ year)
Normal	0%	48,194	19,806	68,000	68,000
Single Dry	15%	19,300	38,500	57,800	57,800
Multiple Dry (hypothetical 3-year drought)	0% (first) 10% (second) 10% (third)	48,194 19,300 19,300	19,806 41,900 41,900	68,000 61,200 61,200	68,000 61,200 61,200
Average over 70 years	5%	35,620	29,199	64,819	64,819

Source: MUD, 2004

Table 4.10.C: Future Water Demand Based on Approved General Plan

General Plan Land Use Designation	Unit Demand Factor (acre-feet per acre per year)	General Plan Area (acres)	Municipal Water Demands at Year 2015 (acre-feet per year)
Low-Medium Density Residential	1.5	31,222	47,872
High-Density Residential	3.0	1,368	4,104
Administrative Professional	1.5	841	1,266
Commercial	1.5	3,776	5,749
Performance Industrial/Industrial	1.5	9,582	14,020
Institutional	1.5	6,648	10,235
Park and Recreational	2.0	1,042	2,084
Agricultural/Open Space	---	27,585	—
TOTAL		82,064	85,330

Source: MUD, 2004

Water Distribution System

Construction of the conveyance facilities for New Melones Reservoir water to the treatment plant and expansion of the water treatment plant have helped meet the water needs of the planning area. Since 1988, a portion of the infrastructure to serve the project site has been constructed. This infrastructure includes the Northwest Reservoir (two 3.4 million gallon storage tanks and associated transmission facilities within the proposed project site), and the segment of the north Stockton 30-inch line (LSA, 2001). A third water storage tank is planned in this area to serve the storage and water pressure requirements for development in this region. This third storage tank is a planned City Capital Improvement Project and is being funded through developer-related fees. Construction of the tank will occur in response to anticipated development activity. A 24-inch stub line, which exists along Consumnes Drive in Spanos Park West would be extended into Westlake Villages. A 12-inch water line located in Eight Mile Road and a 12-inch line in Trinity Way could also be extended into the proposed project area. Numerous smaller pipes to distribute water at the appropriate pressures to all points within the system are also necessary to serve this development. These lines are included in the Master Development Plan and would be constructed as the development progresses (DEA, 2003). According to the project engineer, the existing water lines within Spanos Park West have been sized to accommodate future demand in the North Stockton area. Figure 4.10.1 provides a layout of existing and proposed (conceptual) water facilities.

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

Figure 4.10.1: Conceptual Water System Plan

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.

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

Impact WSA-1: Implementation of the proposed project will increase the demand for water supplies. The City may not be able to guarantee a supply of water beyond on a first-come, first-serve basis.

Water supplies to the SEWD are expected to decrease in the future due to the loss of OID or SSJID water, and the loss of Calaveras River water. This decrease will be partially offset by increases in New Hogen or New Melones water deliveries. It is expected that the SEWD will meet dry year water deficiencies through the use of ground water, water conservation , and other sources of surface water supplies. These other sources of surface water may include water transfer agreements with local irrigation districts and municipalities. Table 4.10.D presents the existing water supplies and demands for the COSMA.

The proposed project's water demands will be met using surface and ground water. Currently, the average water demand per acre equals 1.6 acre-feet per acre per year. 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. New development applications will receive 0.92 acre-feet per acre per year of ground water. The remaining 0.68 acre-feet per acre per year will be obtained through "surface water and other supplemental supplies including but not limited to the SEWD supplies, adjacent water districts, water conservation , and reclaimed water" (MUD, 2004).

Table 4.10.D indicates how the COSMA water demands will be met in the year 2024. Under normal conditions, surface and ground water will be used to meet projected demands. In dry years, ground water will be relied on to meet shortages in surface water supplies.

Table 4.10.D: Available Water Supplies and Demands Including the Proposed Project

Year Type	Demand Reduction	Surface Water (acre-feet/ year)	Ground Water (acre-feet/ year)	Total Water Supply (acre-feet/year)	Year 2000 Demand with Reductions (acre-feet/ year)
Normal	0%	49,102	24,391	73,493	73,493
Single Dry	15%	19,300	43,169	62,469	62,469
Multiple Dry (hypothetical 3-year drought)	0% (first) 10% (second) 10% (third)	49,102 19,300 19,300	24,391 46,844 46,844	73,493 66,144 66,144	73,493 66,144 66,144
Average over 70 years	5%	35,623	34,195	69,819	69,819

Source: MUD, 2004

The Water Supply Assessment indicates that there is a sufficient supply of water to serve the proposed project. The City has indicated that water will be provide on a first-come, first-serve basis and the Water Supply Assessment also indicates that "annexation of the project to the City of Stockton assumes no pre-existing entitlement of water." However, the Water Supply Assessment states that "the COSMUD ... has sufficient water supplies to meet the water supplies of the project" and this Water Supply Assessment "will remain valid for 24 months from the date of transmittal to the Community Development Department." If the project is approved within this 24 month time frame, the Water Supply Assessment indicates that water will be available and the conditions outlined in **Significance Criterion WAT-a** will not occur.

The following conclusions are included in the Water Supply Assessment:
"The COSMUD determines that it has sufficient water supplies to meet the water demands of the project. The COSMUD makes this determination based on the information provided in the WSA and on the following specific facts:

X The existing near-term and long-term reliable supplies of SEWD surface water supplies and indigenous groundwater supplies can deliver a sustainable reliable water supply without impacting environmental values and/or impacting the current stabilization of the groundwater basin underlying the COSMA.

X The existing conjunctive use program of using SEWD and future COSMUD surface water supplies and COSMA groundwater supplies. These two supplies have been extensively analyzed as part of the DWSP Feasibility Report, and additional groundwater studies completed as part of a regional [Water Supply Assessment] shows that sufficient water rights and available groundwater exist for the Project.

X The project will be served by water supplies made available through the existing COSMUD conjunctive program."

If the project is approved within this 24 month time frame, the Water Supply Assessment indicates that water will be available and the conditions outlined in Significance Criterion WAT-a will not occur.

Impact WSA-2: Project implementation could require extensive modifications to the existing water system to meet proposed project demand.

Development of the proposed project would necessitate water system modifications in order to provide adequate distribution. Most of the water system modifications that would be necessary to support development of the proposed project have already been implemented (see discussion in the above section Water Distribution System). The remaining infrastructure needed includes numerous smaller pipes to distribute water at appropriate pressures to all points within the system. It is expected that the water supply infrastructure will be extended from Spanos Park West and development impact fees exacted on new development projects for surface water connections would assist in financing expanded services to the proposed project. As mentioned in the Existing Setting, the existing water system lines in Spanos Park West have been sized to accommodate additional demand in the North Stockton area. The project engineer (DEA) has submitted preliminary water system plans to the City's Municipal Utilities Department for comment. According to DEA, the City has indicated that sufficient line capacity is available to serve the proposed project. Therefore, the conditions outlined in **Significance Criterion WAT-b** would not occur. The following measures are required.

Mitigation Measure WSA-1a: Prior to issuance of building permits, the applicant shall pay all applicable connection fees and/or capital improvement fees required by City ordinance to fund the necessary improvements to the domestic water supply. The Department of Community Development will collect fees in conjunction with building permit issuance. The MUD will oversee water system analysis. The Departments of Planning, Building, and MUD shall verify that conditions are attached to Tentative Maps and that necessary dedications are made or secured prior to approval of Final Map. All conditions set forth in the Annexation MOU will be met by the applicant.

Mitigation Measure WSA-1b: Prior to issuance of building permits, the applicant shall provide evidence of compliance with plumbing, metering, and other water conservation measures in effect, including the 16 BMPs included in the City's Urban Water Management Plan, 1995 Update. The Department of Community Development would collect fees in conjunction with building permit issuance. The MUD will oversee water system analysis. The Departments of Planning, Building, and MUD shall verify that conditions are attached to Tentative Maps and that necessary dedications are made or secured prior to approval of Final Map.

Mitigation Measure WSA-1c: Prior to approval of improvement plans for each development unit, the applicant will perform a water system analysis of the annexation project areas utilizing methodology approved by the Municipal Utilities Department. The Department of Community Development would collect fees in conjunction with building permit issuance. The MUD will oversee water system analysis. The Departments of Planning, Building, and MUD shall verify that conditions are attached to Tentative Maps and that necessary dedications are made or secured prior to approval of Final Map.

Mitigation Measure WSA-1d: Prior to approval of the Final Map, the applicant shall design and construct all on-site and off-site water facilities to comply with the revised City Master Water Plan and the water system analysis. The Department of Community Development would collect fees in conjunction with building permit issuance. The MUD will oversee water system analysis. The Departments of Planning, Building, and MUD shall verify that conditions are attached to Tentative Maps and that necessary dedications are made or secured prior to approval of Final Map.

Development of the proposed project would require construction of additional infrastructure to accommodate water delivery. However, the proposed mitigation measures (i.e., Mitigation Measures WSA 1a-1d) would reduce the impacts to a less than significant level.

4.10.4 Level of Significance After Mitigation

Implementation of the mitigation measures outlined above will ensure that the water supply impacts are reduced to less than significant levels.

4.11 UTILITIES AND SERVICE SYSTEMS

4.11.1 Existing Setting

Wastewater

Sewage Treatment

Sewage from the proposed project will be treated at the City of Stockton's Regional Wastewater Control Facility (RWCF) located on Navy Drive in southwest Stockton. The RWCF provides secondary and tertiary treatment of wastewater, and following treatment, effluent is discharged into the San Joaquin River in accordance with the terms of a NPDES permit issued by the Central Valley RWQCB.

Stockton's adopted Wastewater Treatment Master Plan points out that certain unit processes at the RWCF are approaching their functional capacity. Engineering-Science also points out in their 1992 Secondary Treatment Facilities Expansion Study that the actual wastewater treatment capacity is estimated to be 38 mgd of average dry weather flow. The present amount of average dry weather flow being treated at the RWCF is approximately 30 mgd during the non-canning season and 38 mgd during the canning season. 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 56 mgd by December 2003. City Council approved a general plan build out wastewater treatment capacity of 55 mgd in July 1997.

Existing Collection System

The proposed project is located within the System 10 service area. System 10 comprises the undeveloped area south of Eight Mile Road and west of SR 99. The recently completed North Stockton Pipelines project extended the North Stockton sewer outfall to the eastern boundary of the System 10 service area. The North Stockton sewer outfall extension now services an area of over 4,700 acres and 24,000 dwelling units. The ultimate capacity of the System 10 service area will exceed 17 mgd) and wastewater generated within the service area will be pumped by the “ultimate” 14-Mile Sewer Pump Station (SPS). The ultimate 14-Mile SPS will be an upgrade to the existing “interim” 14-Mile SPS. This upgrade consists of larger pumps, pump motors, on-site pumping modifications, and upgrades to the electrical and control systems.

The existing interim 14-Mile SPS is located at the former Northwest Sewage Treatment Plant. This interim system consist of three submersible wastewater pumps (each with a capacity of 1,200 gallons per minute at 120 feet of head), surge tank, standby power generation equipment, electrical and control building, and magnetic flow meter. The system was designed to serve wastewater flows generated by the System 10 collection system via the 66-inch North Stockton outfall sewer and to provide relief capacity to the existing 33-inch North/South Interceptor.

