January 2007

DRAFT

Environmental Impact Report

for the

El Charro Specific Plan

Volume 1 of 2

State Clearinghouse #: 2006052112

Prepared for:

LIVERMORE CALIFORNIA

City of Livermore
City Hall
1052 S. Livermore Avenue
Livermore, CA 94550

Jones & Stokes

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Volume 1 of 2

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Prepared for:

City of Livermore
City Hall
1052 S. Livermore Avenue
Livermore, CA 94550
Contact: Eric Brown
925/ 960-4450

Prepared by:

Jones & Stokes
2600 V Street
Sacramento, CA 95818-1914
Contact: Claire Bromund
916/737-3000

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Acronyms

$\mu g/m^3$	micrograms per cubic meter
AB 1807	Toxic Air Contaminant Identification and Control Act
AB 2588	Air Toxics "Hot Spots" Information and Assessment Act
AB 939	Assembly Bill 939
ABAG	Association of Bay Area Government's
ACCMA	Alameda County Congestion Management Agency's
ACCWP	Alameda Countywide Clean Water Program
ACE	Altamont Commuter Express
ACTA	Alameda County Transportation Authority
ACTIA	Alameda County Transportation Improvement Authority
ACWD	Alameda County Water District
AF	acre-feet
ALUPP	Alameda County Airport Land Use Policy Plan
APA	Airport Protection Area
ARB	California Air Resources Board
ASTM	American Society for Testing and Materials
AWTP	Altamont Water Treatment Plant
BAAQMD	Bay Area Air Quality Management District
BAOS	Bay Area 2005 Ozone Strategy
BART	Bay Area Rapid Transit
basin plans	water quality control plans
BAT	best available technology
BCP	Business and Commercial Park
BCT	best conventional pollutant control technology
BFE	Base Flood Elevations
BMPs	best management practices
BRT	Bus Rapid Transit
Burrowing Owl	Western Burrowing Owl
CAA	federal Clean Air Act
Cal/OSHA	California Occupational Safety and Health Administration
Caltrans	California Department of Transportation
CAP	Clean Air Plan and Triennial Assessment
CBSC	California Buildings Standards Code
CCAA	California Clean Air Act
CCR	California Code of Regulations
CEQA	California Environmental Quality Act

CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CESA	California Endangered Species Act
CF-AIR	Community Facilities—Airport
CFR	Code of Federal Regulations
cfs	cubic feet per second
CGC	California Government Code
CHS	Highway Service Commercial
CHSC	California Health and Safety Code
City	City of Livermore
CIWMB	California Integrated Waste Management Board
CIWMP	Countywide Integrated Waste Management Plan
CLOMR	Conditional Letter of Map Revision
CMP	Congestion Management Program
CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CO	carbon monoxide
Corps	U.S. Army Corps of Engineers
County	Alameda County
CPUC	California Public Utilities Commission
CRHR	California Register of Historical Resources
CRLF	California red-legged frog
CTS	California tiger salamander
CWA	Clean Water Act
dB	decibel
dBA	A-weighted decibel
DFG	California Department of Fish and Game
DO	dissolved oxygen
DOC	California Department of Conservation
DTSC	California Department of Toxic Substances Control
DWR	California Department of Water Resources
EB	eastbound
EBRPD	East Bay Regional Park District
EC	Electrical conductance
ECAP	Alameda County's East County Area Plan
EDR	Environmental Data Resources
EIR	environmental impact report
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
EVA	Emergency Vehicle Access
FAA	Federal Aviation Administration
FAR	Floor Area Ratio
FEIR	Final EIR
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Map

FMMP	Farmland Mapping and Monitoring Program
FR	Federal Register
FTA	Federal Transit Administration
General Construction Permit	NPDES General Permit for Discharges of Storm Water Runoff associated with Construction Activity
General Plan	City of Livermore General Plan
GPA	General Plan Amendment
gpd	gallons per day
HCD	State Housing and Community Development Department
HCM	Highway Capacity Manual
HCS	Highway Capacity Software
HOT	High Occupancy Toll
HOV	High Occupancy Vehicle
HSP	Health and Safety Plan
HVAC	heating, ventilation, and air conditioning
I-580	Interstate 580
ITE	Institute of Transportation Engineer's
LARPD	Livermore Area Recreation & Park District
LAVTA	Livermore Amador Valley Transit Authority
LAVWMA	Livermore-Amador Valley Water Management Agency
LDAG	Limited Agriculture
L_{dn}	Day-Night Level
LEED™	Leadership in Energy and Environmental Design
L_{eq}	Equivalent Sound Level
LOMR	Letter of Map Revision
LOS	Level of Service
LPZC	Livermore Planning and Zoning Code
MBTA	Migratory Bird Treaty Act
mg/L	milligrams per liter
MGD	million gallons per day
mph	miles per hour
MRZ	mineral resource zone
msl	mean sea level
MTBE	methyl tertiary butyl ether
MTS	Metropolitan Transportation System
MVEBs	motor vehicle emissions budget
NAHC	Native American Heritage Commission
NGVD	National Geodetic Vertical Datum
NLUGBI	North Livermore Urban Growth Boundary Initiative
NO_2	nitrogen dioxide
NO_3	Nitrate
NOI	notice of intent
NOP	notice of preparation
NO_x	oxides of nitrogen

NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NRNL	National Registry of Natural Landmarks
NTU	Nephelometric Turbidity Units
NWPs	Nationwide permits
OAP	The Ozone Attainment Plan
OSP	Open Space
OSP/S&G	Open Space/Sand & Gravel
P'02	Projections 2002
PD	Planned Development
PD-ECSP- HC	Planned Development – El Charro Specific Plan – Highway Commercial
PD-ECSP-OS	Planned Development – El Charro Specific Plan – Open Space
PD-ECSP-RC	Planned Development – El Charro Specific Plan – Regional Commercial
PG&E	The Pacific Gas and Electric Company
PM10	inhalable particulate matter 10 microns or greater in diameter
PM2.5	particulate matter 2.5 microns or less in diameter
PPM	parts per million
ppv	peak particle velocity
PRC	Public Resources Code
Proposed Project	El Charro Specific Plan
PRPA	Paleontological Resources Preservation Act of 2002
R&J	Rhodes & Jamieson
RACM	reasonably available control measures
RCRA	Resource Conservation and Recovery Act
RG	-registered geologist
ROG	reactive organic gases
RTIP	Regional Transportation Improvement Program
RWQCB	Regional Water Quality Control Board
SAA	Streambed Alteration Agreement
SB	Senate Bill
SBC	SBC Pacific Bell
SCVWD	Santa Clara Valley Water District
sectors	resource sectors
SFBAAB	San Francisco Bay Area Air Basin
SFRWQCB	San Francisco Regional Water Quality Control Board
SIPs	State Implementation Plans
SMARA	Surface Mining and Reclamation Act
SMMP	Stream Management Master Plan
SMP	surface mining permit
SO_2	sulphur dioxide
SOI	sphere of influence
SPA	Surplus Property Authority
Specific Plan	City of Livermore El Charro Specific Plan

SR	State Route
SVP	Society of Vertebrate Paleontology
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TACs	toxic air contaminants
TAF	thousand acre-feet
TAZs	traffic analysis zones
TCMs	traffic control measures
TDS	total dissolved solids
TIF	Traffic Impact Fee
TMDL	total maximum daily load
TVTC	Tri-Valley Transportation Council
TVTD	Tri-Valley Transportation Development
UBC	Uniform Building Code
UCMP	University of California Museum of Paleontology
UGB	Urban Growth Boundary
USC	U.S. Government Code
USDHS	U.S. Department of Homeland Security
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
v/c	volume-to-capacity
VOCs	Volatile organic compounds
VPFS	Vernal pool fairy shrimp
VPTS	vernal pool tadpole shrimp
Vulcan	Vulcan Materials Company
WB	westbound
WDR	Waste Discharge Requirement
Williamson Act	California Land Conservation Act of 1965
Zone 7	Alameda County Flood Control and Water Conservation District, Zone 7 Water Agency

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Executive Summary

Introduction

This environmental impact report (EIR) analyzes the environmental effects of the proposed project (Project), indicates ways to reduce or avoid potential environmental damage resulting from the Project, and identifies alternatives to the proposed Project. This EIR also discloses the proposed Project's significant environmental effects that cannot be avoided, growth-inducing effects, effects found not to be significant, and significant cumulative impacts.

An EIR is a public, informational document used in the planning and decision-making process. The purpose of an EIR is not to recommend either approval or denial of a project, but to provide information to aid in the decision-making process. Although the EIR does not control the ultimate decision on the proposed Project, the City of Livermore (City), as lead agency, must consider the information in the EIR and respond to each significant effect identified in the EIR.

The California Environmental Quality Act (CEQA) requires the City to prepare an EIR that reflects the independent judgment of the City regarding the impacts of the project, the level of significance of the impacts both before and after mitigation, and mitigation measures proposed to avoid or reduce the impacts.

Project Description

Background

In 2004, the City adopted a comprehensive General Plan Update in which the City designated several parcels east of El Charro Road, south of Interstate 580 (I-580), and north and west of the Las Positas Golf Course as land suitable for Business/Commercial Park (BCP) uses. The City also has adopted certain road, trail, and other infrastructure plans for this area, known as the El Charro area.

In order to facilitate the buildout of the El Charro area consistent with the City of Livermore General Plan (General Plan), infrastructure, circulation and recreational improvements are proposed. To provide for unified and consistent planning for the Project Area, the City has decided to prepare the City of

Livermore El Charro Specific Plan (Specific Plan). An applicant, Prime Outlets Livermore Valley, LLC, has also prepared specific site plans and will be seeking site plan approval, a planned development district, a development agreement, tentative subdivision maps, and grading and building permits from the City for its project, Prime Outlets Livermore Valley, concurrently with and immediately subsequent to approval of the Specific Plan. Another owner has proposed a church facility but has not yet submitted a complete application for land use entitlements.

The City also decided to prepare this EIR to analyze the Specific Plan, General Plan Amendments, development proposals within the Specific Plan Area, and the associated infrastructure improvements. These elements make up the proposed Project and are discussed in more detail below and in Chapter 2, "Project Description."

The purpose and objectives of the proposed Project are described below. The Project includes a number of elements, including a Specific Plan, a development project within the Specific Plan Area, development agreements, financing mechanisms, and phasing of public improvements.

Purpose and Objectives

The **purpose** of the Specific Plan is to provide a greater level of detail than what is provided in the General Plan to guide the development of community/regional commercial uses and associated support services, as well roadway improvements and open space and recreational uses. The **objectives** of the Specific Plan are to implement General Plan goals, policies, objectives, and land use densities in a manner that achieves the following.

- Formulate a specific plan that requires high quality development consistent with the goals and vision of the General Plan.
- Ensure development is consistent with Scenic Corridor policies and objectives.
- Provide a major east-west roadway connection between State Route (SR) 84 and El Charro Road.
- Participate in planning full improvements for El Charro Road that accommodate capacity and safety concerns of Specific Plan properties and surrounding land uses.
- Realign and upgrade Freisman Road as part of circulation improvements.
- Provide three roadways to improve access to the properties located in the eastern and southern parts of the Specific Plan Area.
- Plan for development that is compatible with surrounding land uses, including quarries, the Las Positas Golf Course, and the Livermore Municipal Airport.

- Ensure protection of environmentally sensitive assets through the formulation of a Specific Plan designating appropriate development envelopes and environmental mitigations.
- Include policies in the Specific Plan that encourage coordination with other appropriate entities in planning and implementing current and future phased improvements to El Charro Road, the El Charro/I-580 interchange, and the creek and flood control system.
- Identify and implement a funding plan to ensure the provision of public infrastructure necessary to serve El Charro development. Consider and incorporate other agency and landowner projects in the specific program, where feasible, requiring funding by those entities for those studies pertaining to projects or facilities that may involve the Project Area or the larger El Charro area (e.g., additional improvements to El Charro Road, the Zone 7 Water Agency (Zone 7) diversion channel, etc.).
- Create certainty regarding development potential and streamline the permit process to require consistency between the Specific Plan and environmental documents. Create a Specific Plan that provides a positive climate for business investment, minimizes risk, and (through a property-based funding mechanism such as an assessment district) allocates costs for improvements and benefits received in a prudent and equitable manner among participating property owners.

Project Elements

The proposed Project includes a number of distinct elements, as follows.

- Specific Plan, including the following:
  - a land use program;
  - design guidelines and standards;
  - circulation and infrastructure goals and policies;
  - circulation improvements;
  - utilities and infrastructure improvements; and
  - open space, community facilities, and services.
- Las Positas Golf Course redesign
- Development projects within the Specific Plan Area.
- General Plan Amendments
- Development agreements, financing mechanisms, phasing of public improvements, and Williamson Act contract cancellation and/or transfer.

Specific Plan

The Specific Plan Area is approximately 250 acres of mostly nonurbanized land. The Specific Plan describes in detail the proposed development of the Specific Plan Area, the land use program, circulation and other infrastructure improvements, and plan implementation and administration. The Specific Plan identifies the necessary backbone infrastructure, its phasing, and the funding sources and mechanisms necessary to serve development and other identified needs of the Specific Plan Area. The Specific Plan has been developed in accordance with California Government Code 65451 and includes a coherent policy framework and development standards that incorporate the multiple goals and objectives of landowners and agencies in the area. The Specific Plan is part of this EIR and is available either on CD in the pocket in this EIR, on the City's web site (www.ci.livermore.ca.us), or in hard copy at the City's office.

Proposed Land Uses/Zoning Districts

The Specific Plan follows the General Plan's land use recommendation for the area, further refining and developing alternatives that will fit within the current BCP land use designation. The focus of the Specific Plan is on community/regional commercial uses and associated support services. The Specific Plan would establish three new zoning districts that specify development standards and permitted uses, consistent with the General Plan. All commercial developments within the Specific Plan Area are permitted a maximum Floor Area Ratio of 0.3. If all of the properties designated as one of the two retail zones described below are developed at this ratio, the City would gain approximately 1.5 million square feet of retail space within the Specific Plan Area (EDAW|AECOM 2006). The proposed zoning districts are the following.

- **Planned Development–El Charro Specific Plan–Regional Commercial (PD-ECSP-RC)**: accommodates medium to higher end, regionally serving retail, service commercial, and entertainment uses in a retail outlet setting not currently found in the Tri-Valley area.
- **Planned Development–El Charro Specific Plan–Highway Regional Commercial (PD-ECSP-HRC)**: accommodates highway-serving commercial uses and provides an area near the freeway interchange for uses serving the traveling public and limited commercial uses that need freeway exposure and those uses permitted in the PD-ECSP-RC, above.
- **Planned Development–El Charro Specific Plan–Open Space (PD-ECSP-OS)**: accommodates open space uses such as grazing, agriculture, temporary parking, and passive, nonintensive recreation opportunities (e.g., golf, picnicking, and multiuse trails).

Circulation Improvements

The following circulation improvements are included in the proposed Project.

El Charro Road Improvements

Anticipated improvements to El Charro Road involve widening the road to five lanes between the interchange and the proposed Jack London/Airway Boulevard Extension (described below) and connecting I-580 with Jack London/Airway Boulevard. Additional turn lanes and a traffic signal would be installed at this intersection as well.

South of Jack London/Airway Boulevard, El Charro Road would be widened to provide three northbound lanes across the frontage of Specific Plan parcels. A right turn exit only from one parcel is proposed in this area. South of the Specific Plan Area, El Charro Road would continue to provide primary access to the quarry lands. The conceptual design for El Charro Road has accounted for ingress and egress of quarry traffic and has minimized merging and lane changes for quarry trucks. Safety lighting would be installed at each El Charro Road intersection within the Project Area.