Table 4.11.A presents the developments that are serviced by the North Stockton outfall sewer and North Stockton Pipelines project. Table 4.11.B provides wastewater flow information generated by each project. North Stockton projects identified in Table 4.11.A include: Elkhorn Country Club, Waterford Estates, Beck Ranch, Beck Estates, Fairway Greens. North Stockton Pipelines extension projects include: Villa Tuscany, La Morada, Villa Antinori, High School (West Lane). The North Stockton Pipelines extension projects Planned Development Area does not include active projects and wastewater flows from this area are not

currently conveyed to the 14-Mile SPS. The Planned Development Area is included to account for "ultimate" development conditions.

Table 4.11.A Developments Serviced by the North Stockton Outfall Sewer

			DWELLING UNIT EQUIVALENT			
DEVELOPMENT	CURRENT GROSS ACREAGE	ULTIMATE GROSS ACREAGE	CURRENT OCTOBER 2003	ULTIMATE	PERCENT CURRENT COMPLETE	PERCENT ULTIMATE COMPLETE
LeBaron Estates	36	36	135	162	83	83
Spanos Park East	418	418	1,750	1,794	98	98
Spanos Park West	460	460	1,372	2,718	50	50
North Stockton Projects	112	112	225	502	45	45
North Stockton Pipelines Extension - Active Projects	650	650	560	3,628	15	15
North Stockton Pipelines Extension - Planned Development Area		2,272		11,360		0
TOTAL	1,676	3,948	4,042	20,164	46	20

Source: Thompson-Hysell, 2003

Table 4.11.B Current and Ultimate Wastewater Flows, gallons per day (gpd)

DEVELOPMENT	CURRENT ANNUAL DRY WEATHER FLOWS	CURRENT INFLOW AND INFILTRATION	ULTIMATE INFLOW AND INFILTRATION	CURRENT PEAK WET WEATHER FLOWS	ULTIMATE PEAK WET WEATHER FLOWS	PERCENT OF ULTIMATE TOTAL
LeBaron Estates	40,500	14,256	14,256	104,036	119,426	1
Spanos Park East	525,000	16,7284	16,7284	1,315,340	1,340,420	8
Spanos Park West	411,600	184000	184,000	1,131,640	1,898,860	11
North Stockton Projects	67,500	44,800	44,800	213,370	371,260	2
North Stockton Pipelines Extension - Active Projects	168,000	260,000	260,000	813200	2,591,960	15
North Stockton Pipelines Extension - Planned Development Area			908,800		8,201,920	48
TOTAL	1,212,600	670,340	1,517,540	3,577,586	14,493,846	100

Source: Thompson-Hysell, 2003

The 14-Mile SPS is estimated to have a capacity of 3.75 mgd with two pumps operating and one pump on standby. The 14-Mile SPS has an ultimate capacity of 5.1 mgd with all three pumps operating, however, this does not allow for standby capacity and resulting backpressures are too high for the pipeline. As shown in Table 4.11.B, the 14-Mile SPS peak wet weather flows are approximately 3.58 mgd. As such, the reliable

capacity of the 14-Mile SPS is almost met by current active developments. The remaining available capacity of the 14-Mile SPS is 0.17 mgd (Thompson-Hysell, 2003).

According to the project engineer, the existing sewer lines within Spanos Park West have been sized to accommodate future demand in the North Stockton area. The Westlake Villages project site would be serviced by extending lines from Spanos Park West. Currently, a 30-inch gravity force main is located at the western end of Spanos Park West in Cosumnes Drive. A 24-inch line also exists in Trinity Way and a sewer stub is located in Eight Mile Road (DEA, 2003). Figure 4.11.1 provides a layout of existing and proposed (conceptual) sewer facilities.

Gas and Electric Services

The proposed 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 development south of the site in the City of Stockton.

Electricity

Three major electric transmission lines traverse the approximate center of the Spanos Park West development on a north-south axis. Two of the easements are each 125 feet in width and contain the United States Department of Energy, Western Area Power Administration's Hurley-Tracy 230-kv transmission lines. The third easement is 75 feet in width and contains PG&E's Rio Oso-Tesla 230-kv transmission line. These high voltage transmission lines are suspended from large structural towers located well above ground, and are a significant feature of the SPW area (LSA, 2001).

There are two substations currently serving the area: the Stagg Substation, located on Feather River Drive at March Lane, and the Eight Mile Substation, located west of Interstate Highway 5 and north of Eight Mile Road. According to Mike Lang, PG&E Engineer, these facilities should adequately serve the proposed development (Lang, 2003).

Natural Gas

There are existing gas facilities on the west side of I-5 and on the east side of I-5, however, the two facilities are not connected. In the future, PG&E anticipates connecting the two facilities which will provide better service to the area. Currently, the SPW development is being adequately served from the existing west side facility. The existing lines on Scott Creek Drive and Cosumnes Drive would be utilized for distribution to the proposed Westlake Villages, however PG&E could not commit to the ability to provide adequate natural gas service to the proposed project (Lang, 2003).

Figure 4.11.1: Conceptual Sewer System Plan

Communication Services

Telephone service in Stockton is provided by the SBC. Phone lines will be extended from SPW and have the capacity to service the Westlake Villages project. High speed internet access (DSL) will be available through the same lines (Weld, 2003).

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, 2001).

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 to Be 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 agricultural character of the project site, project implementation will require the construction of new facilities and infrastructure to serve the proposed land uses. Development of the proposed project

would require the installation of additional transmission and distribution lines. Typically, in accordance with Public Utilities Commission Electric Rules 15.1 and 16, Gas Rules 15 and 16, subdivider/utility company cost-sharing agreements are executed to provide for the installation of facilities required to serve new developments (LSA, 2001).

According to planning staff at PG&E, there is adequate capacity available to serve the proposed project with electrical service (Lang, 2003). 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 may result in the increase in telephone and cable service demand which may interfere with the ability of utility providers to serve the existing customers.

Capacity for both telephone service and cable television service would need to be expanded in order to serve the project area. Pursuant to the franchise agreement between SBC and the State of California, SBC 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.

Currently, the 14-Mile SPS has a remaining capacity of approximately 0.17 mgd. Current, active development projects are approximately 46% complete, consisting of approximately 4,042 dwelling units. With the completion of active development projects, the 14-Mile SPS will exceed capacity. This capacity will likely be reached within the next year. Construction of approved and planned projects will increase the service area to 24,000 dwelling units, generating wastewater flows of 17 mgd. This exceeds the 14-Mile SPS's capacity of 3.75 mgd by 13.25 mgd. Table 4.11.C presents future wastewater flow conditions based on active, approved, and planned development projects (Thomspon-Hysell, 2003).

As mentioned in the Existing Setting, the existing sewer lines in Spanos Park West have been sized to accommodate additional demand in the North Stockton area. The project engineer (DEA) has submitted preliminary sewer plans to the City's Municipal Utilities Department for comment. According to DEA, the City has indicated that sufficient sewer line capacity is available to serve the proposed project. It should also be noted that the proposed project will require a sewage lift station and force main to convey wastewater to the sewer main located in Spanos Park West. The lift station and force main are included in the design for the Master Development Plan.

Table 4.11.C Ultimate Wastewater Flows for Active, Approved, and Planned Projects, gpd

DEVELOPMENT	CURRENT ANNUAL DRY WEATHER FLOWS	CURRENT INFLOW AND INFILTRATION	ULTIMATE INFLOW AND INFILTRATION	CURRENT PEAK WET WEATHER FLOWS	ULTIMATE PEAK WET WEATHER FLOWS	PERCENT OF ULTIMATE TOTAL
LeBaron Estates	40,500	14,256	14,256	104,036	119,426	1
Spanos Park East	525,000	16,7284	16,7284	1,315,340	1,340,420	8
Spanos Park West	411,600	184000	184,000	1,131,640	1,898,860	11
North Stockton Projects	67,500	44,800	44,800	213,370	371,260	2
North Stockton Pipelines Extension - Active Projects	168,000	260,000	260,000	813,200	2,591,960	15
North Stockton Pipelines Extension - Planned Development Area			908,800		8,201,920	48
Westlake Villages			272,800		2,017420	12
Spanos Parcel			65,600		592,040	3
TOTAL	1,212,600	670,340	1,917,540	3,577,586	17,103,306	100

Source: Thompson-Hysell, 2003

Mitigation Measure WW-1a: Prior to issuance of building permits, the owners, developers, and/or successors-in-interest shall pay the applicable sewer connection fees required for improvements to the City's Regional Wastewater Collection Facilities. The Community Development Department will ensure that sewer connection fees are paid in conjunction with building permit issuance.

Mitigation Measure WW-1b: An assessment of the 14-Mile SPS was prepared for the City that indicates the SPS does not have capacity to meet the needs of the proposed project. Therefore, the developer shall contribute a fairshare contribution to upgrade the 14-Mile SPS to ensure that the system can adequately service the proposed project. Accordingly, the City of Stockton will condition the approval of applicable tentative maps, subdivision improvement plans, and building permits. The Department of Community Development will ensure that connection fees are paid in conjunction with building permit issuance. The Departments of Community Development and MUD 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 these mitigation measures would avoid the conditions presented in **Significance Criterion WW-a.**

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

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.D.

Table 4.11.D: Average Monthly Gas and Electric Demand for Residential Development

LAND USE	PROPOSED UNITS (MAXIMUM)	THERMS	KW	TOTAL
Proposed Westlake Villages				
Natural Gas Electricity	2,894 2,894	37	 600	107,078 Therms 1,736,400 Kw

Source: Spanos Park West 1988 SEIR

As shown in Table 4.11.D, the proposed project will need approximately 107,078 therms of natural gas and 1.7 million kilowatts of electricity. While this will significantly increase consumption of electricity and natural gas, utility providers have indicated that the existing system has the capacity to accommodate the increase in electrical service. The conditions outlined in **Significance Criteria EG-b** would not occur.

Mitigation Measure EG-2: 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 area is typical of the San Joaquin Valley and Delta region with elevations around sea level or slightly above. This area is characterized by flat, featureless landforms. Local vegetation occurs primarily along the southern and eastern project boundaries at Disappointment Slough and Bishop Cut, respectively. Vegetation also grows along the drainage canals that transect the project site. During the growing season, the site is characterized predominantly by row crops. To the east, a major residential subdivision is under construction. These characteristics of the project site are fairly typical of the undeveloped northwest Stockton/San Joaquin County region.

There is currently no artificial lighting on the property.

In general, there are no unique aesthetic features, either natural or manmade, that are visually unique on the project site. Features found on the project site are characteristic of those commonly found associated with agricultural uses throughout the region.

Visual Character of Adjacent Uses

Agricultural uses are present to the north, south, and east. These uses are present across Eight Mile Road, Disappointment Slough, and Bishop Cut. The golf uses (The Reserve at Spanos Park) are also located north of Eight Mile Road. The golf uses present a manmade landscape that is considered to have high aesthetic value due to the extensive use of turf and ornamental landscaping. Residential uses are located directly west of the project site at SPW. The project site is directly bounded to the west and south by Bishop Cut and Disappointment Slough, respectively. The water resources provide high aesthetic value.