Realignment of Freisman Road

Freisman Road would be realigned to provide proper functioning of the interchange with El Charro Road and local access within the Specific Plan Area, and to accommodate additional width needed for I-580 improvements. Freisman Road would be shifted to the south along I-580 in order to accommodate the potential expansion of I-580, being proposed as a separate project, as well as the 50-foot vineyard buffer along this portion of Freisman Road. In addition, the existing intersection with El Charro Road would be removed.

Road A

Road A would be a four-lane road running north from the realigned Freisman Road to the proposed Jack London/Airway Boulevard, along the boundary between the Prime Outlets Livermore Valley property and the Roger Johnson property.

Road B

Road B is also planned in order to improve vehicular circulation, providing additional access points for patrons and delivery vehicles. Road B would run from Jack London/Airway Boulevard to Freisman Road east of Road A and northwest of the Arroyo Las Positas and would not cross the Arroyo. Road B would generally run north from Jack London/Airway Boulevard and would terminate at an intersection with Freisman Road.

Road C

Road C would provide access to the proposed multiuse trail, pump station, and development in the southwest area of the Specific Plan. Road C would be a cul-de-sac generally running south form Jack London/Airway Boulevard along the edge of the City property.

Jack London/Airway Boulevard Extension

A major street extension is proposed to connect El Charro Road to either Jack London Boulevard or Airway Boulevard east of the Specific Plan Area. The roadway extension would ultimately consist of a 131-foot right-of-way. Within the Specific Plan Area, the roadway would have three lanes eastbound, three to

four lanes westbound, swales on either side, and a planted median between El Charro Road and Road A. The remaining extension, east of Road A, would ultimately be a four-lane roadway within an 88-foot right-of-way. The roadway extension would include a new free-span bridge crossing at the Arroyo Las Positas and culverts under the roadway and would have the same western connection with El Charro Road.

Two corridor options, extending west to the Specific Plan Area and El Charro Road, are being considered:

- improvement and extension of Jack London Boulevard with a southern alignment from the existing section of Jack London Boulevard south of the airport near Isabel Avenue across the southwest edge of Las Positas Golf Course;
- widening and extending Airway Boulevard from Kitty Hawk Road with a northern alignment through the northern limits of Las Positas Golf Course, curving to the north to cross the Arroyo Las Positas, and continuing west to cross Cottonwood Creek before connecting with El Charro Road.

For either option, the road would initially be two lanes east of Road A with future widening to four lanes. Portions of the road may have an interim alignment with future relocation to an ultimate alignment. This interim extension would be constructed during the initial stage of development to provide connectivity to El Charro Road and improvements to emergency access.

Transit Service

The City is working with the Livermore Amador Valley Transit Authority to extend public bus service to the Specific Plan Area. As development within the Specific Plan Area occurs, the City will review opportunities to serve the Specific Plan Area by transit. Consistent with the Specific Plan, development plans would include adequate space and access points for bus routing and stops. Safe pullout locations for bus stops along Jack London/Airway Boulevard would be provided to avoid impeding traffic flow along this main thoroughfare. These stops would be located adjacent to main pedestrian access points. Where appropriate, internal bus stop locations would be provided to enable direct access to retail storefronts and an enhanced level of convenience for transit riders. (EDAW|AECOM 2006.)

Specific Plan Bicycle Network

Consistent with Circulation Policy 4.3.2 in Chapter 4 of the Specific Plan, Class II bicycle lanes (on-street lanes solely for bicyclists) or shoulders that can accommodate bicycle lanes would be provided where appropriate within the Specific Plan Area. The Specific Plan design guidelines (Chapter 3 of the Specific Plan) also require provisions for bicycle parking at the ratio of 10% of the required off-street parking. Additionally, the multiuse trail along the Arroyo Las Positas would be paved south of the Arroyo to Class I bicycle standards. Direct access to this trail from Jack London/Airway Boulevard would be provided along connections from the proposed Jack London/Airway Boulevard intersections with either Roads A (Airway Boulevard Extension option) or both

Road A and Road B (Jack London Boulevard Extension option). Two locations south of the roadway would be provided for vehicle parking (10–15 stalls each) to assist with access to the multiuse trail.

Pedestrian Facilities

Pedestrian facilities would include the regional multiuse trail along the Arroyo Las Positas and sidewalks along all City streets serving developed frontages. A number of connections would be established between the trail and parks and the commercial developments to the north and west and would be directed toward major intersections in order to facilitate crossing.

Utilities and Infrastructure Improvements

Storm Drainage, Flood Control/Water Quality Improvements

A storm drainage system for the Specific Plan Area would be designed to discharge directly into the Arroyo Las Positas after first being treated and detained to meet Regional Water Quality Control Board (RWQCB) permit requirements and City standards. Because the storm drainage system would not tie into the existing City of Livermore storm drainage system, it is not evaluated in the 2004 Storm Drainage Master Plan. The new storm drainage system would be sized according to the City's 2005 Storm Drainage Facility Guidelines, Storm Drain Utility Master Plan, State Water Resources Control Board (SWRCB) requirements and current stormwater regulations. The site storm drainage system and site design must work together with stormwater quality control devices that both treat and delay the water reaching the creek in such a way that the drainage off the developed site matches the preproject flows. Additionally, floodflows must be detained to compensate for the loss of natural regional detention due to filling in the floodplain.

The proposed flood control improvements, a flood control detention basin, north overbank channel, and fill placed on one low lying parcel to the south of the Arroyo Las Positas are primarily intended to remove the commercial property within the Specific Plan Area from the floodplain and replace the storage this inundated land provided within the 100-year floodplain. A Conditional Letter of Map Revision (CLOMR) will be filed with the Federal Emergency Management Agency (FEMA) prior to construction of the Arroyo and basin improvements, and a Letter of Map Revision (LOMR) will be filed after construction and prior to the acceptance by the City of the constructed improvements.

Stormwater Treatment and Detention

The following improvements are included to address the water quality treatment for up to 50% of the Specific Plan Area. A minimum of 50% of water quality treatment for each site would be done on each site as it develops. Most of the hydromodification impacts to the creeks would be addressed with basins within the North Multiuse Park/Open Space Area. Additional basins will be required on the individual parcels that do not readily connect to the North Multiuse Park/Open Space Area. Pursuant to section C.3 of the City's National Pollutant Discharge Elimination System (NPDES) permit, the stormwater treatment

measures incorporated within this Project must, at a minimum, meet the hydraulic sizing criteria for volume or flow capacity. The basins described herein are necessary to detain flows to match preproject flows. These basins must be designed to comply with the NPDES permit and City standards.

Water Quality Swales and Basin

Swales and small basins are proposed, to collect storm drain flows from all new impervious surfaces created by development on parcels in the Specific Plan Area. The swales will be designed to carry up to the 10-year frequency flows from parcels to the basins, regulating the flows to match preproject conditions. The swale underdrain system and basin underdrain would ensure that ponded water would drain within 48 hours. As the swales approach the upstream end of the North Overbank Channel, they will run parallel to the flood bypass channel connecting with the road extension swales and swale along the west parcel south of the road extension prior to flowing into the bypass channel. All elements would have underdrain systems that drain any remaining ponded water into the Arroyo Las Positas.

Wastewater Improvements

The City's Sewer Master Plan (City of Livermore 2004b) identifies the major sewer infrastructure proposed to serve the Specific Plan Area, including a new pump station with a capacity of 325,000 gallons per day. As part of the Project, a force main and a new Specific Plan Area pump station would be constructed. The pump station would discharge through the new force main into the existing trunk line that feeds the airport pump station at the west end of Jack London Boulevard. A local sewer collection system would be constructed, and all required improvements, including the sewer collection system and new pump station, would be funded by El Charro area development.

Water Improvements

Potable Water

Development in the Specific Plan Area would need to construct and loop a potable water pipeline extension system. The system would include 8- and 12-inch backbone pipelines to serve individual parcels.

Recycled Water

The City's Recycled Water Master Plan (City of Livermore 2004d) identifies major recycled infrastructure improvements required for the Specific Plan Area. Specific Plan development would require construction of a 12-inch backbone recycled water pipeline and service laterals to individual parcels, which would be funded by development in the Specific Plan Area.

Utilities

Supply lines for gas and electrical service would be constructed to connect the Specific Plan Area to the existing gas and electrical supply lines. An existing gas supply line is located to the north of the site and to the west of the Specific Plan

Area. Pacific Gas & Electric (PG&E) is developing a master plan in this area to serve the development. PG&E expects to connect the existing electrical service lines on the north side of I-580 in Dublin across the freeway with the El Charro Road/I-580 interchange improvements and connect to the west and south from Pleasanton, and from the existing line serving the driving range on the Sywest property. Telecommunication lines and facilities would also be constructed. New and existing utilities, including electrical lines less than 60 kilovolts, would be placed underground as development occurs consistent with LPZC 3-5-310, Public Utility Undergrounding.

Open Space

Approximately 32% of the 250-acre Specific Plan Area is composed of City-owned Limited Agriculture (LDAG) designated land, located on the southwest side of the Specific Plan Area along the Arroyo Las Positas. This land is intended to be used as open space, minimal agricultural, and nonintensive recreational uses, or as a buffer to the Arroyo and nearby airport. The Specific Plan includes a new zoning district for these parcels (PD-ECSP-OS).

In the vicinity of the Arroyo Las Positas, a landscape buffer and bioswale stormwater treatment facility would run parallel to the Jack London/Airway Boulevard Extension on the north side of the roadway, and a bioswale stormwater treatment facility would run along Jack London/Airway Boulevard on the south side of that roadway. North of the Jack London/Airway Boulevard Extension, Road A, and Road B, approximately 15 scattered picnic tables and benches would be situated for public use of the property as a City park. South of the Jack London/Airway Boulevard Extension, the City-owned land would serve as a more passive recreational open space area. The City owns one 35-acre parcel south of the Arroyo Las Positas. This parcel would remain primarily as natural open space and would be used as a temporary detention basin to mitigate flooding impacts. The multiuse trail would run parallel to the Arroyo Las Positas and then cross on a new bridge and continue to the east connecting to the existing trail at the Oaks Business Park.

A minimum 100-foot buffer from the bank of the Arroyo Las Positas would be created, except on the Children's Hospital parcel, where the proposed buffer would be 50 feet from the north bank and 150 feet from the south bank of the Arroyo Las Positas and 100 feet from the banks of Cottonwood Creek. Internal open space would consist of outdoor seating, pedestrian boulevards, soft and hardscaped plazas, dining, entertainment, and green spaces within the commercial developments.

Las Positas Golf Course Reconfiguration

The extension of Jack London or Airway Boulevard would affect the Las Positas Golf Course and would require reconfiguration of the course. Both the 18-hole championship and nine-hole executive courses would be affected by the proposed

Project. The Jack London Boulevard Extension option passes through the southwest corner of the golf course. It is likely that three championship holes and two executive holes would be reconfigured with this option. The Airway Boulevard Extension option passes through the northern portion of the golf course. It is likely that eight championship holes and two executive holes would be reconfigured with this option. The reconfigured course has been conceptually designed and will require refinement prior to construction.

Development Projects

Prime Outlets Livermore Valley

Prime Outlets Livermore Valley, LLC is proposing a specific project for a retail development on approximately 42 acres (see Figure 2-13). The proposed development includes 11 retail buildings, with a floor area of approximately 450,000 square feet, that will house approximately 150 national and international brand tenants. Including an approximately 16,000 square foot food court building and ancillary service areas, the total proposed floor area is approximately 450,000 square feet. The buildings are functionally single-story with wall heights ranging from 20 to 24 feet. Architectural features, such as decorative roofs and towers, range from 35 to 50 feet in height. Architectural features, such as decorative roofs and towers, range from 35 to 50 feet in height. The project would provide approximately 2,400 on-site parking spaces and approximately 245 off-site parking spaces located on approximately 2.77 acres of land immediately south of the Prime Outlets project site. Primary access to the project site would be through a main entrance from the proposed Road A. Access also would be provided from two additional driveways on Road A and one driveway on the proposed east-west roadway extension. The project also would include architectural gateway elements, such as tower and enhanced roof lines, that would be consistent with the proposed I-580 Scenic Corridor policies included in the General Plan Amendments proposed as part of the Project. These General Plan Amendments would allow developers to be consistent with visual resource policies that allow general preservation of the City's southern ridge lines while meeting the objectives for high quality gateway development. The purpose of the architectural elements would be to highlight the site as a gateway to the City and the Livermore Valley wine country. Prime Outlets Livermore Valley has requested a General Plan Amendment from the City's General Plan Scenic Corridor policies to facilitate development of the gateway elements and building development on the site. Other variations from typical standards include reduced parking stall dimensions, reduced bicycle parking (comparable to industry standards), reduced frontage landscape, reduced parking lot landscape and modified on-site stormwater filtration.

Plans for Other Parcels

Children's Hospital Parcel

Specific Plan-Identified Land Uses

The proposed Land Use Plan (Chapter 2 of the Specific Plan) identifies the 36-acre parcel owned by the Children's Hospital at the northeastern corner of the Specific Plan Area as a site that could include lifestyle services, such as day or health spas, sports centers that could provide activities such as tennis or swimming, restaurants, and hotels (EDAW|AECOM 2006).

Alternate Land Use

A potential alternate use of the Children's Hospital parcel is the construction and development of a church campus. This use would be designed consistent with the Specific Plan guidelines and standards. Though an application for a development is not analyzed as a development project in this EIR, the design parameters for this parcel are considered, as this parcel contains the most site planning restrictions due to setback requirements from the Arroyo Las Positas and Cottonwood Creek, an AT&T line, shallow parcel depth, and Scenic Corridor constraints

Development of this parcel could include a campus to accommodate religious services, traditional church functions such as weddings and funeral services, conferences, professional counseling, preschool and daycare, religious education, banquets, concerts, and other related church uses. A primary auditorium, meeting rooms and classrooms, exterior children's playground areas, playfields, and parking, including overflow parking and RV storage, may be included in an entitlement application. New roadway crossings of the waterways, in addition to the northern alignment of the major east-west roadway extension, would be necessary to replace the existing creek crossing on this parcel. It is anticipated that five existing crossings would be removed, and four new ones constructed, on this parcel.

General Plan Amendments

A General Plan Amendment is proposed related to the Visual Scenic Corridor Policies in the Community Character Element as they apply to the Specific Plan area. The proposed amendment described in Chapter 2 of the EIR, would modify the visual scenic corridor policy as it relates to allowable building heights in specific portions of the Specific Plan Area.

The proposed Project also includes consideration of an alternate east-west road extension: Airway Boulevard between Isabel Avenue/SR 84 and El Charro Road. Should this alternate roadway extension be selected, the Project would include consideration of a General Plan Amendment to include this roadway in the Circulation Element and remove the Jack London Boulevard Extension, which is presently in the General Plan.

Alternatives

In addition to the proposed Project, this draft EIR analyzes the potential impacts of a reasonable range of alternatives. The following alternatives were analyzed. The impacts of these alternatives are presented in Chapter 4, "Other CEQA Considerations."

No-Project Alternative

This alternative would result in no change in land use in the Specific Plan Area, no project development, and no new infrastructure.

As no new land uses would be introduced, there would be no land use impacts. However, with no development in this area, it is likely that either business/commercial development pressure would shift to other areas in Livermore, Dublin, or Pleasanton, and the overall development goals of the City of Livermore General Plan would not be fulfilled, which could affect jobs/housing balances and overall municipal buildout.