Existing Views of the Site

The site is visible from two public viewpoints. These are:

X Paradise Point Marina

X Eight Mile Road

From Paradise Point Marina, views extend unobstructed down the site to SPW. From Eight Mile Road, the views extend unobstructed down the length of the site to Disappointment Slough.

4.12.2 Impact Significance Criteria

Potential significant impacts associated with visual quality have been evaluated using the following criteria:

VIS-a Reduction in scenic quality due to high contrast with existing conditions or elimination of unique landscape features;

VIS-b Introduce physical features which are substantially out of character with existing and planned uses in the surrounding area;

VIS-c Have a substantial, demonstrative negative aesthetic effect;

VIS-d Create substantial sources of light or glare; and

VIS-e Create shade/shadow images that adversely impact existing residential development.

4.12.3 Impacts and Mitigation Measures

The proposed project has been evaluated for potentially significant visual impacts that would be attributable to construction of structures, supporting infrastructure, and major landscaping.

Effects Found Not to Be Significant

Impact VIS-1: The project may reduce the scenic quality due to high contrast with existing conditions or elimination of unique landscape features.

The project site is located in an area that has historically been agricultural in character. The surrounding area, however, is slowing converting to urban uses (e.g. Spanos Park West and the Reserve at Spanos Park). Unique landscape features are not located within the project boundary. The project will complement the adjacent Spanos Park West residential development and the Reserve at Spanos Park. The proposed project will provide continuity to the area by complementing adjacent land uses (**Significance Criterion VIS-a**).

Impact VIS-2: The project may introduce physical features which are substantially out of character with existing and planned uses in the surrounding area.

With the proposed development, topographical features of the site will be retained in a primarily flat or level condition. Riparian habitats associated with Bishop Cut and Disappointment Slough will not be significantly impacted by the proposed project or impacts will be mitigated to less than significant levels. Open space land uses (bike and pedestrian trails) are proposed along the existing levees. These uses provide an appropriate buffer to the more intense urban uses proposed in the project. The project will serve as an extension of Spanos Park West, providing visual continuity to the area. Therefore, the project will not introduce physical features which are substantially out of character with existing or planned uses for the area (**Significance Criterion VIS-b**).

Impact VIS-3: The project may have a substantial, demonstrative negative aesthetic effect.

As indicated in the Project Description (Section 3.3), a Master Development Plan has been prepared as a requirement of the M-X designation. The purpose of the Master Development Plan is to present a framework for project development that ultimately enhances site aesthetics and visual amenities. The site has been planned as an extension of Spanos Park West, thereby creating a positive effect for the area. (**Significance Criterion VIS-c**).

Impact VIS-4: The project may create shade/shadow images that adversely impact existing residential development.

The proposed structures within Westlake Villages will be a maximum of two stories. Due to these height restrictions, the proposed residences will not create shadows that negatively impact SPW. Therefore, **Significance Criterion VIS-e** will not occur.
The following conclusions are made from the above findings:

X Existing and approved development to the east and north of the project site is similar to and consistent with the proposed Westlake Villages project;

X Implementation of the proposed project will include a range of development concepts, standards and regulations and guidelines directed towards an aesthetically enhanced development program which complements Spanos Park West;

X Views into the project site are limited to motorists' views from Eight Mile Road to the north, and Paradise Point Marina to the west. Public views are not available from the south or west.

Potentially Significant Effects

Impact VIS-5: Implementation of the proposed project could result in potentially significant nighttime light, both during and after construction.

After project buildout, there will be several new sources of light during nighttime hours. Glare from residential structures is not expected to be significant due to the traditional use of non-glare materials in construction.

The new light sources may negatively impact wildlife species located within, near, or traveling through the project area. However, due to the proximity of SPW and associated light sources, impacts to wildlife are not expected to be significant.

Most of the new nighttime light sources would be created by street lighting, parking lot lights, and lights from individual residences. While these new light sources are not expected to be significantly different from typical uses in these categories, the change in light conditions from vacant land to urban development will be substantial. Simply stated, the site will have new sources of light where none previously existed.

The Master Development Plan text includes development standards and design guidelines for outdoor lighting and illumination. Implementation of these standards and design guidelines will mitigate the potentially adverse effects of light and glare on the environment. Therefore, the conditions outlined in **Significance Criterion VIS-d** will be avoided. The following mitigation is also required.

Lighting Requirements

All outdoor lighting for the illumination of landscaped areas, buildings, parking areas and pathways shall comply with the standards of the City and the design guidelines included in Chapter Seven of the Master Development Plan. General lighting guidelines are as follows:

a. All lighting fixtures located within Westlake Villages shall conform to Pacific Gas & Electric Company and City of Stockton standards.

b. Photocell monitoring equipment should be installed with all lighting equipment, where feasible, to ensure efficient use of energy and minimize unnecessary "on-time."

c. Site and street lighting should be designed and installed to minimize glare on adjacent properties, buildings, and right-of-way. Additionally, lighting should be installed in such a manner to reduce the effect of ambient lighting and "light pollution."

d. Within the residential areas of the development, lighting should be located at intersections and along streets for safety and security. Street lighting should conform to standards established by the City of Stockton.

e. Light standards' bases should be above grade and all electric service should be located below grade.

f. Lights should blend with the architecture of the buildings and structures, and be complimentary to the street scape design.

g. All lighting shall be reviewed and approved by the Design Review Board.

The following are "Streetscape Lighting Guidelines" presented in the Master Development Plan.

a. Streetlights and traffic signals, as well as other lights in public spaces, should be of simple design.

b. Street lighting throughout Westlake Villages should be consistent on similar streets. All lighting fixtures shall be reviewed and approved by the Design Review Board and the City Engineer.

Mitigation Measure VIS-5a: Mitigation may include prior review and approval of building materials and lighting specifications by the Westlake Design Review Board and City Community Development Director. Downcast lighting should be used where feasible. To ensure compliance with specification set forth by the Westlake Design Review Board and City Community Development Director, the applicant should maintain control over all development within the project site. This can be done through compliance with the Master Development Plan and conditions placed on the covenants, conditions, and restrictions established by the applicant for the development.

Mitigation Measure VIS-5b: Prior to site plan review for development, the applicant shall provide evidence to the Design Review Board that non-reflective building materials will be used. The City's Community Development Director or Site Plan Review Committee shall review and approve building materials and their applications to ensure light and glare effects are minimized.

Implementation of the above listed measure would reduce impacts from glare and lighting to less than significant levels. Consequently, the conditions included in Significance Criterion VIS-d will be avoided.

Impact VIS-6: Implementation of the proposed project will impact views from Eight Mile Road, Paradise Point Marina and Spanos Park West. This would be a potentially significant impact under Significance Criterion VIS-b.

Motorists traveling along Eight Mile Road will have temporary views of the residential development. These views will be consistent with the adjacent Spanos Park West development. Views from within Spanos Park West will be limited to residences along the western edge of that development. These views will also be consistent with the surrounding development.

West of Westlake Villages

The adjacent lands west of the proposed project (across Bishop Cut) are undeveloped and are designated for agricultural use. Since these lands are unoccupied, the visual effects on the agricultural uses are insignificant.

North of Spanos Park West

Visitors to The Reserve at Spanos Park golf course will also have views of the residential development. These views will be consistent with the SPW development and are not considered significant.

The adjacent lands north of the proposed project (across Eight Mile Road) are undeveloped and are designated for agricultural use. Since these lands are unoccupied, the visual effects on the agricultural uses are insignificant.

Landscape Buffers

Landscape buffers are required along the entire project frontage at Eight Mile Road, and on both sides of the arterial and collector streets in Westlake. No buildings or parking areas are allowed within these buffer areas. Monument signs, entry treatments, pathways, lighting, and street furniture are allowed in the buffer area. These buffers are measured from the face of curb to the property line of the adjoining parcel (typically the public right-of-way), and in some cases is expanded by an additional landscaping parcel owned and maintained by the HOA.

Landscape Requirements

a. Landscape plans for all areas intended to be landscaped within a proposed development project other than those for single family residences, shall be prepared by a Landscape Architect licensed by the State of California.

b. The Landscape Plans shall utilize water conserving and drought tolerant plant materials and incorporate Best Management Practices for maintenance and irrigation.

c. Fully-dimensioned landscape plans shall be prepared for all proposed development projects as specified by Chapter Seven of the Master Development Plan.

d. Landscaped buffers and solid barriers shall be used to separate the areas proposed for commercial and public facilities from adjacent residential areas.

e. The landscape plans for all development projects proposed for the Project shall conform to the design guidelines contained in Chapter Seven of this Master Development Plan.

f. Street tree landscape plans shall reflect the tiered hierarchy of the roads and streets in Westlake and shall reinforce the identity and character of the roadway network as defined by this Master Development Plan. The street tree planting scheme shall conform to the plant materials list include in Chapter Seven.

g. All parking areas having five (5) or more spaces shall be screened and include a landscape area of five feet (5') or more along the road or street side property lines not occupied by driveways. Parking area landscape screens shall be a minimum of thirty-six inches (36") in height and a maximum of sixty inches (60") at maturity, constructed of suitable materials as approved by the Design Review Board.

All parking areas, having eight (8) or more spaces shall provide one (1) tree for every eight (8) spaces. Trees installed in such parking areas shall be a minimum of 15-gallon can in size at the time of planting, and shall be placed in tree wells suitable for the species of trees to be installed. All trees planted in Westlake parking areas shall conform to the Plant Palette included in Chapter Seven of this Master Development Plan. All trees planted in parking areas shall be provided with a means for irrigation and maintenance as described in this Master Development Plan.

i. The street tree landscape plan shall identify the species and location of all trees to be planted during the installation of the backbone infrastructure for Westlake. Subsequent development proposals within Westlake shall also be required to include a Street Tree Landscape Plan. These plans shall be subject to the review and approval of the Design Review Board.

j. Landscape Plans for any development in Westlake shall consider service lines, traffic safety sight line requirements, and structures on adjacent properties to avoid conflicts as the landscape elements mature. Street trees and trees planted in landscaped areas near public walkways or street curbs shall be selected and installed to prevent reasonable damage to sidewalks, curbs, gutters, and other public improvements. Tree species with invasive root systems shall not be allowed near water lines or sewer lines. All landscape plans shall be subject to the review and approval of the Design Review Board.

k. Automatic irrigation systems shall be installed in all public areas, rights of way, commercial/office mixed use areas and residential areas. Irrigation Plans shall include low volume spray heads and drip emitters when practical. Irrigation Plans shall be compatible with reclaimed water systems or other water conservation techniques as appropriate.

l. The Plant Palette included in Chapter Seven of this Master Development Plan shall be used to prepare the Landscape Plans for all areas of development within Westlake. Plant materials not included on the palette included in Chapter Seven shall be subject to the review and approval of the Design Review Board.

m. Landscape maintenance practices shall include irrigation at regular intervals necessary to promote plant health, pruning, clearing of debris and weeds, removal and replacement of dead or dying plant materials, and repair and replacement of non-functioning or damaged irrigation equipment. Areas of lawn or ground cover shall be trimmed or mowed on a regular schedule. Fertilization, cultivation and pruning of trees shall be part of the regular maintenance program. Stakes, guy wires, and tree ties shall be checked regularly for proper function and removed once the plant material is established according to the intent of the landscape plans. Ties are to be positioned correctly as necessary to avoid damage to tree trunks or branches.

n. Development projects within Westlake shall include design characteristics of the project that incorporate the concept of "defensible space", such as increased lighting, low-level landscaping to reduce cover for intruders and entrances and windows facing on main access ways.

o. All development plans for projects proposed within Westlake shall be reviewed and approved by the Design Review Board and the Site Plan Review Committee of the City of Stockton. The Master Developer, or his successors in interest, shall implement all crime deterrence measures as required by the City. Compliance with these requirements shall be noted on project building and landscape plans and shall be monitored through site inspection by City staff prior to the issuance of certificates of occupancy.

Landscape Maintenance Requirements

All landscaped areas, view corridor areas, parks and open space areas within Westlake shall be maintained by the Master Developer, by a Commercial Tenant Owner's Association, or, in the absence of a Commercial Tenant Owner's Association, by the City of Stockton through the formation of one or more Landscaping and Maintenance Districts or similar improvement districts, or by any combination of the above.

Equipment and Utility

All utilities that provide service to Westlake shall be placed underground.

a. Equipment and mechanical devices shall not be located in any required setback area or side yard except for electrical, telephone or fiberoptic lines installed by the service provider.

b. Equipment areas shall be screened by structures or landscape materials that are compatible with the architectural character of the building or structure as determined and approved by the Design Review Board.

c. Service areas proposed in marina and commercial uses shall be screened from public view.

d. Storage of recreational vehicles, trailers, boats, or their component parts, loose rubbish, garbage, garbage receptacles, tents, or building materials shall not be allowed within residential villages/neighborhoods if publicly visible. Sport Utility Vehicles are exempted. Within the Marina development, motor vehicles, trailers and boats may be stored in locations that are screened from public view by fences, walls or other devices.

e. Building materials for use on the same premises may be stored on a lot or parcel during the time that a valid permit is in effect for construction on that site.

Implementation of the standards set forth in the Master Development Plan will create a less than significant impact on visual resources.

4.12.4 Level of Significance after Mitigation

The development and design standards outlined in the Master Development Plan provide measures to offset potential visual resource impacts. Implementation of the standards set forth in the Master Development Plan will create a less than significant impact on visual resources.

4.13 CULTURAL RESOURCES

A technical cultural resources study was prepared for this site by LSA Associates, Inc. entitled *A Cultural and Paleontological Resource Study for the Paradise Village Development Project*, September 2003. For confidentially purposes, the document is available for review (by permission) at the City of Stockton, Community Development Department.

4.13.1 Environmental Setting

Cultural Setting

Prehistory

The Stockton area was probably settled by native Californians between 12,000 and 6,000 years ago. The Paleo-Archaic-Emergent cultural sequence developed by Frederickson (1974) is commonly used to interpret the prehistoric occupation of Cental California. The sequence is broken into three broad periods: the Paleoinidan period (10,000-6,000 B.C.); the three-staged Archaic period, consisting of the Lower Archaic (6,000-3,000 B.C.), Middle Archaic (3,000-1,000 B.C.) and Upper Archaic (1,000 B.C.-A.D. 500); and the Emergent period (A.D. 500-1,800).

The Paleo period began with the first entry of people into California. These people probably subsisted mainly on big game, minimally processed plant foods, and had no trade networks. The Archaic Period is characterized by increased use of plant foods, elaboration of burial and grave goods, and increasingly complex trade networks (Bennyhoff and Frederickson, 1994; Moratto, 1984). The Emergent Period is marked by the introduction of the bow and arrow, the ascendence of wealth-linked social status, and the elaboration and expansion of trade networks, signified in part by the appearance of clam disk bead money (Moratto, 1984).

Ethnography

Prior to European contact, the study areas was within the territory of the Northern Valley Yokuts. The population of the eighteenth-century Valley Yokuts is estimated at 40,000, making them the largest ethnic group in precontact California (Moratto, 1984). The territory of the Northern Valley Yokuts extended from a line midway between the Mokelumne River and Calaveras River south to near where the San Joaquin River makes a big bend toward the north. The western limit has been identified as the eastern side of the Coast Ranges (Milliken, 1994), while the eastern limit extended to the juncture of the San Joaquin Plain and the foothills of the Sierra Nevada (Wallace, 1978).

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 and their house above the spring flood levels (Wallace, 1978). The abundant riverine environment promoted a sedentary life and influenced succeeding generations to remain at the same sites. It is estimated that the Yokuts lived in tribes of approximately 300 people (Wallace, 1978) and built several styles of dwellings. Most Yokuts houses were circular or oval single-family dwellings consisting of tule mats over pole frames (Moratto, 1984). Wedge-shaped tule houses and small dwellings made of bark placed against the framework were also constructed (Kroeber, 1925).

Technology of the Yokuts included basket weaving and a wide range of tools and implements fashioned from stone. They used stone mortars and pestles for processing acorns and other plant food. Chert and

jasper were used to make arrow points, scraping tools, and knives along with choppers and hammerstones (Wallace, 1978). Bone was used to make awls and personal adornments and baskets were used for cooking and/or food preparation (Kroeber, 1925).

Acorns were a staple food, and various seeds, nuts, roots, berries, and greens were also collected. The northern Yokuts relied heavily on salmon (Moratto, 1984), but geese, mudhens, and other waterfowl and the eggs of these birds also provided a substantial portion of their diet (Wallace, 1978).

By 1776, Spanish expeditions into the interior and the establishment of the Spanish mission system contributed to the rapid disappearance of the native inhabitants. Introduced diseases claimed thousands of lives and wiped out entire communities of San Joaquin Valley Indians. By 1834, the Mexican government had desecularized the missions and the language and culture of the Yokuts had been permanently disrupted. Many Yokuts left the abandoned missions and returned to their former territories where they survived by hunting and gathering; other worked on ranches as laborers or house servants (Wallace, 1978).

Stockton History

Captain Charles M. Weber purchased the land that would become Stockton from William Gulnac in 1845. Weber changed the name in 1849 in honor of Commodore Robert F. Stockton (Hoover et al., 1990).

During the California Gold Rush, various trails led from Stockton to the gold fields and Weber recognized early that the City would become profitable as a supply and shipping center for gold miners. With the opening of the Southern Mines, Stockton grew rapidly in importance and size, and soon became a flourishing trade center (Marschner, 2000). Miners made their way to Stockton by boat up the San Joaquin River or over the Livermore Pass. Commerce grew and freighting and staging activities developed along with the cattle and agriculture industries. With the establishment of churches and schools, Stockton became a permanent settlement. By 1850, 5,000 people lived in Stockton. The City was incorporated and became the county seat (Hoover et al., 1990). In 1851, Stockton was nearly destroyed by fire. Subsequent fires in 1856 and 1862 resulted in the need for more permanent structures, and stone and brick establishments were built in the commercial district, including a new city hall that was erected in 1852 (Costello and Marvin, 1999).

In the 1860's, the City began making civic improvements that included road construction, street improvements, and sewer works, in addition to building more churches, schools, and volunteer fire companies. By the mid 1860's, residential neighborhoods were also being developed. In the 1880's and 1890's, grain mills and warehouses were constructed, along with manufacturing plants and lumber yards, near the Stockton Channel. More farmlands were developed to provide for the growing population (Costello and Marvin, 1999).

The first inland seaport in California opened in Stockton in 1933 and by the late 1930's, Stockton was known for its boat building industry which included the paddle-wheel steamers the Delta King and Delta Queen that navigated the San Joaquin River from 1850 to 1938. Local shipyards were active during World War II, filling government contracts; by 1943, fifty firms were supplying the wartime effort. The late 1940's saw a growth of residential and commercial areas to the north of Stockton and by the 1970's, the population almost quadrupled (Hillman and Covello, 1985).

Today, with a population of 260,000, Stockton remains the focal point for agribusiness in the San Joaquin Valley. The rich farmland of the San Joaquin/Sacramento River Delta supports varied agriculture, including potatoes, corn, sunflowers, tomatoes, asparagus, and wine grapes. Stockton is also known as a major

transportation hub and a popular water recreation areas that has over 1,000 miles of waterways for boating and water sports.

Delta History

Although provisioning the gold mines contributed to Stockton's early development, it was agriculture that would provide for the City's long term growth and success. Farmers were drawn to the Delta area's fine silt and deep peat soils when the gold rush began to wane. The only obstacle was the over abundance of water.

In 1850, Congress passed the Swamp and Overflow Land Act which gave all states any unsold federal land that was swamp or subject to overflowing. Under the act, states were to ensure that the lands would be drained, reclaimed, and used for agricultural purposes. Delta ownership was passed from the federal government to the state, and by 1855, California had passed the Reclamation District Act providing for the sale of the swamp and overflow lands.

Major attempts to reclaim sections of the Delta did not begin until the completion of the transcontinental railroad in 1869. A ready source of labor became available when the railroad's Chinese labor force found themselves without work. They made their way to the Delta, where they built the first levees around a number of islands. In the late 1870's, the clamshell dredge was invented which soon replaced human labor in building levees.

Reclamation of the Delta tracts was expensive and often the result of cooperative ventures. One such arrangement was between a man named Phillips and George Shima, a successful Japanese American farmer, led to the reclamation of four islands and nine tracts of land, which included the Bishop Tract. Labor camps were built on all tracts and manage by Shima (Maniery and Syda, 1988).

At one time, Shima owned 4,000 acres of land and leased an additional 25,000. He is credited with reclaiming a total of 102,000 acres of land; 62,000 of which were located in the Delta (Maniery and Syda, 1988). Shima's crop of choice was the potato. He used the latest developments in agricultural science and was so successful, he became known as the "Potato King." By 1920, he controlled 85% of California's potato crop and had become the wealthiest Japanese man in California.

By the 1920's, 1,100 miles of levees were protecting 420,000 acres of what may be the most productive farmland in the world. Because of its contribution to California's agricultural development, the Delta levee system is listed in Historic Civil Engineering Landmarks of Sacramento and Northeastern California along with other significant civil engineering achievements, the majority which may be considered Local Historic Civil Engineering Landmarks (American Society of Civil Engineers, 1976).

Agriculture continues to be San Joaquin County's core industry (Locke, 2003). San Joaquin County ranked sixth in agricultural production in 2002. It ranked number one in California in the production of English walnuts, cherries, asparagus, apples, pumpkins, grain corn.

Paleontological Setting

Modesto Formation

The entire project area and vicinity are located on sediments of the Modesto Formation, which fills much of the San Joaquin Valley (Wagner et al., 1987). This formation is comprised of arkosic alluvium deposited in the Late Pleistocene, approximately Rancholabrean in age (between 2 million years and 10,000 years).

Sediments of this age in the area have produced significant vertebrate fossils (Marchand and Allwardt, 1977) as indicated by the fossil locality search conducted by the UCMP. Examples of Rancholabrean vertebrate fossils include turtle, reptile, bird, rodent, horse, ground sloth, dire wolf, sabre-tooth cat, camel, and mammoth (Savage, 1951; Stirton, 1939).

Undifferentiated Early Tertiary Marine Deposits

The sediments of the Modesto Formation are underlain at extreme depths by these Tertiary sediments (Wagner et al., 1987). Little is known about these early marine deposits as they are buried deeply below the surface.