Flood Control Desilting Alternative

This alternative would desilt the Arroyo Las Positas reach from Kitty Hawk Road/Isabel Avenue to Airway Boulevard and through the Las Positas Golf Course to restore the creek to its original capacity. This work is consistent with the project identified in Zone 7's SMMP to widen the Arroyo Las Positas to convey the 100-year storm within the creek; however, this smaller scale project does not achieve the capacity needed to convey the 100-year floodflow. A separate project would be required to either contour the golf course to contain the 100 year flows or install a bypass channel or culvert for the high flows.

This alternative would obviate the need for the detention basin and the north overbank channel, but mass fill on the southern parcel of the Children's Hospital site would still be required. The rest of the Specific Plan and project development would be the same as the proposed Project.

This alternative would avoid the need for a detention basin, which would reduce the impact on potential upland habitat for the CTS and that may be utilized by burrowing owls. However, this alternative would substantially increase impacts on Arroyo Las Positas riparian areas due to desilting activities, which are suitable aquatic habitat for the CRLF and other riparian species. Other impacts would be similar to the proposed Project.

Flood Control Flow-Through Alternative

This alternative would allow the water spilling over the north bank of the Arroyo Las Positas under existing conditions to continue to do so to the north. This flow would be conveyed around the commercial buildings on the private parcels to the north and allowed to continue under El Charro Road across the private property to the west, over the freeway, and back into the Arroyo Mocho downstream in Pleasanton. This alternative would not increase flows downstream but would maintain the status quo flows. This alternative would not require a detention basin.

This alternative would avoid the need for a detention basin, which would reduce the impact on potential upland habitat for the CTS and that may be utilized by burrowing owls. This alternative would not increase the amount of overbank flow passed to the Staples Ranch area and across I-580 (compared to existing conditions) but would not reduce flow to these areas like the proposed Project would. Other impacts of this alternative would be similar to the proposed project.

This alternative would reduce the developable footprint of several of the properties in the Specific Plan Area due to the need for facility space to pass the flow through the area. This may affect the financing sufficiency to construct the necessary infrastructure to support buildout of the Specific Plan Area.

Airway Extension, Middle Alignment Alternative

This alternative would include an Airway Boulevard Extension along an alignment that continues due westward from the golf course entrance road. This alternative would require a relocation of the existing clubhouse and a redesign of the golf course. This alternative would include one crossing of the Arroyo Las Positas but no crossing of Cottonwood Creek. This is an alternative to the Airway Boulevard Extension option or the Jack London Boulevard Extension option. The rest of the project elements would be the same as the proposed Project.

This alternative would avoid the potential need to realign part of Cottonwood Creek to facilitate the proposed Airway Boulevard Extension and would avoid a Cottonwood Creek crossing, thus reducing and avoiding impacts on biological resources. This alternative would also avoid impact to mineral resource designated land south of Arroyo Las Positas. However, this alternative would require the relocation of the golf course clubhouse and would require more substantial redesign of the golf course which would have secondary effects on biological resources of its own and construction-period effects on soils and water quality. Other impacts would be similar to the proposed Project.

Children's Hospital Site Alternative 1

This alternative would consist of realigning Cottonwood Creek where it exits the existing culvert under I-580 to run along the eastern side of the east parcel on the Children's Hospital site. The purpose of this realignment would be to provide a more contiguous area for development of the property.

This alternative has been suggested by different potential project proponents. Realignment of the creek would unify the northwest and east parcels. This may allow for a reduction in the need for higher buildings for potential BCP or church development by increasing the contiguous upland expanse and might avoid the need for a General Plan Amendment concerning the visual corridor policy. However, Cottonwood Creek provides aquatic habitat for the CRLF and a potential migration corridor for the CTS and other riparian species, and its realignment would reduce the amount of extant riparian habitat. Thus, this alternative may allow for more contiguous development that may have lower height profiles than the proposed Project, but at the expense of greater impacts to biological resources and riparian habitat. Other impacts would be similar to the proposed Project.

Children's Hospital Site Alternative 2

This alternative would exclude any development on the southern parcel of the Children's Hospital site. Total buildout of the Specific Plan would be slightly smaller than the proposed Project but not to an extent that infrastructure costs would likely make this alternative economically infeasible. However, infrastructure funding may have to come from sources other than the Specific Plan property owners such as the City general fund, if overall Specific Plan development is of an insufficient scale to generate sufficient funds for necessary infrastructure.

This alternative would include no BCP or church development on the southern parcel, which would avoid any direct conversion of the land, avoid the need for mass fill to remove any development from the floodplain, and avoid the need for two additional bridges to facilitate transit across the site parcels. It is possible that the southern parcel could be used for future flood control facilities, habitat, or perhaps golf course redesign area. This alternative, because it reduces development potential, would reduce impacts related to multiple subject areas such as traffic, air quality, and biological resources. This alternative would reduce potential buildout of the Specific Plan, which would reduce funding for project infrastructure However, given the limit on buildout potential, this may result in larger massing on the northwest and east parcels and may increase the potential need and scale for a General Plan Amendment concerning the visual corridor policy and may increase aesthetic impacts.

Visual Corridor Compliant Specific Plan

This alternative would not include General Plan Amendments for the Prime Outlets Livermore Valley project or the alternative church use on the northwest parcel of the Children's Hospital property relative to the visual corridor policy.

By not allowing for any buildings to exceed the established visual corridor view angles, it is probable that buildings on the Prime Outlets site and the Children's Hospital site would need to spread out more laterally on the properties in order to achieve project proponents' individual project goals.

This alternative would better preserve a continuous view of the hills south of Pleasanton and Livermore than the proposed Project. This alternative would provide for sufficient space to provide a similar level of buildout as the proposed Project. However, the lack of any accommodation on building heights would result in a more spread out and continuous expanse of lower buildings across the Prime Outlets and Children's Hospital sites, which may be aesthetically inferior to the proposed Project. Architectural flourishes above the height allowed by the visual corridor policy would not be allowed, which could reduce the aesthetic appeal of proposed development. Other impacts of this alternative would be similar to the proposed Project.

Other Alternatives Considered but Dismissed from Further Consideration

Other alternatives were also considered but were eliminated from further consideration in this EIR because they would not meet the objectives and purpose of the proposed Project, would be infeasible, or would not avoid or substantially reduce one or more significant impacts of the proposed Project as presented below. Chapter 4 also includes a discussion of the alternative screening that was conducted prior to eliminating these alternatives from further consideration.

- **Alternative A (Flood Control Diversion to Lake H Alternative)** - This alternative would include the use of pipes and pumping to route floodplain flows into Lake H. This alternative was dismissed from further analysis in the draft EIR because it would require extensive take of private land through a significant mineral resource area and Lake H is not available today. Thus, this alternative is not considered feasible.
- **Alternative B (Jack London Boulevard Extension, Northern Four-Lane Alignment Alternative)** - This alternative would include routing of a four-lane Jack London Boulevard Extension along the interim two-lane alignment mostly on City-owned land. This alternative was dismissed from further analysis in the draft EIR because it either would require extensive above-ground construction in the FAA-designated runway protection zone (which the FAA will not permit) or would require an extensive underground tunnel in an area of shallow groundwater, which is considered logistically and economically suspect, and would create unnecessary traffic safety concerns.

Though this alternative would nearly eliminate the need for private land for the Jack London Boulevard Extension, it is not considered feasible.

- **Alternative C (Limited Commercial Development Alternative)** - This alternative would include a lowered commercial buildout of the Specific Plan with a 750,000 square foot cap on commercial space potential. This alternative was dismissed from further analysis in draft EIR because it would not generate sufficient funding for the infrastructure necessary to serve the Specific Plan Area as a whole. The infrastructure needs for the Specific Plan are not linear in that the level of infrastructure development would be similar for a 750,000-square-foot development as that needed for a 1.5 million-square-foot development because of the need to extend roads, water lines, sewer lines, and other infrastructure to the undeveloped site. Thus, this alternative is considered economically infeasible.
- **Alternative D (Children's Hospital Site Alternative 3)** - This alternative would include development of commercial uses on City-owned land zoned for open space in the Specific Plan Area instead of the development of east and south parcels on the Children's Hospital property. This alternative was dismissed from further analysis in the draft EIR because it would require the use of land purchased by the City using FAA-derived funding that constrains the commercial use of such land. The FAA requirements specify that the land use may be used for commercial uses that are related to airport use. This is not considered probable because the land is separated from the airport by sufficient distance that it reduces the potential feasibility of any such use. In addition, such commercial uses are not likely to be as intensive as BCP uses on other nonconstrained land in the Specific Plan Area (such as the Children's Hospital site), which also would result in economic infeasibility issues due to the cost of infrastructure.
- **Alternative E (Dedicated El Charro Truck Lanes Alternative)** - This alternative would include dedicated truck lanes along El Charro Road and a flyover or underpass at Jack London Boulevard/Airway Boulevard. Though this alternative would segregate commercial and quarry traffic along El Charro Road at the Jack London Boulevard intersection, it also would introduce unsafe weaving and merging areas that would increase the potential for accidents. By comparison to the proposed Project, such an alternative is not considered an improvement in traffic safety along El Charro Road. The proposed Project, with the recommended mitigation, would effectively segregate northbound traffic on El Charro Road via a traffic light and would allow for southbound segregation, without the line-of-sight problems inherent with a flyover or underpass configuration. Thus, this alternative would not reduce a significant impact of the proposed Project and was dismissed from further analysis in the EIR.
- **Alternative F (Alternative Commercial Development Locations)** - This alternative would include retention of the Specific Plan in current uses and the placement of 1.5 million square feet of commercial uses at one of four alternative locations: (1) SMP-38, SMP-39, SMP-40; (2) Doolan Canyon; (3) North Livermore; or (4) other designated BCP areas in Livermore. This alternative was dismissed from further analysis in the draft EIR because the various versions of this alternative ultimately would not meet the

fundamental objective to develop the Specific Plan Area in accordance with the general plan. The placement of BCP use in other parts of the City or in areas that might be annexed to the City would require a General Plan Amendment and/or an increase of intensity at other BCP lands beyond that planned for in the general plan. Placement of BCP uses at SMP-38 and SMP-39 would result in significant unavoidable impacts on mineral resources. Placement of BCP uses at Doolan Canyon would require City annexation and would result in significant unavoidable biological resource impacts greater than those of the proposed Project. Similar impacts would come from the placement of BCP uses in other North Livermore areas such as north of I-580 at North Livermore Road. Thus, this alternative would not meet most of the project objectives and is not demonstrated to avoid or reduce significant impacts of the Project.

Impacts and Mitigation Measures

Sections 3.1 to 3.15 of this document analyze the potential impacts of the proposed Project for each of the resource subjects required by CEQA. Growth-inducing and cumulative impacts are analyzed in Chapter 4. A summary of the environmental impacts of the proposed Project is presented in Table ES-1. The table indicates the significance of each impact before mitigation, identifies appropriate mitigation measures, and lists the significance of each impact assuming implementation of the mitigation measures.

Areas of Known Controversy

Based on input received during the comment period of the Notice of Preparation and during previous coordination with adjacent landowners, at the time of the printing of this EIR the following are areas of known controversy.

- Sand and gravel quarry operations and compatibility of the proposed Project with these operations especially as it relates to Project-generated traffic on El Charro Road and the integration of this traffic with existing quarry truck traffic; compatibility of new land uses adjacent to quarrying; and potential east-west road extensions through mineral resource areas.
- Changes to the visual aesthetics of the Project Area due to the proposed development along a Scenic Corridor and due to the change of the project site from a semirural to a developed character.
- Changes in and redirection of floodflows that have the potential to affect areas outside the Project Area and potential compatibility of the Project with long-term planning for regional flood control.
- Project-created increases in traffic and contributions to cumulative traffic in Livermore, Pleasanton, and Dublin, and especially on the already congested I-580 throughout eastern Alameda County.

- Project effects on biological resources, especially in light of the cumulative impacts of projects in the presently undeveloped area between Livermore, Pleasanton, and Dublin.

Unresolved Issues

The only unresolved issues at the time of printing of this draft EIR is the selection of an east-west roadway extension option and the related redesign of the Las Positas Golf Course. The City will ultimately need to select one of the east-west roadway extension options, decide whether to approve the Specific Plan, decide whether to approve General Plan Amendments, decide whether to approve the Prime Outlets Livermore Valley project, and decide on a golf course redesign. None of these decisions can be made until the final EIR is prepared and is certified.

Table ES-1. Summary of Environmental Impacts—Proposed Project

Impact	Significance Before Mitigation[a]	Mitigation	Significance with Mitigation Incorporated
Aesthetics and Visual Resources			
Impact VIS-1: Effect on a Scenic Vista and Scenic Resources	LS	n/a	n/a
Impact VIS-2: Substantial Degradation of the Existing Visual Character of the Site and Its Surroundings	S	n/a	SU
Impact VIS-3: Creation of Substantial Light or Glare Adversely Affecting Day or Nighttime Views	S	Mitigation Measure VIS-3a: Plant Vegetation to Screen Views from Las Positas Golf Course Mitigation Measure VIS-3b: Limit Construction to Daylight Hours or Minimize Fugitive Light from Portable Sources	SU
Agricultural Resources			
Impact AG-1: Conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to a Nonagricultural Use	S	Mitigation Measure AG-1: Protect Prime Farmland	LS
Impact AG-2: Conflicts with Existing Zoning for Agricultural Uses or a Williamson Act Contract	LS	n/a	n/a
Impact AG-3: Other Changes in the Existing Environment, which, Due to Their Location or Nature, Could Result in Conversion of Farmland to a Nonagricultural Use	LS	n/a	n/a
Air Quality			
Impact AQ-1: Generation of Significant Levels of Emissions from Project Construction	S	Mitigation Measure AQ-1a: Implement Required Bay Area Air Quality Management District Control Measures for Construction Emissions of Fugitive Dust	LS

NOTES:
a. Significance is defined as follows:
LS = less than significant
PS = potentially significant
S = significant
NCC= not cumulatively considerable
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Impact	Significance Before Mitigation[a]	Mitigation	Significance with Mitigation Incorporated
Impact AQ-2: Exposure of Sensitive Receptors to Substantial Concentrations of Carbon Monoxide	LS	n/a	n/a
Impact AQ-3: Generation of Significant Levels of NO_x Emissions from Project Operations	S	Mitigation Measure AQ-3: Reduce Vehicle Trips through Transportation Demand Management Program	SU
Impact AQ-4: Generation of Odors during Construction or Operation that Would Affect a Substantial Number of People	LS	n/a	n/a
Biological Resources			
Impact BIO-1: Loss or Disturbance of Special-Status Plants	LS	n/a	n/a
Impact BIO–2: Potential Direct Loss of, and Indirect Impacts on, Potential Habitat for Vernal Pool Fairy Shrimp and Vernal Pool Tadpole Shrimp	S	Mitigation Measure BIO-2a: Complete Protocol Surveys for Vernal Pool Fairy Shrimp and Vernal Pool Tadpole Shrimp Mitigation Measure BIO-2b: Compensate for the Impacts on Vernal Pool Fairy Shrimp and Vernal Pool Tadpole Shrimp	LS