Field Review

A pedestrian field survey was conducted by LSA archaeologists on May 19-21 and June 3-4, 2003. Approximately 85% of the project areas was planted in row crops of corn and tomato. Systematic survey was limited to straight transects of the rows. Cultivated areas were walked in approximately 20-meter-wide transects. In May, the corn was 12 to 18 inches tall and visibility of the ground was approximately 85%. In June, the corn had grown to 5 feet and visibility had diminished to 10%. Dense vegetation obscured visibility along irrigation ditches, but all areas of bare ground adjacent to the irrigation ditches were intensively examined for cultural resources. Areas of bare ground on paved road shoulders, and slopes and sides of levees, and dirt farm roads were also examined for archaeological deposits. Small areas of ground were regularly exposed by trowel, and rodent burrow backdirt was examined for possible archaeological deposits. Thick, five-foot tall clusters of milk thistle, black mustard, and dense grasses limited access to approximately 15% of the project area in an uncultivated section of the southeast portion. This area was only cursorily surveyed as the heavy vegetation limited access and obscured visibility. Documentation included field notes, graphs, maps and photos. The marina at Paradise Point was not surveyed. A paleontological field survey was not conducted.

The constituents of the site are as reported by Napton and Greathouse. The following was observed at the site during the field visit: obsidian, chert, and quartzite flakes and tools; numerous pieces of heat-affected rock; burned bone; a few pieces of shellfish (possibly mussel); a piece of mica; charcoal; and a dark brown, sandy midden soil. The full range of materials as identified by Napton and Greathouse was not noted, but review of the archaeological site was hindered by dense grasses, forbs, berry bushes, and areas of standing water.

Also, the extent of the site is essentially as recorded. There are two maps of the site, one is in the site record (Napton and Greathouse, 1987), the other is in the evaluation report (Napton with Greathouse, 1987). All archaeological deposits and possible archaeological deposits noted during the field review are within an area . . . (confidential location). The areas to the west, north, and east are several feet lower than the area of the (confidential location) and consist of plowed farm fields. To the west and a portion of the north are tan soils readily distinguishable from the darker midden soils; another portion of the farm fields to the north and those to the east were inundated or covered with dense vegetation and could not be readily examined.

One cultural resource was identified in the project area: a 1910's or 1920's historic farm site that was most likely established by George Shima. The site consists of the farm landscape, farm fields, main farm complex which include five structures, a pump house, pumping station, collapsed structure, levee, and irrigation ditches. Since the surveys were conducted, the farm site has been demolished.

A fossil locality search was conducted by the staff at the University of California Museum of Paleontology (UCMP), Berkeley, California, on June 19, 2003. There are no fossil localities located within or adjacent to the Westlake Villages project site; however, two vertebrate fossil localities are within five miles of the project site. These fossils are Pleistocene, between 2 million years and 10,000 years in age, specifically Rancholabrean and coeval with the sediments at the project site. Fossil horses (*Equus* sp.) and mammoths (*Mammuthus* sp.) were found at these two fossil localities.

Consultation with the Native American Heritage Commission (NAHC) did not indicate the presence of Native American cultural resources in the immediate project area. A Native American representative indicated that the site is archaeologically sensitive. Consultation with the Haggin Museum indicated that a flexed burial site has been identified on the Shima Tract and any high areas on the project site could be burial grounds or occupation sites.

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 effect known and unknown resources with cultural significance.

The farm identified during the field survey has been removed from the site. Therefore, construction activities will not impact the previously identified structures. However, artifacts associated with these structures and era may exist below the surface.

In addition, although paleontological resources were not identified on the site, two vertebrate fossil localities have been identified within five miles of the project site and contain the same geological formations as the project site. Consultation with Native American representatives and the Haggin Museum indicate that the site is archeologically sensitive and could be the site of human burials or occupation. (**Significance Criteria CR-a** through **CR-d**).

Mitigation Measure CR-1a: Project personnel should not collect or move any archaeological material. Fill soils that may be used for construction purposes should not contain archaeological materials.

Mitigation Measure CR-1b: If deposits of prehistoric or historic archaeological materials are encountered during the project activities, all work within 50 feet of the discovery should be redirected and a qualified archaeologist contacted to evaluate the finds and make recommendations. It is recommended that such deposits be avoided by project activities. If such deposits cannot be avoided, they should be evaluated for their significant in accordance with the California Register. If the resources are not significant, further protection is not necessary. If the resources are significant, they will need to be avoided by adverse effects or such effects must be mitigated. Upon the completion of the archaeological evaluation, a report should be prepared documenting the methods, results, and recommendations. The report should be submitted to the Central California Information Center and appropriate City agencies.

Prehistoric materials can include flaked-stone tools (e.g., projectile points, knifes, choppers) or obsidian, chert, or quartzite toolmaking debris; cultural darkened soil (i.e., midden soil often containing heat affected rock, ash and charcoal, shellfish remains, and cultural materials); and stone milling equipment (e.g., mortars, pestles, handstones). Historical materials might include wood, stone, concrete, or adobe footings, walls and other structural remains; filled wells or privies; and deposits of wood, metal, glass, ceramics, and other refuse.

Mitigation Measure CR-1c: During grading of other invasive site construction activities, the contractor shall comply with Section 7050.5 of the California Health and Safety Code. The code states that in the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of the County in which the human remains are discovered has determined whether or not the remains are subject to the coroner's authority. If human remains are encountered, work should halt within 50 feet of the find and the County Coroner notified immediately. The contractor shall also immediately notify the Community Development Director and the Secretary of the Cultural Heritage Board. At the same time, an archaeologist should be contacted to evaluate the situation. If the human remains are of Native American origin, the Coroner must notify the Native American Heritage Commission with 24 hours of this identification. The Native American Heritage Commission will identify a Native American Most

Likely Descendent to inspect the site and provide recommendations for the proper treatment of the remains and associated grave goods.

Mitigation Measure CR-1d: If paleontological resources are identified within the project area, all work within 50 feet of the discovery should be redirected and a qualified paleontologist should be contacted to evaluate the finds and make recommendations. If the paleontological resources are found to be significant, they should be avoided by project activities. If avoidance is not feasible, adverse effects to such resources should be mitigated. Upon completion of the paleontological evaluation, a report should be prepared documenting the methods, results, and recommendations. The report should be submitted to the UCMP and appropriate City agencies.

Because the farmhouse and associated structures have been removed, impacts to this resource will not occur. Implementation of the mitigation measures will mitigate impacts to unknown cultural or paleontological resources.

4.13.4 Level of Significance after Mitigation

Implementation of mitigation measures will mitigate impacts to unknown cultural or paleontological resources.

4.14 HAZARDOUS MATERIALS/WASTES

4.14.1 Environmental Setting

A visual site survey was conducted for the project site on June 11, 2004. Two major areas were identified as containing improperly stored and/or disposed hazardous materials and wastes. The first site is located at the southeastern corner of the Spanos Parcel. This site appears to be a staging area for agricultural operations. A number of 50 gallon drums containing hydraulic fluid and oil are located at this site. These items do not appear to be properly stored (e.g. on concrete pads or within an enclosure). A used oil filter was also discarded at this site. Surface staining was observed in association with the used oil filter. The second site is located at the historic homestead, adjacent to Disappointment Slough. A number of empty, overturned 50 gallon drums were observed. These drums were labeled as herbicides. An abandoned tractor was located near the homestead with what appeared to be empty containers of pesticides. Empty quarts of oil were observed along the irrigation channels and empty fertilizer bags were located throughout the site. Trash was also observed along the eastern boundary of the project site (adjacent to SPW) in the fallow field.

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 J.

4.14.2 Impact Significance Criteria

HAZ-1 Development of the project would create a substantial hazard to the public or environment due to the release of hazardous materials or wastes.

4.14.3 Impacts and Mitigation Measures

Potentially Significant Effects.

Impact HAZ-1: Due to the existing conditions of the site, the environment and construction workers could be exposed to hazardous wastes and materials.

The government records search did not identify any major spills or accidents on the site or project vicinity. However, during the visual survey, hazardous materials were observed on the project site. These materials did not appear to be properly stored. Surface staining was observed in proximity to improperly disposed oil filters. Based on these observations, there is the potential that these hazardous materials/wastes have impacted the project site. Mitigation is provided below to offset potential impacts to the environment and construction workers.

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-1a: 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. The SPCP 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.

Mitigation Measures HAZ-1b: All hazardous wastes and materials that exist on the project site will be removed. Testing will be conducted in the vicinity to any observed surface staining. This testing will be conducted to determine the extent, if any, of hazardous materials/waste releases. The cleanup and testing procedures and requirements will be coordinated with and approved by the City.

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

At one time, the City considered expanding its planning area to encompass some of the predominantly agricultural lands north of Eight Mile Road. The City prepared an EIR on the Special Planning Area Study. In 1993, the City's Planning Commission considered, but did not certify, the Final EIR and rejected the SPAS General Plan Amendment. Any extension of the City's boundaries north of Eight Mile Road would require the City to re-evaluate the impacts of this action and reconsider its previous decision.

The City's General Plan acknowledges that this area of northern Stockton is a growth area and has set into motion the service and infrastructure requirements necessary to accommodate growth. This effort is being conducted independent of the proposed project plans. For this reason, the project is not considered growth inducing to lands north of Eight Mile Road.

The proposed project will, however, facilitate the conversion of agricultural lands on the Spanos Parcel. The General Plan Amendment for the Spanos Parcel to Low-Medium Density Residential will facilitate the conversion of existing onsite agricultural land uses. Additionally, the incompatibility of the agricultural land uses on the Spanos Parcel and the proposed project will likely hasten this conversion. The infrastructure design outlined in the Master Development Plan also facilitates the extension of utilities and services to the Spanos Parcel, thereby accelerating land use conversion.

CHAPTER 6.0 ALTERNATIVES

CEQA requires that an EIR include a discussion of reasonable project alternatives that are "capable of eliminating any significant adverse environmental effects or reducing them to a level of insignificance, even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly" (CEQA Section 15126 (d)(3)).

Additionally, the CEQA Guidelines, Section 15126 (d), state, "If the environmentally superior alternative is the 'no project' alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives."

Section 6.3 discussed impacts of each of the project alternatives. For each alternative, the alternative is described, a discussion of environmental impacts associated with that alternative is provided, and the responsiveness of each alternative to the project objectives is analyzed. Table 6.1.A provides a comparative summary of impacts associated with each alternative.

6.1 PROJECT OBJECTIVES

The overall goal for the Westlake Villages project is to construct a quality residential development that offers opportunities to live and work within a planned community setting. Further, it is the goal of the applicant to implement an active adult community by providing a community with multiple on-site amenities.

The project applicant's objectives for the proposed project include:

X The primary goal is to create a community designed to enhance social interaction. To design and develop a community at a human scale, with neighborhoods diverse in use and population. To introduce ample common ground into the development; parks, trails, lakes, and large community centers functioning as gathering places for the future residents and enhancing project livability.

X Westlake Villages would provide an opportunity to develop Paradise Point Marina with a mix of upscale commercial and service-oriented businesses, promoting the highest quality development. The project would place a significant number of potential customers within walking distance of these businesses to help ensure in their long-term viability.

X The goal for the residential component of Westlake Villages is to build a unique community combining the best of modern suburban development practices with the building types and styles of traditional neighborhoods. To create a safe, secure environment with walkable neighborhoods that meet 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 car, to promote and enhance the pedestrian experience.

X Westlake Villages would promote open space within neighborhoods to provide a convenient and safe destination for children to play and families to congregate. To develop a system of lakes that provide scenic vistas, and recreation opportunities, that would also be utilized for enhancing the environment and improving water quality. Open space would also include a system of trails that

would be available to the public, providing accessibility, recreation opportunities, and a visual amenity enjoyed by the entire community.

Table 6.1.A: Alternatives Matrix

ISSUE AREA	ALTERNATIVE 1 - NO PROJECT	ALTERNATIVE 2 - MINIMUM DENSITY	ALTERNATIVE 3 - ALL CONVENTIONAL
Geology and Soils	less	same	same
Air Resources	less	less	more
Water Resources	less	same	same
Biological Resources	less	same	same
Noise	less	same	same
Land Use	less	similar	same
Traffic and Circulation	less	similar	similar
Population, Housing, and Socioeconomics	less	similar	more
Public Services	less	less	more
Water Supply Assessment	less	similar	more
Utilities and Service Systems	less	similar	more
Aesthetics/Light and Glare	less	same	same
Cultural Resources	less	same	same
Hazardous Materials/Wastes	more	same	same
Reduces Significant Effects of the Project	yes	yes	no
Meet Project Objectives:			
The primary goal is to create a community designed to enhance social interaction. To design and develop a community at a human scale, with neighborhoods diverse in use and population. To introduce ample common ground into the development; parks, trails, lakes, and large community centers functioning as gathering places for the future residents and enhancing project livability.	No	Yes	Yes
Westlake Villages would provide an opportunity to develop Paradise Point Marina with a mix of upscale commercial and service-oriented businesses, promoting the highest quality development. The project would place a significant number of potential customers within walking distance of these businesses to help ensure in their long-term viability.	No	Yes	Yes
The goal for the residential component of Westlake Villages is to build a unique community combining the best of modern suburban development practices with the building types and styles of traditional neighborhoods. To create a safe, secure environment with walkable neighborhoods that meet 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 car, to promote and enhance the pedestrian experience.	No	Yes	No
Westlake Villages would promote open space within neighborhoods to provide a convenient and safe destination for children to play and families to congregate. To develop a system of lakes that provide scenic vistas, recreation opportunities, that would also be utilized for enhancing the environment and improving water quality. Open space would also include a system of trails that would be available to the public, providing accessibility, recreation opportunities, and a visual amenity enjoyed by the entire community.	No	Yes	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 six significant and unavoidable impacts that will occur from the proposed Westlake Villages project. These include the following:

- $ Total emissions of the proposed project would be higher than the 10 tons/year thresholds for ROG and established by the SJVAPCD. No feasible mitigation is available to offset this impact. Cumulative fugitive dust issues will also be significant and unavoidable.
- $ Impacts on community and neighborhood park land shortages.
- $ Incompatibility with surrounding land uses and conflicts with General Plan policies.
- $ All cumulative traffic related impacts cannot be mitigated.
- $ Unanticipated population growth in an undeveloped area.

6.3 ALTERNATIVES CONSIDERED

The following alternatives to the proposed project are considered in this DEIR:

- $ Alternative 1 - No Project Alternative
- $ Alternative 2 - Minimum Residential Density
- $ Alternative 3 - All Conventional Housing

Alternative 1: No Project Alternative

The CEQA-required No Project Alternative would retain the site in its current condition, namely agricultural and fallow lands. With this alternative, no further site improvement activity would occur. No development would occur on site and current General Plan land use and zoning designations would remain in place.

Geology and Soils

Implementation of the No Project Alternative would not affect the geophysical conditions associated with the site. Similarly, the geophysical conditions of the site would not adversely affect the site's agricultural/ open space uses (i.e., seismic and other geophysical concerns would not be hazardous to site uses).

Generally, the soils on the project site are capable of accommodating the proposed project. Engineering techniques will be required, however, to mitigate impacts from expansive soils and high ground water levels. Therefore, the No Project Alternative does presents advantages regarding geology and soils and is an environmentally superior to the proposed project.

Comparable Impacts: Less than the Proposed Project
Reduces Significant Impact: No

Air Resources.

The No Project Alternative would not require any site improvements or construction, nor create any new uses that generate stationary and mobile source emissions. Therefore, the No Project Alternative would not further contribute to air quality exceedances or adversely affect the County's attainment status. It should be noted that the existing exposed earth conditions could have an effect on air quality from dust emissions due to long-term soil exposure to wind erosion.

Total emissions of the proposed project would be higher than thresholds established by the SJVAPCD for ROG. Similarly, on a cumulative basis, the project generates fugitive dust and emissions during construction.

Since the No Project Alternative does not have long-term impacts on air quality, this alternative is considered environmentally superior when compared with the proposed project.

Comparable Impacts: Less than the Proposed Project
Reduces Significant Impacts: Yes

Water Resources

The No Project Alternative would not change the surface or subsurface water resources associated with the site or the region. Groundwater resources have been 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.

Implementation of the proposed project will result in changes to the subsurface water resources. High water table conditions on the project site complicate earthwork, site development, and lake construction. To resolve the high water table issues, dewatering will be required resulting in the lowering of the water table sufficient to prepare the site for development. Waters removed from the subsurface will be pumped into Disappointment Slough during construction. The geotechnical study prepared for the project recommends installing a permanent dewatering system to ensure that localized onsite flooding does not occur. It is likely that these dewatering activities would permanently lower water table elevations as experienced at SPW.

Project development will change surface water resources. Increases in runoff are expected due to changes to the hydrology and watershed. The No Project alternative would retain existing conditions for surface and ground water 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 that are 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 undeveloped, agricultural conditions with limited biological habitat value. Although existing conditions on the project site provide limited habitat value, a number of special status species have the potential to or are known to occur on the project site. The proposed project would eliminate habitat for these species. Payment of fees for the loss of habitat and compliance with applicable laws and permitting requirements would reduce these impacts to less than significant levels.

Although impacts to biological resources will be less than significant with the proposed project, the No Project alternative will not eliminate potential habitat. For this reason, the No Project alternative is considered more advantageous regarding the impacts on biological resources and therefore is considered environmentally superior.

Comparable Impacts: Less than the Proposed Project
Reduces Significant Impacts: No

Noise

Noise conditions on the project site would remain at current levels for the No Project alternative. Therefore, the site conditions would not contribute towards any local noise level increases.

Implementation of the proposed project will introduce stationary and mobile noise sources that will cause incremental increases in noise levels. However, none of the increases will exceed City noise standards for existing sensitive receptors, and are not considered significant. Within the project, noise effects can be mitigated for residential uses along Eight Mile Road.

All noise-related impacts can be mitigated for the Proposed Project, however, the ambient noise environment will increase through project implementation. Therefore, the No Project Alternative presents an 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 project site would not be annexed within the City's boundaries. The existing County General Plan land use and zoning designations would remain in place (General Agriculture/ AG-40 and Commercial-Recreation/C-R). Current agricultural land uses on site would remain unchanged.

The No Project Alternative would be considered compatible with most adjacent uses, excepting Spanos Park West. The existing on site land uses do not conflict with the City's General Plan policies and guidelines.

Consequently, the No Project Alternative presents advantages when compared with the proposed project and is considered environmentally superior with respect to land use conditions.

Comparable Impacts: Less than the Proposed Project
Reduces Significant Impacts: Yes

Traffic and Circulation

No off-site traffic impacts would occur from this alternative, although the deficiencies identified in the Existing Plus Approved Projects and Cumulative Without Project scenarios would still occur.

With the proposed project, the project uses would generate traffic that would affect peak hour traffic conditions and intersection congestion, along surrounding roadways and intersections. However, these traffic impacts are mitigable.

Although the proposed project does not adversely affect levels of service and congestion (after mitigation), the No Project Alternative is considered advantageous when compared with the proposed project and, therefore, is environmentally superior.

Table 6.3.A: Project Alternatives Mitigation Summary

IMPACT	DESCRIPTION	NO PROJECT
TRAF 1	Potential for unacceptable intersection operations – Existing Plus Approved Project Plus Project Scenario	No Mitigation Required
TRAF 2	Potential for unacceptable interchange operations – Existing Plus Approved Project Plus Project Scenario	No Mitigation Required
TRAF 3	Potential for Unacceptable Operations at Site Access Intersections	No Mitigation Required
TRAF 4	The proposed project would result in unacceptable service levels at the Eight Mile Road/I-5 interchange.	No Mitigation Required
TRAF 5	Potential for unacceptable interchange operations – Cumulative Conditions	No Mitigation Required
TRAF 6	Inconsistencies with the Eight Mile Road Specific Plan	No Mitigation Required
TRAF 7	Potential for Increase in Transit Demand	No Mitigation Required
TRAF 8	Potential to Conflict with General Plan Policies – Non-Motorized Transportation	No Mitigation Required
TRAF 9	Potential for Inadequate Site Access	No Mitigation Required
TRAF 10	Potential for Inadequate Elementary School Circulation.	No Mitigation Required
TRAF 11	Potential for Lack of Adequate Parking at Marina Site	No Mitigation Required

Source: Fehr & Peers, 2003

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 unexpected population growth, which will create impacts to public services, traffic, etc. In light of these impacts, the No Project Alternative is considered advantageous when compared with the proposed project and, therefore, is environmentally superior.

Comparable Impacts: Less than the Proposed Project
Reduces Significant Impacts: Yes

Public Services

The No Project Alternative will not require an increase in public services to serve the project site. Current service levels would remain unaffected, and the demand for services would remain at current levels.

The proposed project will require an increase in public services due to the increase in population. The proposed project does not provide adequate parklands based on City standards. Feasible mitigation does not exist to offset impacts to parklands, creating a significant, unavoidable impact. Therefore, 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: Yes

Water Supply Assessment

The No Project alternative will not consume additional water supplies. The proposed project will create additional demands on water consumption. A majority of the utility requirements of the proposed project can be provided within the forecasted infrastructure. In addition, the project does not require lengthy extension of infrastructure or service lines to serve the site. These systems will be extended from SPW and are available to serve the site. The No Project alterative will not require additional water supplies, therefore, the No Project alterative is considered advantageous and is environmentally superior.

Comparable Impacts: Less than the Proposed Project
Reduces Significant Impacts: Yes

Utilities and Service Systems

The No Project Alternative will not require the extension of utilities or service systems to serve the site. Similarly, the No Project alternative will not require treatment of wastewater. The No Project alternative will not affect other public utilities, including telephone, electricity, and cable television services.

The proposed project will generate sewage for treatment at the wastewater treatment plant. A majority of the utility requirements of the proposed project can be provided within the forecasted infrastructure. In addition, the project does not require lengthy extension of infrastructure or service lines to serve the site. These systems will be extended from SPW 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 and light and glare conditions will remain unchanged with the No Project Alternative. The current agricultural uses on the site would be retained. The site will continue to be absent of light and glare.

With the proposed project, the aesthetic character will be substantially changed to reflect conditions associated with an intense residential subdivision. The project is designed to complement the adjacent SPW development and therefore, impacts are not considered to be significant.