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Impact	Significance Before Mitigation[a]	Mitigation	Significance with Mitigation Incorporated
Impact BIO-3: Loss of California Red-Legged Frogs and Degradation of Aquatic and Upland Habitat	S	Mitigation Measure BIO-3a: Restrict All Site Grading within California Red-Legged Frog Upland Habitat to the Dry Season (May 1 to October 15) or Use Exclusion Fencing for Construction that Continues outside the Dry Season Mitigation Measure BIO-3b: Minimize Ground-Disturbing Activities in California Red-Legged Frog Upland Habitat Mitigation Measure BIO-3c: Conduct a Preconstruction Survey for California Red-Legged Frog Mitigation Measure BIO-3d: Enhance California Red-Legged Frog Aquatic and Upland Habitat On-Site Mitigation Measure BIO-3e: Compensate for the Loss and Disturbance of California Red-Legged Frog Aquatic and Upland Habitat Mitigation Measure BIO-7a: Design, Fund, and Implement the Arroyo Las Positas Habitat Enhancement Plan to Enhance, Re-create, or Restore Riparian Forest and Grassland Habitat along Portions of the Arroyo Las Positas and Cottonwood Creek	LS

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Impact	Significance Before Mitigation[a]	Mitigation	Significance with Mitigation Incorporated
Impact BIO–4: Loss or Disturbance of California Tiger Salamander Aquatic and Upland Habitat and Potential Loss of California Tiger Salamander Adults, Larvae, or Eggs	S	Mitigation Measure BIO-4a: Complete Protocol Surveys for California Tiger Salamander Mitigation Measure BIO-4b: Compensate for the Loss and Disturbance of California Tiger Salamander Habitat Mitigation Measure BIO-4c: Monitor Construction Activities within California Tiger Salamander Habitat and, if Found, Cease Construction Activities until the Salamander Has Been Removed	LS
Impact BIO-5: Potential Loss or Disturbance of Western Pond Turtles	S	Mitigation Measure BIO-5: Conduct a Preconstruction Survey for Western Pond Turtles Mitigation Measure BIO-7a: Design, Fund, and Implement the Arroyo Las Positas Habitat Enhancement Plan to Enhance, Re-create, or Restore Riparian Forest and Grassland Habitat along Portions of the Arroyo Las Positas and Cottonwood Creek	LS
Impact BIO-6: Potential Loss or Disturbance of Breeding or Wintering Burrowing Owl	S	Mitigation Measure BIO-6: Conduct Preconstruction Surveys for Active Burrowing Owl Burrows and Implement the California Department of Fish and Game Guidelines for Burrowing Owl Mitigation, if Burrows Are Detected in the Survey Area	LS

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Impact	Significance Before Mitigation[a]	Mitigation	Significance with Mitigation Incorporated
Impact BIO-7: Potential Disturbance or Loss of Riparian Habitat	S	Mitigation Measure BIO-7a: Design, Fund, and Implement the Arroyo Las Positas Habitat Enhancement Plan to Enhance, Re-create, or Restore Riparian Forest and Grassland Habitat along Portions of the Arroyo Las Positas and Cottonwood Creek	LS
		Mitigation Measure BIO-7b: Maintain Riparian Habitat along the Arroyo Las Positas within Las Positas Golf Course during Course Redesign	
Impact BIO-8: Potential Disturbance or Loss of Waters of the United States (Including Wetlands) and Nonjurisdictional Waters	S	Mitigation Measure BIO-7a: Design, Fund, and Implement the Arroyo Las Positas Habitat Enhancement Plan to Enhance, Re-create, or Restore Riparian Forest and Grassland Habitat along Portions of the Arroyo Las Positas and Cottonwood Creek	LS
		Mitigation Measure BIO-7b: Maintain Riparian Habitat along the Arroyo Las Positas within Las Positas Golf Course during Course Redesign	
		Mitigation Measure BIO-8a: Avoid and Minimize the Disturbance of Waters of the United States	
		Mitigation Measure BIO-8b: Implement Resource Protection/Impact Minimization Measures Identified in Federal, State, and Local Permits	
		Mitigation Measure BIO-8c: Compensate for the Loss of Waters of the United States	

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Impact	Significance Before Mitigation[a]	Mitigation	Significance with Mitigation Incorporated
Impact BIO-9: Potential Loss or Disturbance of Tree, Shrub, and Ground Nesting Migratory Birds and Raptors	S	Mitigation Measure BIO-9: Avoid Disturbance of Tree-, Shrub-, and Ground-Nesting Migratory Birds and Raptors	LS
		Mitigation Measure BIO-7a: Design, Fund, and Implement the Arroyo Las Positas Habitat Enhancement Plan to Enhance, Re-create, or Restore Riparian Forest and Grassland Habitat along Portions of the Arroyo Las Positas and Cottonwood Creek	
		Mitigation Measure BIO-7b: Maintain Riparian Habitat along the Arroyo Las Positas within Las Positas Golf Course during Course Redesign	
Impact BIO-10: Potential Disturbance or Loss of Wildlife Movement Corridors	S	Mitigation Measure BIO-7a: Design, Fund, and Implement the Arroyo Las Positas Habitat Enhancement Plan to Enhance, Re-create, or Restore Riparian Forest and Grassland Habitat along Portions of the Arroyo Las Positas and Cottonwood Creek	LS
		Mitigation Measure BIO-7b: Maintain Riparian Habitat along the Arroyo Las Positas within Las Positas Golf Course during Course Redesign	

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Impact	Significance Before Mitigation[a]	Mitigation	Significance with Mitigation Incorporated
Impact BIO-11: Potential Disturbance or Loss of Protected Trees	S	Mitigation Measure BIO-7a: Design, Fund, and Implement the Arroyo Las Positas Habitat Enhancement Plan to Enhance, Re-create, or Restore Riparian Forest and Grassland Habitat along Portions of the Arroyo Las Positas and Cottonwood Creek Mitigation Measure BIO-7b: Maintain Riparian Habitat along the Arroyo Las Positas within Las Positas Golf Course during Course Redesign Mitigation Measure BIO-11: Redesign Project or Compensate for Removal of Protected Trees	LS
Impact BIO-12: Conflicts with Applicable Habitat Conservation Plan or Natural Community Conservation Plan	NI	n/a	n/a
Impact BIO-13: Potential Golf Course Redesign Impacts on Biological Resources	S	Mitigation Measure BIO-3a, 3b, 3c, 3d, 3e—California red-legged frog mitigation as described above. Mitigation Measure BIO-4a, 4b, 4c—California tiger salamander mitigation as described above. Mitigation Measure BIO-5—Western pond turtle mitigation as described above. Mitigation Measure BIO-6—Burrowing owl mitigation as described above. Mitigation Measure BIO-7a, 7b—Riparian habitat mitigation as described above. Mitigation Measure BIO-8a, 8b, 8c—Wetland/waters mitigation as described above.	LS

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Impact	Significance Before Mitigation[a]	Mitigation	Significance with Mitigation Incorporated
Cultural Resources			
Impact CR-1: Disturbance or Destruction of Known and Undiscovered Archaeological Resources within the Arroyo Las Positas Archaeological Buffer Zone	S	Mitigation Measure CR-1: Develop and Implement a Treatment Plan for the Arroyo Las Positas Archaeological Buffer Zone	LS
Impact CR-2: Inadvertent Disturbance to or Destruction of Site P-01-010526 as a Result of Ground-Disturbing Activities Associated with Construction of the Jack London Boulevard Extension	S	Mitigation Measure CR-2: Delineate Site Boundary of P-01-010526 and Fence if Necessary	LS
Impact CR-3: Disturbance or Destruction of Undiscovered Buried Resources during Ground-Disturbing Activities	S	Mitigation Measure CR-3: Implement Archaeological and Native American Monitoring Plan	LS
Impact CR-4: Potential Impacts on Buried or Unknown Archaeological Resources	S	Mitigation Measure CR-4: Stop Work if Buried Cultural Deposits are Encountered during Construction Activities	LS
Geology, Soils, and Paleontology			
Impact GEO-1: Potential Structural Damage and Injury Caused by Fault Rupture	LS	n/a	n/a
Impact GEO-2: Potential Structural Damage and Injury from Ground Shaking	LS	n/a	n/a
Impact GEO-3: Potential Structural Damage and Injury from Development on Materials Subject to Liquefaction	LS	n/a	n/a
Impact GEO-4: Potential Structural Damage as a Result of Development on Expansive Soils	LS	n/a	n/a
Impact GEO-5: Potential Accelerated Runoff, Erosion, and Sedimentation from Grading Activities	LS	n/a	n/a
Impact GEO-6: Inconsistency of Project with County and City Policies for Development in Geologically Hazardous Areas	LS	n/a	n/a

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Impact	Significance Before Mitigation[a]	Mitigation	Significance with Mitigation Incorporated
Impact PAL-1: Destruction of Vertebrate or Otherwise Scientifically Significant Paleontological Resources	S	Mitigation Measure PAL-1a: Conduct Site-Specific Evaluation of Paleontological Sensitivity Mitigation Measure PAL-1b: Stop Work if Substantial Fossil Remains Are Encountered During Construction	LS
Hazards and Hazardous Materials			
Impact HAZ-1: Creation of a Hazard to the Public or the Environment through the Routine Transport, Use, or Disposal of Hazardous Materials	S	Mitigation Measure HAZ-1: Prepare and Implement a Hazardous Materials Spill Prevention Control and Countermeasure Plan during Construction	LS
Impact HAZ-2: Hazardous Emissions or Handling of Hazardous Materials, Substances, or Waste within 0.25 Mile of an Existing or Proposed School	S	Mitigation Measure HAZ-1: Prepare and Implement a Hazardous Materials Spill Prevention Control and Countermeasure Plan during Construction	LS
Impact HAZ-3: Location on a Site that Is Listed as Hazardous by the California Environmental Protection Agency or Other Government Agencies and, as a Result, Would Create a Significant Hazard to the Public or the Environment	S	Mitigation Measure HAZ-3a: Perform a Phase I Investigation for the Project Alignment Mitigation Measure HAZ-3b: Prepare a Health and Safety Plan for Construction Activities on Known Hazardous Materials Sites	LS
Impact HAZ-4: Creation of a Hazard through the Accidental Exposure or Mobilization of Hazardous Materials during Construction	S	Mitigation Measure HAZ-4: Stop Work and Implement Hazardous Materials Investigations/Remediation	LS
Impact HAZ-5: Safety Hazards near a Public or Public-Use Airport	LS	n/a	n/a
Impact HAZ-6: Impairing the Implementation of or Physically Interfering with an Adopted Emergency Response Plan or Emergency Evacuation Plan during Construction	S	Mitigation Measure HAZ-6: Prepare and Implement a Traffic Control Plan	LS

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Impact	Significance Before Mitigation[a]	Mitigation	Significance with Mitigation Incorporated
Impact HAZ-7: Impairing the Implementation of or Physically Interfering with an Adopted Emergency Response Plan or Emergency Evacuation Plan as a Result of Project Phasing	LS	n/a	n/a
Hydrology and Water Quality			
Impact WQ-1: Potential for Increased Erosion and Sedimentation and Decreased Surface Water Quality during Construction	S	Mitigation Measure WQ-1a: Comply with National Pollutant Discharge Elimination System General Construction Permit Mitigation Measure WQ-1b: Construct the Proposed Water Quality Swales and Hydrograph Modification Management Plan Detention Basins Prior to Use of Developed Sites	LS
Impact WQ-2: Increase in Surface Runoff and Associated Water Quality Impacts on Local Waterways	S	Mitigation Measure WQ-2: Incorporate Site-Specific Water Quality Treatment Devices into Site Drainage Plans to Meet Water Quality Standards and Maintain Beneficial Uses	LS
Impact WQ-3: Potential for Degradation of Water Quality through the Accidental Release of Hazardous Materials	S	Mitigation Measure WQ-3a: Develop Hazardous Material Spill Prevention Control and Countermeasure Plan for Construction Mitigation Measure WQ-3b: Implement Measures to Maintain Groundwater or Surface Water Quality	LS

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Impact	Significance Before Mitigation[a]	Mitigation	Significance with Mitigation Incorporated
Impact WQ-4: Loading of Contaminants for which the Arroyo Las Positas and Downstream Water Bodies Have Been Listed as Impaired	S	Mitigation Measure WQ-1b: Construct the Proposed Water Quality Swales and Hydrograph Modification Management Plan Detention Basins Prior to Use of Developed Sites Mitigation Measure WQ-2: Incorporate Site-Specific Water Quality Treatment Devices into the Site Plan to Meet Water Quality Standards and Maintain Beneficial Uses	LS
Impact WQ-5: Increased Sediment and Contaminants in Groundwater and Surface Water as a Result of Infrastructure Failure	LS	n/a	n/a
Impact WQ-6: Degradation of Surface and Groundwater Quality from Trenching or Excavation below the Water Table and within the Wetted Area of the Arroyo Las Positas	S	Mitigation Measure WQ-6: Comply with National Pollutant Discharge Elimination System General Dewatering Permit	LS
Impact WQ-7: Substantial Depletion of Groundwater Supplies or Interference with Groundwater Recharge	LS	n/a	n/a
Impact WQ-8: Flood Hazard Impacts that Would Impede or Redirect Floodflows	S	Mitigation Measure WQ-8: Design Airway Boulevard Four-Lane Widening to Avoid Increase in Flooding and Geomorphic Changes	LS
Impact WQ-9: Flood Hazard Impacts to Structures and Risk of Loss Including Levee Failure	LS	n/a	n/a
Impact WQ-10: Potential Modification to Flows in the Arroyo Las Positas and Cottonwood Creek Could Result in Geomorphological Alterations to Channel Form and Habitat	S	Mitigation Measure WQ-8: Design Airway Boulevard Four-Lane Widening to Avoid Increase in Flooding and Geomorphic Changes	LS

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Impact	Significance Before Mitigation[a]	Mitigation	Significance with Mitigation Incorporated
Impact WQ-11: Potential Incompatibility with Regional Flood Control Improvement through the Zone 7 Stream Management Master Plan	S	Mitigation Measure WQ-11a: Maintain Culvert and Manage Increased Siltation Potential in and Immediately above the Airway Boulevard Crossing of the Arroyo Las Positas Mitigation Measure WQ-11b: Accommodate Future Bypass Channel Construction and Creek Widening in Any Redesign of the Arroyo Las Positas Golf Course	LS
Land Use and Planning			
Impact LUP-1: Physical Division of an Established Community	LS	n/a	n/a
Impact LUP-2: Construction-Related Effects on Existing Land Uses	LS	n/a	n/a
Impact LUP-3: Incompatibility with Existing or Future Land Uses	LS	n/a	n/a
Impact LUP-4: General Plan and Specific Plan Coordination	LS	n/a	n/a
Mineral Resources			
Impact MIN-1: Loss of Availability of a Valuable Mineral Resource within the Specific Plan Area and Airway Boulevard Extension	NI	n/a	n/a

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Impact	Significance Before Mitigation[a]	Mitigation	Significance with Mitigation Incorporated
Impact MIN-2: Loss of Availability of a Valuable Mineral Resource within the Alignment of the Jack London Boulevard Extension Option	S	Mitigation Measure MIN-2a: Delay the Construction of a Four-Lane Extension of Jack London Boulevard Mitigation Measure MIN-2b: Accommodate Quarry Operations at the Northeast Portion of the SMP-38 Area Mitigation Measure MIN-2c: Compensate Property Owner for Loss of Mineral Resource Under Roadway Footprint	LS
Impact MIN-3: Incompatible Development Within 0.5 Mile of Active Quarry Sites	LS	n/a	n/a
Noise			
Impact N-1: Exposure of Noise-Sensitive Land Uses to Vibration and Noise During Construction Activities	S	Mitigation Measure N-1a: Limit Hours of Construction Mitigation Measure N-1b: Employ Noise-Reducing Construction Practices Mitigation Measure N-1c. Prepare a Noise Control Plan Mitigation Measure N-1d. Disseminate Essential Information to Residences and Implement a Complaint/Response-Tracking Program	LS
Impact N-2: Exposure of Existing Noise-Sensitive Land Uses to Noise Originating from the Specific Plan Area	LS	n/a	n/a
Impact N-3: Exposure of Planned Noise-Sensitive Land Uses within the Specific Plan Area to Aircraft Noise from Livermore Municipal Airport	LS	n/a	n/a
Impact N-4: Exposure of Existing Noise-Sensitive Land Uses to Increased Traffic Noise Resulting from Implementation of the El Charro Specific Plan	LS	n/a	n/a