Night-time light will increase as the site is developed with new residential uses. However, the lighting associated with the residences will be mitigated and reduced through the Master Development Plan concepts.

Although impacts to visual resources created by the proposed project will be mitigated, the No Project alternative presents significant advantages over the proposed project and is considered environmentally superior.

Comparable Impacts: Less than the Proposed Project
Reduces Significant Impacts: Yes

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: Yes
Hazardous Materials/Wastes

Under the No Project Alternative, existing hazardous materials and wastes that are located on site would not be removed and would present potential hazards to the public and environment. As part of the proposed project, the materials will need to be removed from the site and disposed at an appropriate facility that handles hazardous materials/wastes.

Development of the project will improve site conditions with respect to hazardous materials/wastes therefore, the No Project Alternative is not considered advantageous and is not environmentally superior.

Comparable Impacts: More than the Proposed Project
Reduces Significant Impacts: No

Conclusion

The proposed project has significant impacts with respect to air quality, land use, public services, population, and traffic. These impacts are avoided with the No Project Alternative due to the absence of development. With the proposed project, impacts for most other environmental issue areas are either less than significant or can be adequately mitigated. For these areas, the No Project alternative often presents reduced levels of impact. Development of the proposed project will improve conditions relating to hazardous materials/wastes. The No Project alternative is considered an environmentally superior alternative.

Alternative 2: Minimum Residential Density

The minimum residential density alternative would consist of 501 fewer conventional single-family homes and 202 fewer Active Adult residences than the proposed project. All other project uses would remain the same.

Geology and Soils

Implementation of the Minimum Density alternative would create the same geophysical issues as the proposed project. Like the proposed project, structures proposed for Minimum 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 Minimum Density alterative.

With appropriate measures, geophysical conditions present on site are capable of accommodating the proposed project and the Minimum Density alternative. Since there are no geophysical conditions that cannot be mitigated, the Minimum Density alternative does not present any advantages regarding geophysical resources, therefore, is not considered environmentally superior to the proposed project.

Comparable Impacts: Same as the Proposed Project
Reduces Significant Impacts: No

Air Resources

Construction of the project at lower densities would result in 4,470 fewer daily trips, 373 fewer AM and 411 fewer PM peak hour trips, as shown in Table 6.3.B. The reduced number of vehicle trips will likely generate lower levels of pollutants when compared to the Proposed Project. The Minimum Density alternative would result in similar levels of pollutants generated on site during construction due to complete site development.

Under the Minimum Density alternative, the decreased number of vehicles and vehicle trips will reduce the pollutants emitted by operation of project. As such, the Minimum 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 Minimum Density alternative would require the same measures in preparing and maintaining the project site. Under the Minimum Density alterative, onsite lakes would be created, the site would be permanently dewatered, and storm water would be discharged to Disappointment Slough. These measures 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

Biological Resources

Implementation of the Minimum Density alternative would require the same measures in preparing and maintaining the project site. Under the Minimum Density alterative, the site would be graded, drainage canals would be filled, and storm water would be discharged to Disappointment Slough. These measures 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 Minimum Density alternative would require the same measures to prepare and operate the site. Although the number of vehicles and trips on project roadways would be decreased under this alternative, mitigation would still be necessary to offset noise impacts for homes along Eight Mile Road. It is expected that the same mitigation measures would be required for the Minimum Density alternative. 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

Land Use

Implementation of the Minimum Density alternative would require the same measures to prepare and operate the site. A General Plan amendment and rezoning would be necessary to annex the project site to within the City's boundary. Agricultural land would be lost and high-density housing would not be provided. These impacts 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: Similar to the Proposed Project
Reduces Significant Impacts: No

Traffic and Circulation

Construction of the project at lower densities would result in 4,470 fewer daily trips, 373 fewer AM and 411 fewer PM peak hour trips, as shown in Table 6.3.B.

In the Existing Plus Approved Project Plus Minimum Density scenario, the deficient intersections identified with the addition of project traffic would remain inadequate. All project impacts identified in the Cumulative scenario would remain significant. No additional impacts would occur with development of the Minimum Density alternative. The mitigation measures developed to address the significant off-site traffic impacts of the proposed project would also mitigate impacts for the Minimum Density Alternative, as shown in Table 6.3.C.

Comparable Impacts: Similar to the Proposed Project
Reduces Significant Impacts: No

Table 6.3.B: Minimum Density Trip Generation Summary [1]

		DAILY	AM PEAK HOUR			PM PEAK HOUR		
UNITS	LAND USE	TRIPS	INBOUND	OUTBOUND	TOTAL	INBOUND	OUTBOUND	TOTAL
Minimum Density Alternative								
700	Student Elementary School	710	120	83	203	84	98	182
1,660	Single Family Homes	13,740	293	878	1,171	864	486	1,350
666	Active Adult Residences	2,800	79	141	220	188	105	293
	Residential Subtotal	16,540	372	1,019	1,391	1,052	591	1,643
97,357	Square Feet General Office	1,300	161	22	183	32	156	188
97,357	Square Feet Retail	6,700	61	39	100	296	321	617
	Commercial Subtotal	8,000	222	61	283	328	477	805
	Less Internal Trips							
501	Elementary School Students[2]	510	86	59	145	60	70	130
	To Commercial (25%)	2,000	56	15	71	82	119	201
	From Residential	2,000	15	56	71	119	82	201
	Net New Trips	20,740	557	1,033	1,591	1,203	895	2,098
Proposed Project								
	Net New Trips[3]	25,210	643	1,321	1,964	1,473	1,036	2,509

Source: Fehr & Peers, 2003.

Notes:[1] Trip generation rates presented in Table 4.7.M.

[2] Elementary School Students residing in Westlake Villages would decrease with fewer conventional single family homes.

[3] Detailed project trip generation presented in Table 4.7.M

Table 6.3.C: Minimum Density Alternative Mitigation Summary

IMPACT	DESCRIPTION	MINIMUM DENSITY
TRAF 1	Potential for unacceptable intersection operations – Existing Plus Approved Project Plus Project Scenario	Less than significant after mitigation.
TRAF 2	Potential for unacceptable interchange operations – Existing Plus Approved Project Plus Project Scenario	Less than significant after mitigation.
TRAF 3	Potential for Unacceptable Operations at Site Access Inter-sections	Less than significant after mitigation.
TRAF 4	Potential for unacceptable intersection operations – Cumulative Conditions	Less than significant after mitigation.
TRAF 5	Potential for unacceptable interchange operations – Cumulative Conditions	No feasible mitigation.
TRAF 6	Inconsistencies with the Eight Mile Road Specific Plan	Less than significant after mitigation.
TRAF 7	Potential for Increase in Transit Demand	Less than significant after mitigation.
TRAF 8	Potential to Conflict with General Plan Policies – Non-Motorized Transportation	Less than significant after mitigation.
TRAF 9	Potential for Inadequate Site Access	Less than significant after mitigation.
TRAF 10	Potential for Inadequate Elementary School Circulation.	Less than significant after mitigation.
TRAF 11	Potential for Lack of Adequate Parking at Marina Site	Less than significant after mitigation.

Source: Fehr & Peers, 2003

Population, Housing, and Socioeconomics

The Minimum Density alternative would add 6,485 individuals to the population. This represents 1,972 fewer individuals that the Proposed Project, however, the population growth would still be significant and unexpected. Additionally, the Minimum Density alternative would not provide any affordable, high density housing which is in conflict with City policies. For these reasons, the Minimum Density alternative has similar impacts to the Proposed Project and is not environmentally superior.

Comparable Impacts: Similar to the Proposed Project
Reduces Significant Impacts: No

Public Services

The project will add 1,972 fewer individuals to the population than the proposed project. Demand for fire, police, parklands, and library services would be reduced accordingly. Based on City standards, the Minimum Density alternative would require 13 acres of community parks and 6.5 acres of neighborhood parks. The Minimum Density alternative would be 0.7-acres deficient in community parklands. The minimum size acreage of the neighborhood parks would not comply with City standards.

The Minimum Density alternative provides advantages for public services when compared with the Proposed Project due to less demand on libraries, parklands, police and fire. For these reasons, the Minimum Density alternative is environmentally superior.

Comparable Impacts: Less than the Proposed Project
Reduces Significant Impacts: Yes

Water Supply Assessment

If the project is approved within 24 months, the Water Supply Assessment indicates that water supplies will be available to serve the proposed project. This impact would be the same for the Minimum Density alternative, therefore, the Minimum Density alternative is not environmentally superior to the proposed project.

Comparable Impacts: Same to the Proposed Project
Reduces Significant Impacts: No

Utilities and Service Systems

Under the Minimum Density alternative, the demand for utilities would be decreased, however, the Minimum 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 Minimum Density alternative would change the undeveloped, agricultural nature of the site to a developed, urban condition. The Minimum Density alternative would create similar light and shadow conditions when compared with the project. Therefore, the Minimum Density alternative is not considered advantageous for aesthetics and light/glare when compared with the Proposed Project and is not environmentally superior.

Comparable Impacts: Same as the Proposed Project
Reduces Significant Impacts: No

Cultural Resources

Development of the site with the Minimum Density alternative would create the same impact to cultural resources. Therefore, this alternative is not considered advantageous with respect to cultural resources when compared with the proposed project and is not environmentally superior.

Comparable Impacts: Same as the Proposed Project
Reduces Significant Impacts: No

Hazardous Materials/Wastes

The same conditions exist for the Minimum Density Alternative as the proposed project. The site would need to be cleared of all potentially hazardous wastes and materials. As part of the proposed project, the materials will need to be removed from the site and disposed at an appropriate facility that handles hazardous materials/wastes.

Development of the Minimum Density Alternative will present the same conditions as the proposed project and is not considered advantageous and is not environmentally superior.

Comparable Impacts: Same as the Proposed Project
Reduces Significant Impacts: No

Conclusion

The Minimum Density alternative would have fewer significant impacts that the Proposed Project. Impacts to public services would be reduced due to fewer individuals and vehicles generated under this alternative. The severity of impacts to air quality, land use, traffic, and population, while similar to the Proposed Project, will likely be reduced. Overall the Minimum Density alternative is an environmentally superior alternative due to decreased impacts to air quality and public services.

Alternative 3: All Conventional Housing

The All Conventional Housing alternative would replace Active Adult housing with conventional housing. This alternative would construct a maximum of 2,994 single-family homes. All other project uses would remain the same.

Geology and Soils

Implementation of the All Conventional alternative would create the same geophysical issues as the proposed project. Like the proposed project, structures proposed for the All Conventional alternative would have to meet building standards for the region. Engineering techniques required for the proposed project to offset impacts of expansive soils and high water table elevations would also be necessary for the All Conventional alterative.

With appropriate measures, geophysical conditions present on site are capable of accommodating the proposed project and the All Conventional alternative. Since there are no geophysical conditions that cannot be mitigated, the All Conventional alternative does not present any advantages regarding geophysical resources, therefore, is not considered environmentally superior to the proposed project.