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Impact	Significance Before Mitigation[a]	Mitigation	Significance with Mitigation Incorporated
Impact N-5: Exposure of Planned Future Noise-Sensitive Land Uses within the Specific Plan Area to Traffic Noise	S	Mitigation Measure N-5: Design Land Uses to Comply with Land Use Compatibility Standards for Exterior Noise	LS
Population and Housing			
Impact POP-1: Displacement of a Substantial Number of Existing Housing Units or People	LS	n/a	n/a
Impact POP-2: Direct Inducement of Substantial, Unanticipated Population Growth	NI	n/a	n/a
Impact POP-3: Indirect Inducement of Substantial Population Growth	LS	n/a	n/a
Public Services and Utilities			
Impact PSU-1: Increased Demand for Fire Protection Services	LS	n/a	n/a
Impact PSU-2: Exposure of People or Structures to Increased Risk of Loss, Injury, or Death Involving Urban or Wildland Fires	S	Mitigation Measure PSU-2: Implement Procedures to Reduce Fire Risk During Construction	LS
Impact PSU-3: Potential Increased Need for or Adverse Effects on Police Services (Response Times or Facilities)	LS	n/a	n/a
Impact PSU-4: Disruption of or Adverse Effects on Public Schools or Other Public Services	LS	n/a	n/a
Impact PSU-5: Construction-Related Water Service Interruptions	S	Mitigation Measure PSU-5: Conduct an Investigation of Utility Line Locations and Maintain Utility Services	LS
Impact PSU-6: Adverse Effects on the Capacity of Water Services	LS	n/a	n/a
Impact PSU-7: Adverse Effects on the Capacity of Wastewater Services	LS	n/a	n/a

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Impact	Significance Before Mitigation[a]	Mitigation	Significance with Mitigation Incorporated
Impact PSU-8: Result in Demand for Additional Stormwater Drainage Infrastructure	LS	n/a	n/a
Impact PSU-9: Adverse Effects on Other Utilities	LS	n/a	n/a
Impact PSU-10: Adverse Effects on the Capacity of Solid Waste Landfills	LS	n/a	n/a
Recreation			
Impact REC-1: Change in Demand for Neighborhood Parks, Regional Parks, or Recreational Facilities	B	n/a	n/a
Impact REC-2: Construction or Operational Impacts on a Neighborhood Park, Regional Park, Recreational Facility, or Publicly Owned Open Space	S	Mitigation Measure REC-2: Maintain Partial Public Golf Course Availability during Reconfiguration	LS
Traffic			
Impact TRA-1: The Addition of Project-Generated Traffic Would Contribute to Unacceptable Freeway and Ramp Operations during Peak Hours	LS	n/a	n/a

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Impact	Significance Before Mitigation[a]	Mitigation	Significance with Mitigation Incorporated
Impact TRA-2: The Addition of Project-Generated Traffic Would Contribute to Unacceptable Level of Service at Intersections during Peak Hours	PS	Mitigation Measure TRA-2a: Implement Traffic Operations Improvements at the Intersection of Murrieta Boulevard at East Jack London Boulevard and Pine Street	SU (for certain intersections)
		Mitigation Measure TRA-2b: Implement Traffic Operations Improvements at the Intersection of El Charro Road and I-580 Eastbound Ramps	
		Mitigation Measure TRA-2c: Implement Traffic Operations Improvements at the Intersection of Fallon Road at Dublin Boulevard	
Impact TRA-3: The Addition of Project-Generated Traffic from the Church Campus Use Option	S	Mitigation Measure TRA-3: Monitor Church Sunday Queuing and, if Necessary, Adjust Signal Timing to Accommodate Church Traffic	LS
Impact TRA-4: The Addition of Project-Generated Traffic Would Contribute to Unacceptable Segment Operations under the 2010 Congestion Management Program Scenario	S	Mitigation Measure TRA-4a: Contribute the Appropriate Tri-Valley Development Transportation Fee for All Developments that Generate New Trips	SU
		Mitigation Measure TRA-4b: Contribute the Appropriate City of Livermore Traffic Impact Fee for All Developments that Generate New Trips	
		Mitigation Measure TRA-4c: Reduce Vehicle Trips through Transportation Demand Management Program	
Impact TRA-5: Potential Traffic Safety Issues Due to New Roadway Geometrics and Potential Quarry/Vehicle Conflicts	LS	n/a	n/a
Impact TRA-6: Project-Caused Changes in Emergency Access	LS	n/a	n/a
Impact TRA-7: The Project Would Improve Pedestrian and Bicycle Facilities in the Project Area	B	n/a	n/a

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Impact	Significance Before Mitigation[a]	Mitigation	Significance with Mitigation Incorporated
Impact TRA-8: Changes in Transit Demand	LS	n/a	n/a
Impact TRA-9: Project Construction Would Affect Traffic Flow and Circulation and Parking	S (for I-580)	Mitigation Measure TRA-9: Prepare and Implement a Construction Traffic Management Plan	SU (for I-580)
	S (for other roadways and intersections)	Mitigation Measure TRA-9: Prepare and Implement a Construction Traffic Management Plan	LS
Cumulative			
Cumulative Impact VIS-1: Cumulative Adverse Effects on a Scenic Vista and/or Cumulative Degradation of the Existing Visual Character of the Site and Its Surroundings	CC	No feasible mitigation.	CCU
Cumulative Impact VIS-2: Cumulative Effects on Views Due to Light or Glare	CC	No feasible mitigation.	CCU
Cumulative Impact AG-1: Cumulative Conversion of Farmlands to a Nonagricultural Use	CC	Mitigation Measure AG-1: Protect Prime Farmland	LCC
Cumulative Impact AG-2: Cumulative Conflicts with Existing Zoning for Agricultural Uses or a Williamson Act Contract	NCC	n/a	n/a
Cumulative Impact AQ-1: Cumulative Concentrations of CO	NCC	n/a	n/a
Cumulative Impact AQ-2: Cumulative Generation of Significant Levels of NO_x Emissions	CC	No feasible mitigation.	CCU
Cumulative Impact BIO-1: Cumulative Impacts on Special-Status Plants	NCC	n/a	n/a

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Impact	Significance Before Mitigation[a]	Mitigation	Significance with Mitigation Incorporated
Cumulative Impact BIO-2: Cumulative Impacts on Special-Status Wildlife Species, Riparian Habitats, Waters, and Wetlands			
Vernal Pool Fairy Shrimp and Vernal Pool Tadpole Shrimp	CC	Mitigation Measures BIO-2a, -2b—Vernal pool fairy shrimp/vernal pool tadpole shrimp mitigation as described above.	LCC
California Red-Legged Frog, California Tiger Salamander, Western Pond Turtle, Riparian Habitats, Waters, and Wetlands	CC	Mitigation Measure BIO-3a, -3b, -3c, -3d, -3e—California red-legged frog mitigation as described above. Mitigation Measure BIO-4a, -4b, -4c—California tiger salamander mitigation as described above. Mitigation Measure BIO-5—Western pond turtle mitigation as described above. Mitigation Measure BIO-7a, -7b—Riparian habitat mitigation as described above. Mitigation Measure BIO-8a, -8b, -8c—Wetland/waters mitigation as described above.	CCU
Cumulative Impact BIO-3: Cumulative Impacts on Burrowing Owls and Nesting Birds	CC	Mitigation Measure BIO-6: Conduct Preconstruction Surveys for Active Burrowing Owl Burrows and Implement the California Department of Fish and Game Guidelines for Burrowing Owl Mitigation, if Burrows Are Detected in the Survey Area	CCU

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Impact	Significance Before Mitigation[a]	Mitigation	Significance with Mitigation Incorporated
Cumulative Impact BIO-4: Cumulative Impacts on Wildlife Movement	CC	Mitigation Measure BIO-3a, -3b, -3c, -3d, -3e—California red-legged frog mitigation as described above.	CCU
		Mitigation Measure BIO-4a, -4b, -4c—California tiger salamander mitigation as described above.	
		Mitigation Measure BIO-5—Western pond turtle mitigation as described above.	
		Mitigation Measure BIO-7a, -7b—Riparian habitat mitigation as described above.	
		Mitigation Measure BIO-8a, -8b, -8c—Wetland/waters mitigation as described above.	
Cumulative Impact BIO-5: Cumulative Impact on Trees	CC	Mitigation Measure BIO-7a: Design, Fund, and Implement the Arroyo Las Positas Habitat Enhancement Plan to Enhance, Re-create, or Restore Riparian Forest and Grassland Habitat along Portions of the Arroyo Las Positas and Cottonwood Creek	LCC
		Mitigation Measure BIO-7b: Maintain Riparian Habitat along the Arroyo Las Positas within Las Positas Golf Course during Course Redesign	
		Mitigation Measure BIO-11: Redesign Project or Compensate for Removal of Protected Trees	
Cumulative Impact BIO-6: Cumulative Impact on Habitat Conservation Plans	NI	n/a	n/a
Cumulative Impact CR-1: Cumulative Impacts on Known and Undiscovered Cultural Resources	LCC	n/a	n/a

NOTES:

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Impact	Significance Before Mitigation[a]	Mitigation	Significance with Mitigation Incorporated
Cumulative Impact GEO-1: Cumulative Impacts of Development in Geologically Hazardous Areas	LCC	n/a	n/a
Cumulative Impact GEO-2: Cumulative Accelerated Runoff, Erosion, and Sedimentation	LCC	n/a	n/a
Cumulative Impact PAL-1: Cumulative Destruction of Vertebrate or Otherwise Scientifically Significant Paleontological Resources	LCC	n/a	n/a
Cumulative Impact HAZ-1: Cumulative Significant Hazards to the Public or the Environment	LCC	n/a	n/a
Cumulative Impact WQ-1: Cumulative Construction Effects on Water Quality	LCC	n/a	n/a
Cumulative Impact WQ-2: Cumulative Effects of Increased Surface Runoff and Associated Water Quality Impacts on Local Waterways	CC	Mitigation Measure WQ-2: Incorporate Site-Specific Water Quality Treatment Devices into Site Drainage Plans to Meet Water Quality Standards and Maintain Beneficial Uses	LCC
Cumulative Impact WQ-3: Cumulative Degradation of Water Quality through the Accidental Release of Hazardous Materials	CC	Mitigation Measure WQ-3a: Develop Hazardous Material Spill Prevention Control and Countermeasure Plan for Construction Mitigation Measure WQ-3b: Implement Measures to Maintain Groundwater or Surface Water Quality	LCC

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Impact	Significance Before Mitigation[a]	Mitigation	Significance with Mitigation Incorporated
Cumulative Impact WQ-4: Cumulative Effects on Impaired Water Bodies	CC	Mitigation Measure WQ-1b: Construct the Proposed Water Quality Swales and Hydrograph Modification Management Plan Detention Basins Prior to Use of Developed Sites Mitigation Measure WQ-2: Incorporate Site-Specific Water Quality Treatment Devices into Site Drainage Plans to Meet Water Quality Standards and Maintain Beneficial Uses	LCC
Cumulative Impact WQ-5: Cumulative Effects of Increased Sediment and Contaminants in Groundwater and Surface Water as a Result of Infrastructure Failure	LCC	n/a	n/a
Cumulative Impact WQ-6: Cumulative Effects on Surface and Groundwater Quality from Trenching or Excavation below the Water Table	CC	Mitigation Measure WQ-6: Comply with National Pollutant Discharge Elimination System General Dewatering Permit	LCC
Cumulative Impact WQ-7: Cumulative Effects on Groundwater Supplies or Interference with Groundwater Recharge	LCC	n/a	n/a
Cumulative Impact WQ-8: Cumulative Flood Hazard Impacts	CC	Mitigation Measure WQ-8: Design Airway Boulevard Four-Lane Widening to Avoid Increase in Flooding and Geomorphic Changes	LCC

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Impact	Significance Before Mitigation[a]	Mitigation	Significance with Mitigation Incorporated
Cumulative Impact WQ-9: Cumulative Effects on Regional Flood Control Improvement through the Zone 7 Stream Management Master Plan	CC	Mitigation Measure WQ-11a: Maintain Culvert and Manage Increased Siltation Potential in and Immediately above the Airway Boulevard Crossing of the Arroyo Las Positas Mitigation Measure WQ-11b: Accommodate Future Bypass Channel Construction and Creek Widening in Any Redesign of the Arroyo Las Positas Golf Course	LCC
Cumulative Impact LUP-1: Cumulative Effects of Development on the Physical Division of an Established Community	LCC	n/a	n/a
Cumulative Impact LUP-2: Cumulative Effects on Existing or Future Land Uses and Policies	NCC	n/a	n/a
Cumulative Impact MIN-1: Cumulative Effects on Mineral Resources	CC	Mitigation Measure MIN-2a: Delay the Construction of a Four-Lane Extension of Jack London Boulevard Mitigation Measure MIN-2b: Accommodate Quarry Operations at the Northeast Portion of the SMP-38 Area Mitigation Measure MIN-2c: Compensate Property Owner for Loss of Mineral Resource Under Roadway Footprint	LCC
Cumulative Impact N-1: Cumulative Exposure of Planned Noise-Sensitive Land Uses within the Specific Plan Area to Aircraft Noise from Livermore Municipal Airport	LCC	n/a	n/a
Cumulative Impact N-2: Cumulative Exposure of Existing and Future Noise-Sensitive Land Uses to Increased Traffic Noise Resulting from Cumulative Development	LCC	n/a	n/a

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Impact	Significance Before Mitigation[a]	Mitigation	Significance with Mitigation Incorporated
Cumulative Impact N-3: Cumulative Exposure of Planned Future Noise-Sensitive Land Uses Within the Specific Plan Area to Cumulative Traffic Noise	CC	Cumulative Mitigation Measure N-3: Design Land Uses to Comply with Land Use Compatibility Standards for Exterior Noise	LCC
Cumulative Impact POP-1: Cumulative Displacement of a Substantial Number of Existing Housing Units or People	LCC	n/a	n/a
Cumulative Impact POP-2: Cumulative Direct Inducement of Substantial, Unanticipated Population Growth	NI	n/a	n/a
Cumulative Impact POP-3: Cumulative Indirect Inducement of Substantial Population Growth	LCC	n/a	n/a
Cumulative Impact PSU-1: Cumulative Impacts on Public Services	LCC	n/a	n/a
Cumulative Impact PSU-2: Cumulative Impacts on Wildland Fire Hazards	LCC	n/a	n/a
Cumulative Impact PSU-3: Cumulative Increase in Demand for Utility Infrastructure and Capacities	LCC	n/a	n/a
Cumulative Impact REC-1: Cumulative Effects on Neighborhood Parks, Regional Parks, or Recreational Facilities	NCC	n/a	n/a
Cumulative Impact TRA-1: Cumulative Contribution to Unacceptable Freeway and Ramp Operations During Peak Hours	CC	Mitigation Measure TRA-4a: Contribute the Appropriate Tri-Valley Development Transportation Fee for All Developments that Generate New Trips Mitigation Measure TRA-4b: Contribute the Appropriate City of Livermore Traffic Impact Fee for All Developments that Generate New Trips Mitigation Measure TRA-4c: Reduce Vehicle Trips through Transportation Demand Management Program	LCC

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Impact	Significance Before Mitigation[a]	Mitigation	Significance with Mitigation Incorporated
Cumulative Impact TRA-2: Cumulative Contribution to Unacceptable Level of Service at Intersections During Peak Hours	CC	Cumulative Mitigation Measure TRA-2a: Improve Intersection of Santa Rita Road at Pimlico Road and I-580 Eastbound Ramps	CCU (for certain intersections)
		Cumulative Mitigation Measure TRA-2b: Improve Intersection of Murrieta Boulevard at East Stanley Boulevard	
		Cumulative Mitigation Measure TRA-2-c: Improve Intersection of Rheem Drive at Stoneridge Drive	
Cumulative Impact TRA-3: Cumulative Contribution to Unacceptable Segment Operations under the 2025 Congestion Management Program Scenario	CC	Cumulative Mitigation Measure TRA-3: Fair-Share Contribution to Future Widening of Stanley Boulevard, if Advanced by Others	CCU

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Impact	Significance Before Mitigation[a]	Mitigation	Significance with Mitigation Incorporated
Cumulative Impact TRA-4: Cumulative Contributions to Unacceptable Freeway and Ramp Operations or Unacceptable Level of Service at Intersection during Peak Hours with Staples Ranch	CC	Mitigation Measure TRA-4a: Contribute the Appropriate Tri-Valley Development Transportation Fee for All Developments that Generate New Trips	CCU (for certain intersections)
		Mitigation Measure TRA-4b: Contribute the Appropriate City of Livermore Traffic Impact Fee for All Developments that Generate New Trips	
		Mitigation Measure TRA-4c: Reduce Vehicle Trips through Transportation Demand Management Program	
		Cumulative Mitigation Measure TRA-2a: Improve intersection of Santa Rita Road at Pimlico Road and I-580 Eastbound Ramps	
		Cumulative Mitigation Measure TRA-2b: Improve Intersection of Murrieta Boulevard at East Stanley Boulevard	
		Cumulative Mitigation Measure TRA-2c: Improve Intersection of Rheem Drive at Stoneridge Drive	
Cumulative Impact TRA-5: Cumulative Contributions to Unacceptable Freeway and Ramp Operations or Unacceptable Level of Service at Intersection during Peak Hours without the Stoneridge Drive Extension	CC	Mitigation Measure TRA-2a: Implement Traffic Operations Improvements at the Intersection of Murrieta Boulevard at East Jack London Boulevard and Pine Street	CCU (for certain intersections)
		Cumulative Mitigation Measure TRA-2b: Improve Intersection of Murrieta Boulevard at East Stanley Boulevard	
		No feasible mitigation for certain intersections.	
Cumulative Impact TRA-6: Cumulative Contribution to Potential Traffic Safety Issues along El Charro Road	LCC	n/a	n/a

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Impact	Significance Before Mitigation[a]	Mitigation	Significance with Mitigation Incorporated
Cumulative Impact TRA-7: Cumulative Impacts on Emergency Access	LCC	n/a	n/a
Cumulative Impact TRA-8: Cumulative Impacts on Pedestrian and Bicycle Facilities	B	n/a	n/a
Cumulative Impact TRA-9: Cumulative Changes in Transit Demand	LCC	n/a	n/a
Cumulative Impact TRA-10: Cumulative Construction-Related Traffic Flow and Circulation Impacts	CC	Mitigation Measure TRA-9: Prepare and Implement a Construction Traffic Management Plan	CCU (for I-580) LCC (others)

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Chapter 1
Introduction

The California Environmental Quality Act (CEQA) of 1970, as amended, requires that an environmental impact report (EIR) be prepared, certified, and considered by decision makers before action is taken on a project. Section 15161 of the State CEQA Guidelines requires an EIR to examine the expected individual and cumulative impacts of all phases of a proposed project, including planning, construction, and operation. An EIR also identifies means (mitigation measures) to minimize potential adverse impacts and evaluates reasonable alternatives to the proposed project, including the required no-project alternative.

The project being evaluated in this EIR is the City of Livermore El Charro Specific Plan (Specific Plan), a specific development proposal (Prime Outlets Livermore Valley), and associated other improvements under consideration by the City of Livermore (City). The Specific Plan describes in detail the proposed development of the Specific Plan Area, the land use program, circulation and other infrastructure improvements, and plan implementation and administration. The Specific Plan identifies the necessary backbone infrastructure, its phasing, and the funding sources and mechanisms necessary to serve development and other identified needs of the Specific Plan Area. The Specific Plan has been developed in accordance with California Government Code 65451 and includes a coherent policy framework and development standards that incorporate the multiple goals and objectives of landowners and agencies in the area. The plan is part of this EIR and is available either on CD in the pocket bound in this report, on the City's website (www.ci.livermore.ca.us), or at the City's offices (address below).

EIR Requirements

CEQA (Public Resources Code [PRC] 21000–21178.1) and the State CEQA Guidelines provide the statutory requirements for evaluating environmental impacts of the project.

CEQA requires that all state and local government agencies consider the environmental consequences of projects over which they have discretionary authority. Public agencies are required to avoid or mitigate impacts when feasible. Public agencies also are required to balance a variety of public objectives, including economic, environmental, and social objectives.

An EIR is a public informational document used in the planning and decision-making process. Although the EIR does not control the ultimate decision on the project, the lead agency must consider the information in the EIR and respond to each significant impact identified in the EIR.

The purpose of an EIR is to:

- identify the potentially significant impacts of the proposed project on the environment and indicate the manner in which those significant effects can be avoided or mitigated,
- identify any unavoidable adverse impacts that cannot be mitigated, and
- identify reasonable and feasible alternatives to the project that would eliminate any significant adverse environmental impacts or reduce the impacts to a less-than-significant level.

An EIR also discloses growth-inducing impacts; effects found not to be significant; and significant cumulative impacts of all past, present, and reasonably anticipated future projects.

The EIR represents an objective, good-faith disclosure of the foreseeable environmental impacts that might occur should the project be approved and developed. The EIR does not approve or deny the project.

CEQA requires the City (the lead agency) to prepare an EIR that reflects the independent judgment of the agency regarding the impacts, the level of significance of the impacts both before and after mitigation, and the mitigation measures proposed to reduce the impacts. A draft EIR is circulated to responsible agencies, trustee agencies with resources affected by the project, and interested agencies and individuals. The purposes of public and agency review of a draft EIR include sharing expertise, disclosing agency analyses, checking for accuracy, detecting omissions, discovering public concerns, and soliciting counterproposals.

Reviewers of a draft EIR should focus on the sufficiency of the document in identifying and analyzing the possible impacts on the environment and ways in which the significant effects of the project might be avoided or mitigated. Comments are most helpful when they suggest additional specific alternatives or mitigation measures that would provide better ways to avoid or mitigate significant environmental effects.

Focus of the EIR

This document serves as a project EIR for the Specific Plan, related amendments to the City of Livermore General Plan (General Plan), the Prime Outlets Livermore Valley LLC proposal, the construction of a major east-west roadway extension through and east of the Specific Plan Area, proposed flood control measures, and associated infrastructure. This document also serves as a project

EIR for the redesign of the Las Positas Golf Course, which would be made necessary by the east-west roadway extension.

Future environmental analyses of individual projects within the Specific Plan would be based upon and rely on this EIR. The City may determine, after conducting a written analysis, that a proposed site-specific activity is within the scope of the project and impacts covered by this EIR. Upon making such a determination, the City would conclude that no modification to the EIR is necessary, absent grounds for preparing a subsequent or supplemental EIR. Where the City cannot find the proposed activity to be within the scope of the project and impacts covered by this EIR, following the requirements of CEQA Guidelines 15162-15164, the City will to determine what appropriate subsequent or supplemental environmental documentation may be necessary.

Among the factors the City will consider in determining whether proposed activities are, indeed, "within the scope" of the project analyzed in this EIR are whether the site-specific project will cause:

- substantial changes to the project that will require major revisions to the EIR because of new significant impacts;
- substantial changes to the project that will cause an increase in severity of previously identified significant impacts; and/or
- one or more significant effects that were not discussed in this EIR.

Because the establishment of zoning districts is proposed as part of the overall project, this EIR can also be considered an EIR for a "zoning action" for purposes of Public Resources Code 21083.3 and CEQA Guidelines 15183. These provisions generally limit the scope of necessary environmental review for site-specific approvals following the preparation of an EIR for a "zoning action." For such site-specific approvals, CEQA generally applies only to impacts that are "peculiar to the parcel or to the project," except where "substantial new information" shows that previously identified impacts will be more significant than previously assumed. Notably, impacts are considered not to be "peculiar to the parcel or to the project" if they can be substantially mitigated pursuant to previously adopted "uniformly applied development policies or standards."

The EIR endeavors to anticipate as many impacts of future development in the Specific Plan as is feasible at this stage. When future development proposals that are consistent with the Specific Plan and consistent with the impacts described in this EIR are brought forward, it is possible that no additional CEQA documentation will be necessary. Future development proposals that are not consistent with the Specific Plan or that would result in impacts not anticipated in this EIR require additional CEQA documentation.

A portion of the Specific Plan Area is the subject of a detailed development proposal submitted to the City. This commercial development proposal, the Prime Outlets Livermore Valley, is proposed on approximately 42 acres in the northwest corner of the Specific Plan Area, immediately south of Interstate 580

(I-580) and east of El Charro Road. This EIR also serves as a project-level EIR for the proposed development on this property.

This EIR also serves as a project-level EIR for the extension of either Airway Boulevard (including the widening of Airway Boulevard between Kitty Hawk Road and the golf course) or Jack London Boulevard to El Charro Road, for proposed flood control measures, and for all other public infrastructure related to the Specific Plan.

Construction of either one of the east-west roadway extensions would require the use of a portion of the existing golf course, which would need to be redesigned in order to accommodate the roadway. This document also discloses the potential impacts of redesign and reconstruction of the golf course using a conceptual plan for the course.

Intended Uses of the EIR

The City will use this document in its decision-making. The City's potential actions include adoption of the Specific Plan, approval of General Plan Amendments, cancellation and/or transfer of Williamson Act contracts, approval of the Prime Outlets Livermore Valley project and associated entitlements, selection and approval of the roadway alignments, approval of the flood control elements, and approval of the infrastructure plans. Chapter 2, "Project Description," describes these City approvals further.

This EIR also will be used by the responsible agencies with permit jurisdiction over certain aspects of the Project, such as the California Department of Fish and Game (DFG), for streambed alterations; the California Department of Transportation (Caltrans), for any I-580 encroachment; and other approving agencies. Chapter 2 describes these responsible-agency approvals further.

Terminology

To assist readers in understanding this EIR, terms used are defined as follows.

- *Project* means the whole of an action that has the potential for resulting in a physical change in the environment, directly or ultimately.
- *Environment* means the physical conditions that exist in the area and would be affected by a proposed project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historical or aesthetic significance. The area involved is the area in which significant direct or indirect impacts would occur because of the Project. The environment includes both natural and artificial conditions.
- *Impacts* analyzed under CEQA must be related to a physical change. Impacts comprise:

- direct or primary effects that are caused by the proposed Project and occur at the same time and place; or
- indirect or secondary effects that are caused by the proposed Project and are later in time or farther removed in distance but still reasonably foreseeable, including growth-inducing impacts and other effects related to induced changes in the pattern of land use, population density, or growth rate, and related effects on air and water and other natural systems, including ecosystems.

- *Significant impact on the environment* means a substantial, or potentially substantial, adverse change in any of the physical conditions in the area affected by the Project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance. An economic or social change by itself is not considered a significant effect on the environment. A social or economic change related to a physical change may be considered in determining whether the physical change is significant.
- *Mitigation* consists of:
  - avoiding the impact altogether by not taking a certain action or parts of an action;
  - minimizing impacts by limiting the degree or magnitude of the action and its implementation;
  - rectifying the impact by repairing, rehabilitating, or restoring the affected environment;
  - reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; or
  - compensating for the impact by replacing or providing substitute resources or environments.
- *Cumulative impacts* refers to two or more individual impacts that, when considered together, are considerable or that compound or increase other environmental impacts. The individual impacts may be changes resulting from a single project or separate projects. The cumulative impact from several projects is the change in the environment that results from the incremental impact of the Project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.

This EIR uses a variety of terms to describe the level of significance of adverse impacts. These terms are defined as follows.

- **Less-than-Significant Impact:** an impact that is adverse but does not exceed the defined thresholds of significance. Less-than-significant impacts do not require mitigation.
- **Potentially Significant Impact:** an environmental effect that may cause a substantial adverse change in the environment; however, additional information is needed regarding the extent of the impact to make the

determination of significance. For CEQA purposes, a potentially significant impact is treated as if it were a significant impact.

- **Significant Impact:** an impact that exceeds the defined thresholds of significance and would or could cause a substantial adverse change in the environment. Mitigation measures are recommended to eliminate the impact or reduce it to a less-than-significant level.
- **Significant and Unavoidable Impact:** an impact that exceeds the defined thresholds of significance and cannot be eliminated or reduced to a less-than-significant level through the implementation of mitigation measures.

Organization of the EIR

The EIR is organized in the following chapters.

- "Executive Summary" presents a brief summary of the Project; summarizes the impacts and mitigation measures; identifies areas of known controversy, including issues raised by agencies and the public; and identifies unresolved issues. This chapter also summarizes the proposed Project's growth-inducing impacts, cumulative impacts, significant and unavoidable impacts, and significant irreversible impacts.
- Chapter 1, "Introduction," explains the purpose of this EIR, defines terms used in the analysis, and discusses the environmental review process.
- Chapter 2, "Project Description," describes the Project.
- Chapter 3, "Environmental Analysis," is devoted to resource topics. For each resource, data relevant to the environmental setting is presented. The impacts of the proposed Project on the resource are evaluated in terms of significance, and mitigation measures are identified. As the lead agency, the City is responsible for determining which mitigation measures are appropriate.
- Chapter 4, "Other CEQA Considerations," presents the analysis of the proposed Project's cumulative and growth-inducing impacts. Significant and irreversible, as well as significant and unavoidable, environmental changes are identified in this chapter. The analysis of alternatives considered is presented in this chapter also.
- Chapter 5, "References Cited," lists printed references consulted and personal communications conducted in preparation of this EIR.
- Chapter 6, "List of Preparers," lists the EIR authors, the technical specialists and members of the production team, and other key individuals who assisted in the preparation and review of this EIR.
- Technical appendices with supporting data and information are presented at the end of this EIR.

Agencies that May Use the EIR

This EIR may be used by several responsible or trustee agencies that also have review authority over the proposed Project. As stated in State CEQA Guidelines 15231:

> A final EIR prepared by a Lead Agency or a Negative Declaration adopted by a Lead Agency shall be conclusively presumed to comply with CEQA for purposes of use by Responsible Agencies which were consulted pursuant to Sections 15072 or 15082 unless one of the following conditions occurs:
>
> a. The EIR or Negative Declaration is finally adjudged in a legal proceeding not to comply with the requirements of CEQA, or
>
> b. A subsequent EIR is made necessary by Section 15162 of these Guidelines.

The various local, state, and federal agencies that may use the EIR are identified in Chapter 2, "Project Description."