Comparable Impacts: Same as the Proposed Project
Reduces Significant Impacts: No

Air Resources

The All Conventional housing alternative would replace Active Adult housing with conventional housing although the total number of units would be equivalent to the Proposed Project. This alternative would construct a maximum of 2,994 single-family homes, resulting in an additional 3,150 daily trips, 486 AM and 372 PM peak hour trips as shown in Table 6.3.D. The increased number of vehicle trips will likely generate higher levels of pollutants when compared to the Proposed Project. The All Conventional alternative would result in equivalent levels of pollutants generated on site during construction when compared to the project.

Under the All Conventional alternative, the increased number of vehicles and vehicle trips will increase the pollutants emitted by operation of project. As such, the All Conventional 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 All Conventional alternative would require the same measures in preparing and maintaining the project site. Under the All Conventional alterative, onsite lakes would be created, the site would be permanently dewatered, and storm water would be discharged to Disappointment Slough. These measures are the same under the Proposed Project. Therefore, the All Conventional alternative is not considered advantageous to the Proposed Project and is not environmentally superior.

Comparable Impacts: Same as the Proposed Project
Reduces Significant Impacts: No

Biological Resources

Implementation of the All Conventional alternative would require the same measures in preparing and maintaining the project site. Under the All Conventional alterative, the site would be graded, drainage canals would be filled, and storm water would be discharged to Disappointment Slough. These measures are the same under the Proposed Project. Therefore, the All Conventional alternative is not considered advantageous to the Proposed Project and is not environmentally superior.

Comparable Impacts: Same as the Proposed Project
Reduces Significant Impacts: No

Noise

Implementation of the All Conventional alternative would require the same measures to prepare and operate the site. Although the number of vehicles and trips on project roadways would be increased under this alternative, the same mitigation would be necessary to offset noise impacts for homes along Eight Mile Road. It is expected that the same mitigation measures would be required for the All Conventional alternative. Therefore, the All Conventional alternative is not considered advantageous to the Proposed Project and is not environmentally superior.

Comparable Impacts: Same as the Proposed Project
Reduces Significant Impacts: No

Land Use

Implementation of the All Conventional alternative would require the same measures to prepare and operate the site. A General Plan amendment and rezoning would be necessary to annex the project site to within the City's boundary. Agricultural land would be lost and high-density housing would not be constructed. These impacts are the same under the Proposed Project. Therefore, the All Conventional 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

Traffic and Circulation

This alternative would construct a maximum of 2,994 single-family homes, resulting in an additional 3,150 daily trips, 486 AM and 372 PM peak hour trips as shown in Table 6.3.D.

In the Existing Plus Approved Project Plus Conventional Housing scenario, the deficient intersections identified with the addition of traffic from the proposed project would remain deficient and no additional impacts were identified. All project impacts identified in the Cumulative scenario would remain significant. No additional cumulative impacts were identified for the All Conventional alternative. Additionally, mitigation measures developed to address significant off-site traffic impacts of the proposed project would also mitigate impacts of the All Conventional alternative, as shown in Table 6.3.E.

Comparable Impacts: Same as the Proposed Project
Reduces Significant Impacts: No

Table 6.3.D: All Conventional Alternative Trip Generation Summary [1]

		DAILY	AM PEAK HOUR			PM PEAK HOUR		
UNITS	LAND USE	TRIPS	INBOUND	OUTBOUND	TOTAL	INBOUND	OUTBOUND	TOTAL
All Conventional Housing								
700	Student Elementary School	710	120	83	203	84	98	182
2,994	Single Family Homes	23,650	526	1,579	2,105	1,469	827	2,296
	Residential Subtotal	*24,360*	*646*	*1,662*	*2,308*	*1,553*	*925*	*2,478*
97,357	Square Feet General Office	1,300	161	22	183	32	156	188
97,357	Square Feet Retail	6,700	61	39	100	296	321	617
	Commercial Subtotal	*8,000*	*222*	*61*	*283*	*328*	*477*	*805*
	Less Internal Trips							
700	Elementary School Students[2]	710	120	83	203	84	98	182
	To Commercial (25%)	2,000	56	15	71	82	119	201
	From Residential	2,000	15	56	71	119	82	201
	Net New Trips	**28,360**	**797**	**1,652**	**2,450**	**1,680**	**1,201**	**2,881**
Proposed Project								
	Net New Trips[3]	**25,210**	**643**	**1,321**	**1,964**	**1,473**	**1,036**	**2,509**

Source: Fehr & Peers, 2003.

Notes: [1] Trip generation rates presented in Table 4.7.M.

[2] Elementary School Students residing in Westlake Villages would increase with more conventional single family homes.

[3] Detailed project trip generation presented in Table 4.7.M.

Table 6.3.E: Project Alternatives Mitigation Summary

IMPACT	DESCRIPTION	ALL CONVENTIONAL HOUSING
TRAF 1	Potential for unacceptable intersection operations – Existing Plus Approved Project Plus Project Scenario	Less than significant after mitigation.
TRAF 2	Potential for unacceptable interchange operations – Existing Plus Approved Project Plus Project Scenario	Less than significant after mitigation.
TRAF 3	Potential for Unacceptable Operations at Site Access Inter-sections	Less than significant after mitigation.
TRAF 4	Potential for unacceptable intersection operations – Cumulative Conditions	Less than significant after mitigation.
TRAF 5	Potential for unacceptable interchange operations – Cumulative Conditions	No feasible mitigation.
TRAF 6	Inconsistencies with the Eight Mile Road Specific Plan	Less than significant after mitigation.
TRAF 7	Potential for Increase in Transit Demand	Less than significant after mitigation.
TRAF 8	Potential to Conflict with General Plan Policies – Non-Motorized Transportation	Less than significant after mitigation.
TRAF 9	Potential for Inadequate Site Access	Less than significant after mitigation.
TRAF 10	Potential for Inadequate Elementary School Circulation.	Less than significant after mitigation.
TRAF 11	Potential for Lack of Adequate Parking at Marina Site	Less than significant after mitigation.

Source: Fehr & Peers, 2003

Population, Housing, and Socioeconomics

The All Conventional alternative would add 9,410 individuals to the population. This represents 953 more individuals that the Proposed Project. This alternative would increase population growth which is significant and unexpected. Additionally, the All Conventional alternative would not provide any affordable, high density housing which is in conflict with City policies. Due to the increase in population over the Proposed Project, the All Conventional alternative would have more impacts than the Proposed Project and is not environmentally superior.

Comparable Impacts: More than the Proposed Project
Reduces Significant Impacts: No

Public Services

The project will add 953 more individuals to the population than the Proposed Project. Demand for fire, police, parklands, and library services would increase accordingly. Additionally, individuals living in conventional housing are expected to use public services at a higher rate than individuals living in Active Adult communities. Based on City standards, the All Conventional alternative would require 18.8 acres of community parks and 9.4 acres of neighborhood parks. The All Conventional alternative would by 6.5 acres deficient in community parklands. The minimum size acreage of the neighborhood parks would not comply with City standards.

The All Conventional alternative does not provide advantages for public services when compared with the Proposed Project due to the increased demand for libraries, police and fire, and increased deficiency in parklands. For these reasons, the All Conventional alternative is not environmentally superior.

Comparable Impacts: More than the Proposed Project
Reduces Significant Impacts: No

Water Supply Assessment

If the project is approved within 24 months, the Water Supply Assessment indicates that water supplies will be available to serve the proposed project. This impact would be the same for the All Conventional alternative, therefore, the All Conventional alternative is not environmentally superior to the proposed project.

Comparable Impacts: Same to the Proposed Project
Reduces Significant Impacts: No

Utilities and Service Systems

Under the All Conventional alternative, the demand for utilities would likely be increased. However, these increase are not expected to be significant. The All Conventional alternative does not provide significant advantages to the Proposed Project and is not environmentally superior.

Comparable Impacts: Similar to the Proposed Project
Reduces Significant Impacts: No

Aesthetics/Light and Glare

Like the Proposed Project, the All Conventional alternative would change the undeveloped, agricultural nature of the site to a developed, urban condition. The All Conventional alternative would create similar light and shadow conditions when compared with the project. Therefore, the All Conventional alternative is not considered advantageous for aesthetics and light/glare when compared with the Proposed Project and is not environmentally superior.

Comparable Impacts: Same as the Proposed Project
Reduces Significant Impacts: No

Cultural Resources

The All Conventional 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 All Conventional Alternative as the proposed project. The site would need to be cleared of all potentially hazardous wastes and materials. As part of the proposed project, the materials will need to be removed from the site and disposed at an appropriate facility that handles hazardous materials/wastes.

Development of the All Conventional Alternative will present the same conditions as the proposed project and is not considered advantageous and is not environmentally superior.

Comparable Impacts: Same as the Proposed Project
Reduces Significant Impacts: No

Conclusion

The All Conventional alternative would have more significant impacts than the Proposed Project. Impacts to air quality, public services, and population would be increased due to more individuals and vehicles generated under this alternative. The severity of impacts to land use and traffic, while similar to the Proposed Project, will likely be increased. Overall, the All Conventional alternative is not an environmentally superior alternative due to increased impacts to air quality, public services, and population.

CHAPTER 7.0 IRREVERSIBLE ENVIRONMENTAL CHANGES

A number of irreversible changes will occur with approval of the proposed project. These are summarized as follows:

X Undeveloped agricultural lands will be committed to urban development.

X Permanent dewatering of the site may lower ground water levels.

X Air quality will be incrementally degraded. Project emissions will contribute towards the exceedance of ROG levels over the long term operation of the project. On a cumulative basis, construction will adversely affect fugitive dust levels and construction pollutants, and contribute to the non-attainment status of the County.

X Additional impermeable surfaces and increases in runoff will occur. New sources for potential surface water pollution will be introduced.

X Potential habitat will be lost with implementation of the project. Jurisdictional waters may also be impacted.

X Incremental increases in ambient noise levels will occur.

X Inconsistencies with existing General Plan policies. Agricultural lands will be irretrievably lost.

X Additional traffic will be generated by site land uses, and incremental increases in local and regional congestion will occur.

X A new population base and housing supply will be introduced into an area previously undeveloped.

X Increased levels of public services will be required to serve the proposed project. Community and regional park land shortages will be aggravated by project demand.

X Water supplies for consumption, sewage treatment, and other utility resources will be permanently committed to the project site.

X The current undeveloped, graded character of the site will be committed to mixed use, residential, and support uses. Light effects will incrementally affect the night sky.

X The potential for disturbing potentially unknown historic and prehistoric cultural resources will occur with site development and occupation.

CHAPTER 8.0 UNAVOIDABLE ADVERSE IMPACTS

Implementation of the proposed project will result in a number of potentially significant impacts on the environment. The majority of those potentially significant impacts, with mitigation measures, will be reduced to levels below significance. However, the following impacts cannot be completely mitigated, and the impacts will remain significant and adverse:

X Impacts on air quality due to the exceedance of ROG and NO_x during the long term operation of the project, potential cumulative effects from project construction activity on fugitive dust and pollutant emissions and inconsistency with the Air Quality Attainment Plan.

X The project will present a significant change in land use character and intensity, including agricultural-related issues. Elements of the project are inconsistent with the existing San Joaquin County General Plan.

X The project will generate unexpected population growth .

X The project will aggravate existing community and regional park land shortages. Adequate community parklands are not provided and proposed neighborhood parks do not meet the City's minimum size requirements.

X 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, REVISED TRAFFIC ANALYSES DATA