Environmental Review Process

The City distributed a notice of preparation (NOP) of a draft EIR for the proposed Project on May 16, 2006 (Appendix A). The NOP was distributed for a 30-day comment period that ended on June 22, 2006. The City held an agency and public scoping meeting on the proposed Project on June 8, 2006. The scoping meeting was an opportunity for agencies and the public to obtain information about the proposed Project and to provide input regarding the issues they wanted addressed in the draft EIR. Comments about the NOP were considered in the preparation of the EIR. Appendix A also contains written comments received about the NOP.

CEQA does not require formal hearings at any stage of the environmental review process (State CEQA Guidelines 15202[a]). However, it does encourage "wide public involvement, formal and informal ... in order to receive and evaluate public reactions to environmental issues" (State CEQA Guidelines 15201).

The EIR is available for review and comment by the public, responsible agencies, organizations, and other interested parties for a 45-day period. Comments must be received either electronically or physically by 5 p.m. on the last day of the comment period. All comments or questions about the EIR should be addressed to:

City of Livermore Community Development Department
Planning Division
1052 S. Livermore Avenue
Livermore, CA 94550
Attn: Susan Frost, Principal Planner

Comments on the EIR received during the review period will be used to prepare a final EIR (FEIR). The FEIR will include written responses to all comments received and will be made available for public review before consideration of the FEIR and the Project by the Livermore Planning Commission and City Council. The Planning Commission will hold a public hearing before it considers certification of the EIR.

Chapter 2
Project Description

Background

In 2004, the City adopted a comprehensive update to the General Plan (City of Livermore 2004a) in which the City designated several parcels east of El Charro Road, south of I-580, and north and west of the Las Positas Golf Course as land suitable for Business/Commercial Park (BCP) uses. The City also has adopted certain road, trail, and other infrastructure plans for this area, known as the El Charro area.

Property owners within the El Charro area have expressed interest in the City preparing a specific plan to address future land uses and development of the area. A specific plan could address, in a coordinated manner, the interests of a variety of property owners and agencies in terms of both development potential and the provision of infrastructure necessary to serve it. A specific plan also could assist in planning for and addressing larger issues in the El Charro area, including circulation improvements, traffic safety, flood control, water storage, and conveyance systems.

In order to facilitate the buildout of the El Charro area consistent with the General Plan, circulation and recreational improvements will be required. To provide for unified and consistent planning for the Project Area, the City has decided to prepare the City of Livermore El Charro Specific Plan, including General Plan Amendments to ensure Specific Plan consistency with the General Plan. An applicant, Prime Outlets Livermore Valley LLC, also has prepared specific site plans and will be seeking site plan approval, design review, a planned development district, a development agreement, tentative subdivision maps, and grading, building, and other permits from the City for its project, Prime Outlets Livermore Valley, concurrently with and immediately subsequent to approval of the Specific Plan. Another owner has proposed a church facility but has not yet submitted a complete application for land use entitlements.

The City also decided to prepare this EIR to analyze the Specific Plan, development proposals within the Specific Plan Area, and the associated infrastructure improvements. These elements make up the proposed Project and are discussed in more detail below.

Project Location and Ownership Patterns

Specific Plan Area

The 250-acre Specific Plan Area is located on the western side of Livermore, in eastern Alameda County (see Figure 2-1 and Figure 2-2). The Specific Plan Area is roughly rectangular in shape except where it follows Arroyo Las Positas on the eastern edge. The Specific Plan Area is approximately bounded by I-580 on the north, El Charro Road on the west, active mining quarries and undeveloped quarry land to the south, and the Las Positas Golf Course to the east. The Arroyo Las Positas bisects portions of the Specific Plan Area.

Downtown Livermore is located approximately 3.5 miles to the east of the Specific Plan Area. The City of Pleasanton is located west of the Specific Plan Area. Land to the north, north of I-580, is within the City of Dublin, unincorporated Alameda County, and the City of Livermore (Figure 2-2).

The Specific Plan Area contains approximately 152 acres of private land, 83 acres owned by the City, and 15 acres owned by the Alameda County Flood Control and Water Conservation District (Zone 7 Water Agency [Zone 7]). Figure 2-3 shows the parcels included in the Specific Plan Area.

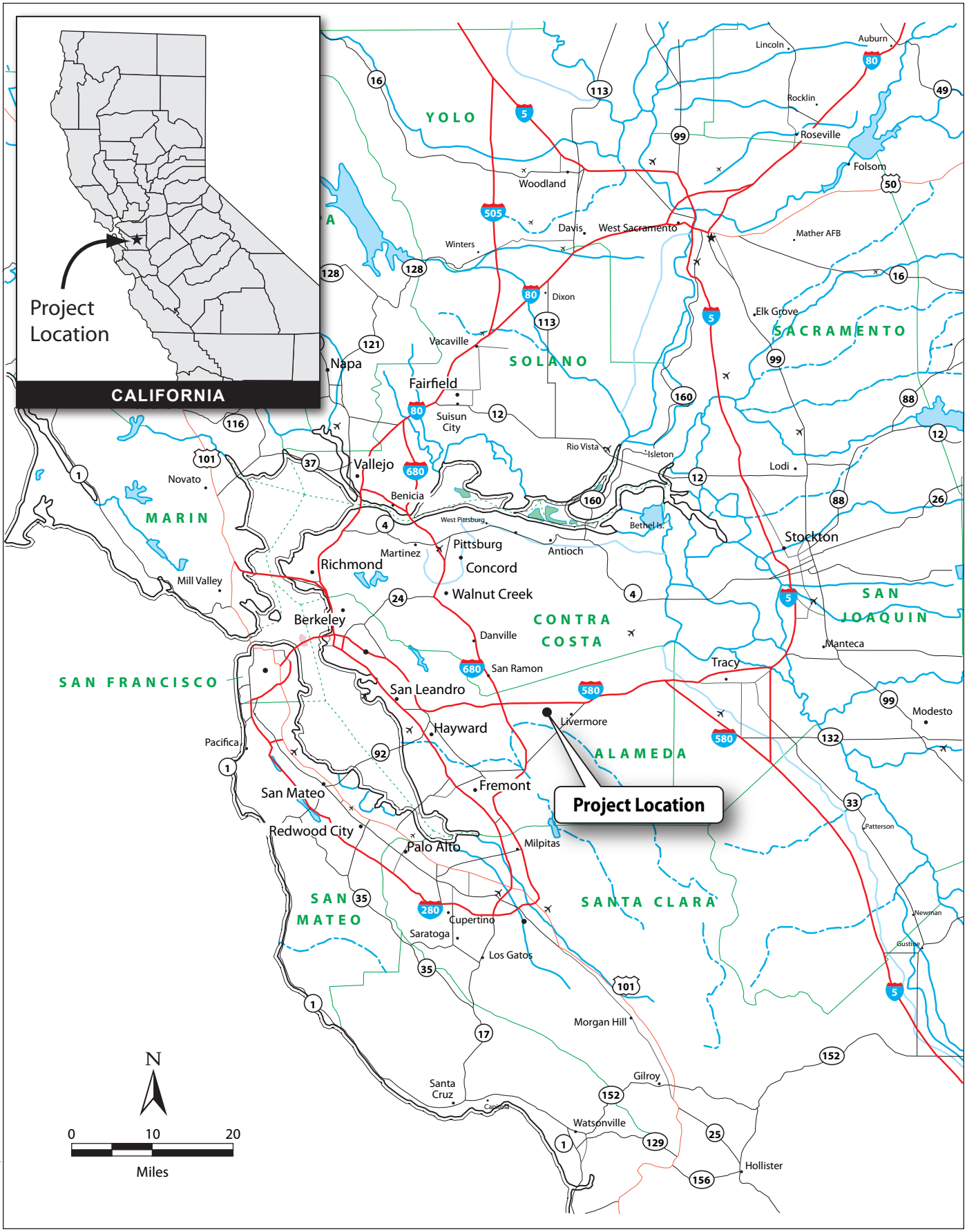
Project Area

As shown in Figure 2-2 , the Project Area extends beyond the limits of the Specific Plan Area and includes the corridors for two options of an east-west major road extension as well as areas for other proposed infrastructure outside of the Specific Plan Area. The east-west corridors include the area for an extension of either Jack London Boulevard or Airway Boulevard. Both roadway options would cross Arroyo Las Positas and would pass through portions of the Las Positas Golf Course.

Existing Conditions

The 250-acre Specific Plan Area is generally flat and historically has been in agricultural production. One parcel is actively leased to a driving range. A portion of the northeastern parcel (also referred to as the Freisman property because Freisman was the last name of the former owner) is a small farm complex of six housing units and associated agricultural buildings that are accessible via a private drive. The remainder of the Specific Plan Area is owned by the City and Zone 7 and used either as part of a flood control program or as a buffer to the airport.

The Arroyo Las Positas traverses the Project Area from northeast to southwest and is lined with large trees and bushes. The far western portion of the Arroyo

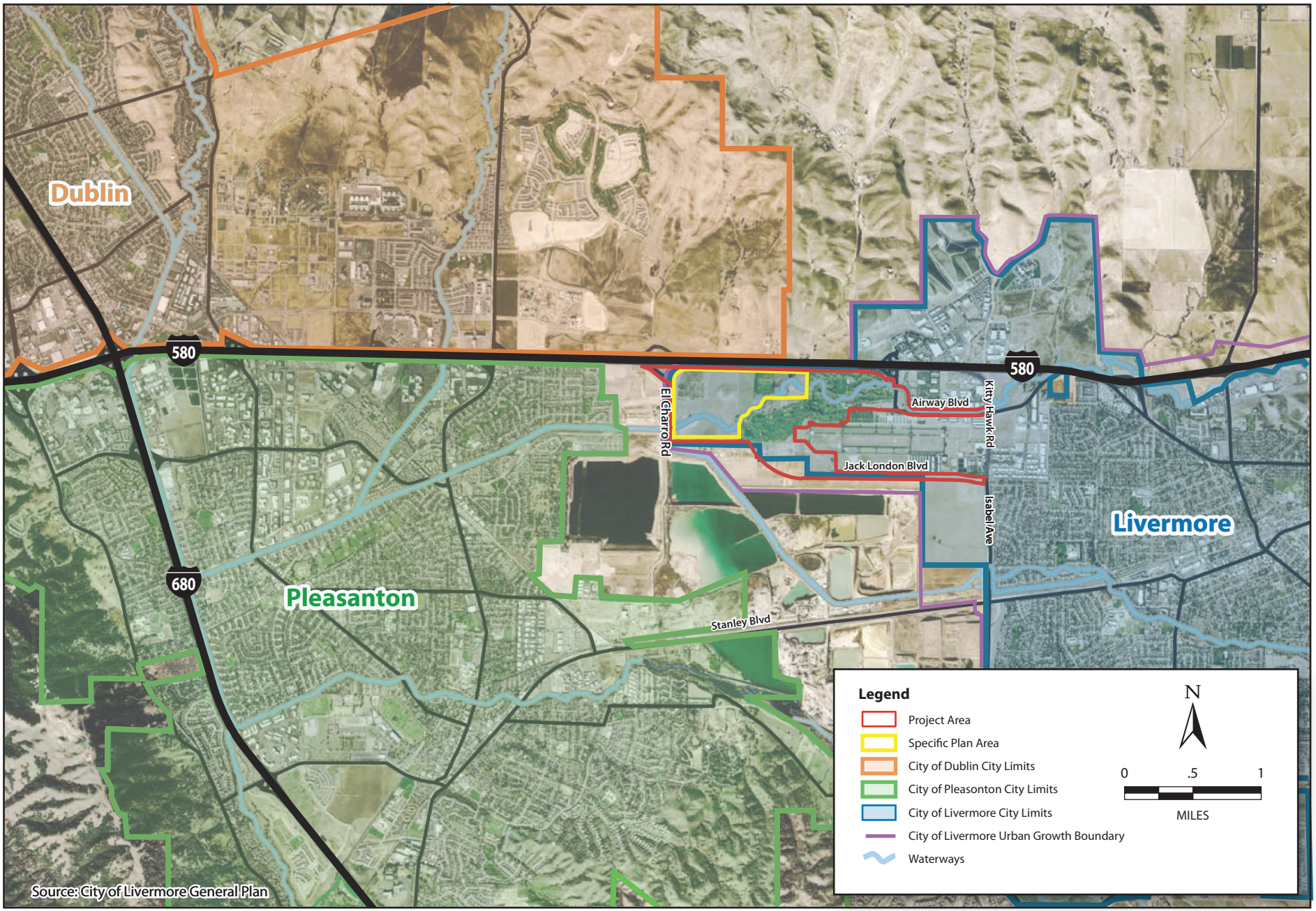


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Figure 2-1
Regional Location

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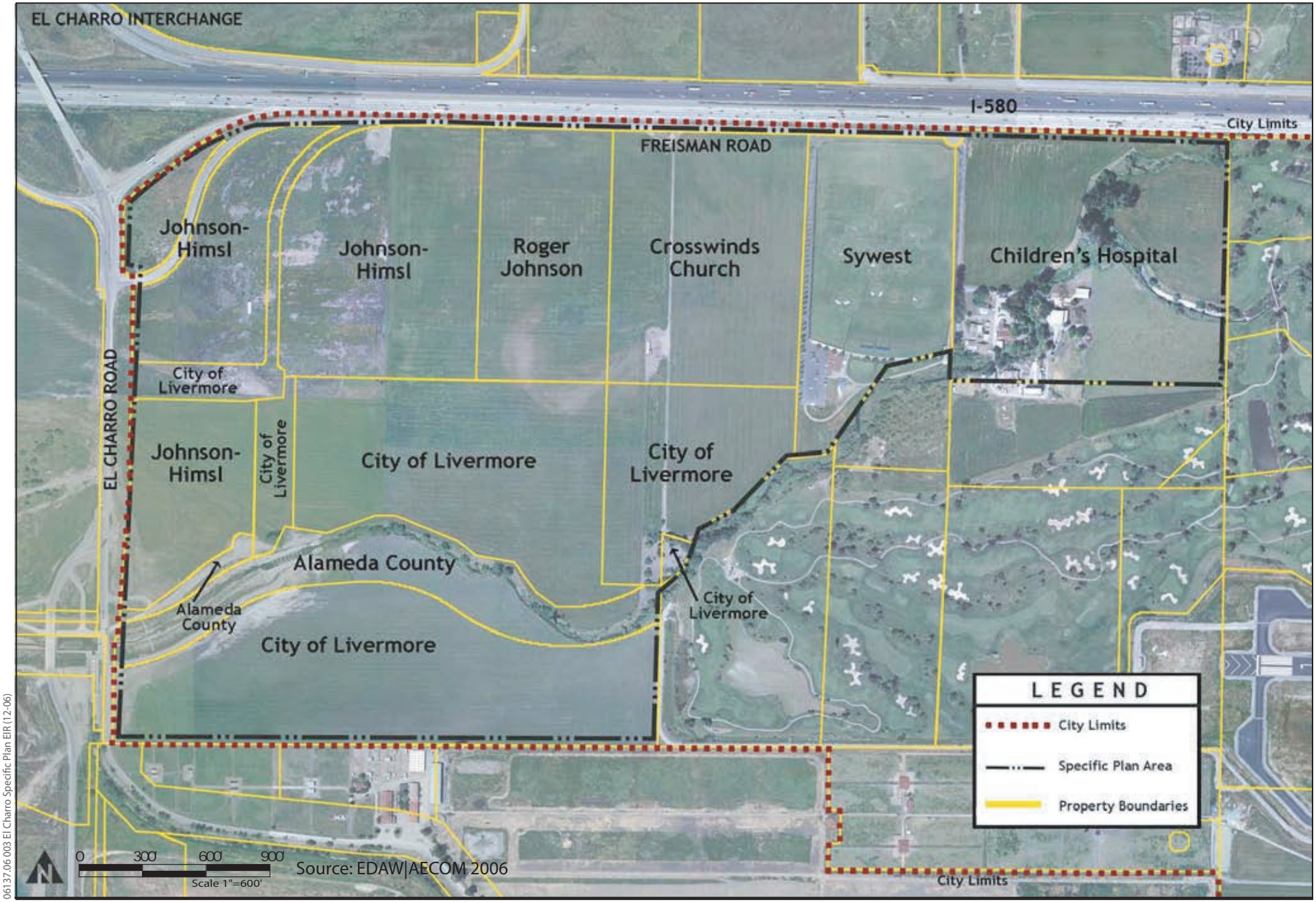


06137.06 003 El Charro Specific Plan EIR (01-07)

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Figure 2-2
Project Location

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06137.06 003 El Charro Specific Plan EIR (12-06)

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Figure 2-3
Property Ownership

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Las Positas has been channelized; however, the remainder of the creek within the Las Positas Golf Course and Specific Plan Area remains natural, with a capacity currently capable of conveying less than would be generated by a 15-year storm. Within the Specific Plan Area, Cottonwood Creek, located mostly north of I-580, is the only tributary to Arroyo Las Positas. It flows south under I-580 and meets Arroyo Las Positas on the northeastern parcel of the Specific Plan Area.

The land to the west of the Project Area is undeveloped, unincorporated private land under the land use jurisdiction of the County. However, this land is under consideration for annexation into the City of Pleasanton as part of the Staples Ranch project, which would include uses such as auto dealerships, a recreational skating rink, and a senior residential facility (see a more detailed description of this proposed project below). The land to the northwest (across I-580) is within the City of Dublin city limits, and a section of this land is planned for development under a specific plan by the City of Dublin. The land to the northeast (across I-580) is in unincorporated Alameda County. The Las Positas Golf Course and Livermore Municipal Airport are located adjacent to the Specific Plan Area to the east. The land to the south includes agricultural land that is a mineral resource area owned by quarry operators. Further south of the agricultural land are active gravel quarries, two of which are slated for future use as regional storage lakes in Zone 7's Stream Management Master Plan (SMMP). South of Freisman Road, El Charro Road is privately owned by quarry operators.

Existing General Plan Land Use and Zoning Designations

The General Plan designates the majority of the Specific Plan Area as BCP, which allows a Floor Area Ratio (FAR) of 0.3 to 0.5. The FAR is defined as the maximum gross floor area allowed on a particular site divided by the net area of the site. The FAR is expressed as a decimal percentage of floor area within the total lot size. BCP areas are required to be a minimum of 20 acres, located in the general vicinity of the freeway and typically along major streets.

The entire Specific Plan Area is zoned as Planned Development (PD) in the Livermore Planning and Zoning Code (LPZC), requiring any development proposals to obtain site plan approval by the City. The City-owned parcels in the southern half of the site are designated as Limited Agriculture (LDAG) (see Figure 2-4).

Project Objectives

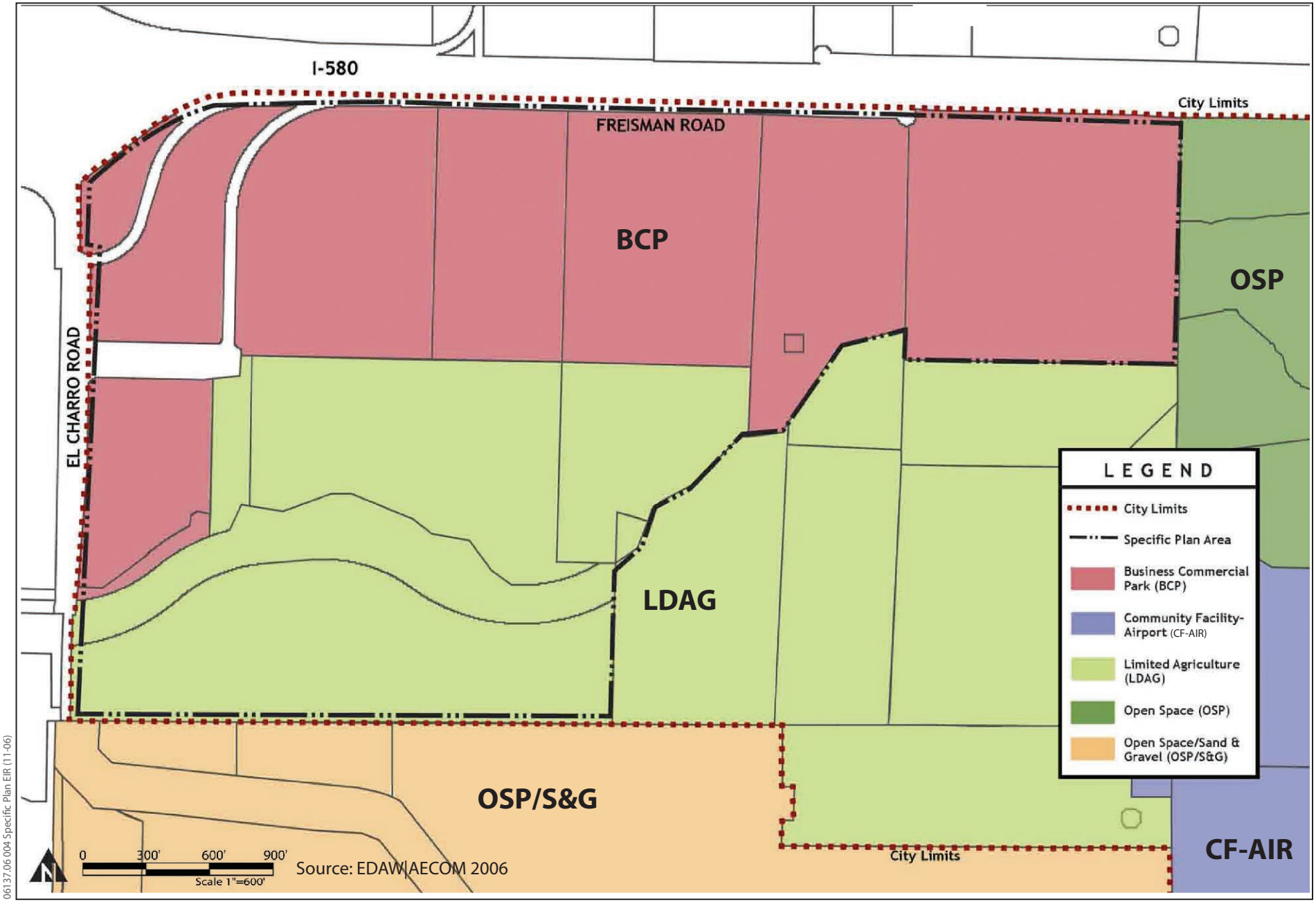
The objectives of the proposed Project are to:

- formulate a specific plan that requires high quality development consistent with the goals and vision of the General Plan;
- ensure development is consistent with Scenic Corridor policies and objectives as they exist now or as they may be modified as part of the Project;
- provide a major east-west roadway connection between State Route (SR) 84 and El Charro Road;
- participate in planning full improvements for El Charro Road that accommodate capacity and safety concerns of Specific Plan properties and surrounding land uses;
- realign and upgrade Freisman Road as part of circulation improvements;
- provide a new roadway to improve access to the properties located in the eastern and southern parts of the Specific Plan Area;
- identify and implement a funding plan to ensure the provision of public infrastructure necessary to serve El Charro development. Consider and incorporate other agency and landowner projects in the specific program, where feasible, requiring funding by those entities for those studies pertaining to projects or facilities that may involve the Project Area or the larger El Charro area (e.g., additional improvements to El Charro Road, Zone 7 diversion channel, etc.);
- plan for development that is compatible with surrounding land uses, including quarries and the Livermore Municipal Airport;
- ensure protection of environmentally sensitive assets through the formulation of a specific plan designating appropriate development envelopes and environmental mitigations;
- include policies in the Specific Plan that encourage coordination with other appropriate entities in planning and implementing current and future phased improvements to the El Charro/I-580 interchange and creek and flood control system; and
- create certainty regarding development potential and streamline the permit process to require consistency between the Specific Plan and environmental document. Create a specific plan that provides a positive climate for business investment, minimizes risk, and (through a property-based funding mechanism such as an assessment district) allocates costs for improvements and benefits received in a prudent and equitable manner among participating property owners.

Project Elements and Description

The proposed Project includes a number of distinct elements.

- General Plan Amendments.
- Specific Plan, including:



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Figure 2-4
General Plan Land Use Designations

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  - a land use program;
  - design guidelines and standards;
  - circulation and infrastructure goals and policies;
  - circulation improvements;
  - utilities and infrastructure improvements; and
  - open space, community facilities, and services.
- Williamson Act contract cancellation and/or transfer.
- Las Positas Golf Course redesign.
- Development projects within the Specific Plan Area.
- Development agreements.
- Financing mechanisms.
- Phasing of public improvements.

Each of these elements is described further below. The physical elements of the proposed Project are shown in Figure 2-5a and Figure 2-5b.

El Charro Specific Plan

The Specific Plan describes in detail the proposed development of the Specific Plan Area, the land use program, circulation and other infrastructure improvements, and plan implementation and administration. The Specific Plan identifies the necessary backbone infrastructure, its phasing, and the funding sources and mechanisms necessary to serve development and other identified needs of the Specific Plan Area. The Specific Plan has been developed in accordance with California Government Code 65451 and includes a coherent policy framework and development standards that incorporate the multiple goals and objectives of landowners and agencies in the area.

The Specific Plan, in accordance with California Government Code 65451, includes all of the following in detail:

- the distribution, location, and extent of the uses of land, including open space, within the area covered by the plan;
- the proposed distribution, location, and extent and intensity of major components of public and private transportation, sewage, water, drainage, solid waste disposal, energy, and other essential facilities proposed to be located within the area covered by the plan and needed to support the land uses described in the plan;
- standards and criteria by which development will proceed, and standards for the conservation, development, and utilization of natural resources, where applicable;

- a program of implementation measures, including regulations, programs, public works projects, and financing measures necessary to carry out the above items; and
- a statement of the relationship of the Specific Plan to the General Plan.

Land Use Program

Proposed Land Uses/Zoning Districts

The Specific Plan follows the General Plan's land use recommendation for the area, further refining and developing alternatives that will fit within the current BCP land use designation. The focus of the Specific Plan is on community/regional commercial uses and associated support services. The Specific Plan would establish three new zoning districts that specify development standards and permitted uses, consistent with the General Plan. All commercial developments within the Specific Plan Area are permitted a maximum FAR of 0.3. If all of the properties designated as one of the two retail zones described below are developed at a 0.3 FAR, the City would gain approximately 1.5 million square feet of retail space within the Specific Plan Area (EDAW|AECOM 2006).

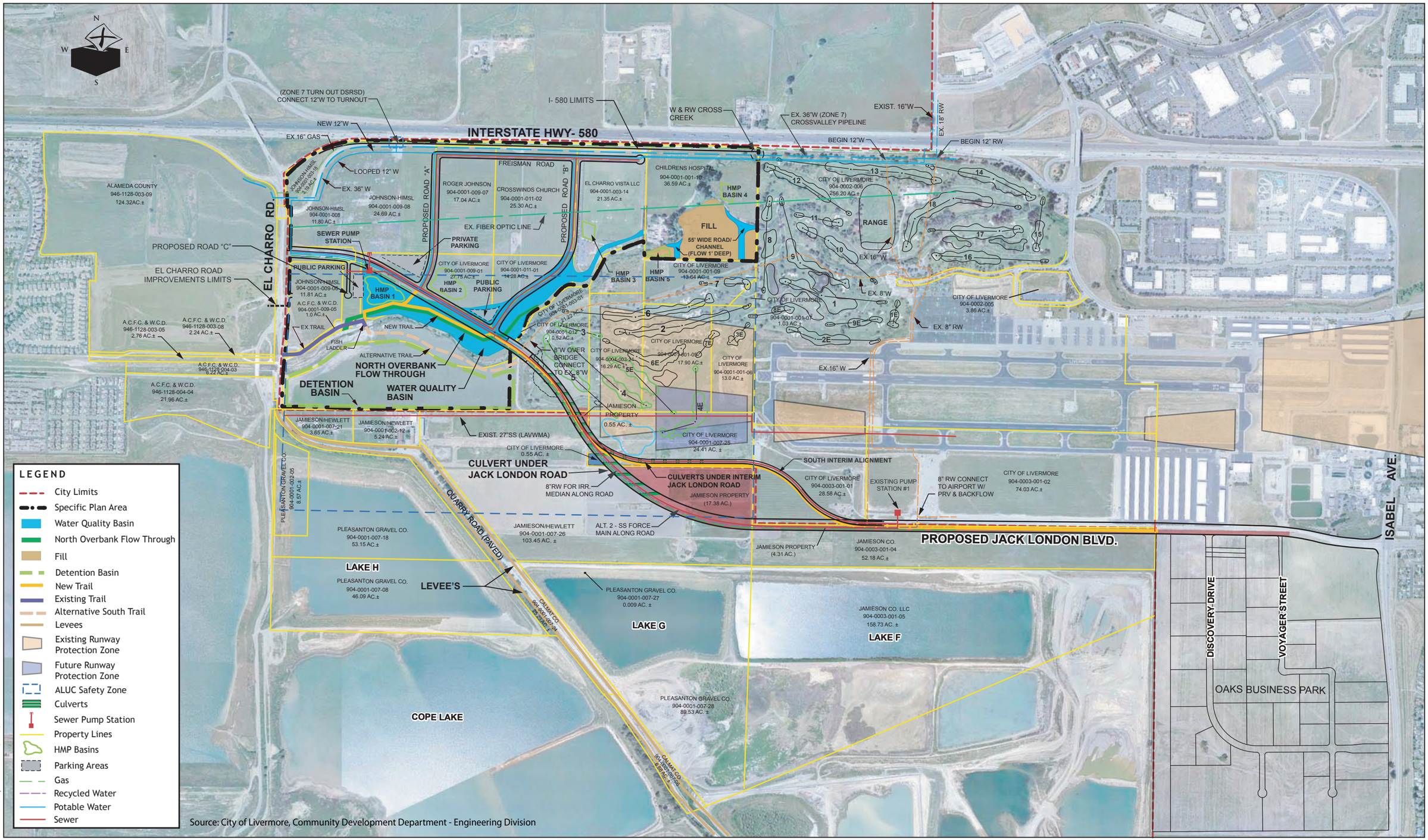
The proposed zoning districts, shown in Figure 2-6, include:

- **Planned Development–El Charro Specific Plan–Regional Commercial (PD-ECSP-RC)**, which accommodates medium to higher end, regionally serving retail, service commercial, and entertainment uses not currently found in the Tri-Valley area;
- **Planned Development–El Charro Specific Plan–Highway Regional Commercial (PD-ECSP-HRC)**, which accommodates highway-serving commercial uses and provides an area near the freeway interchange for uses serving the traveling public and limited commercial uses that need freeway exposure; and
- **Planned Development–El Charro Specific Plan–Open Space (PD-ECSP-OS)**, which accommodates open space uses such as grazing, agriculture, temporary parking, and passive, nonintensive recreation opportunities (e.g., picnicking and multiuse trails).

As described in Chapter 7 of the Specific Plan, when there are discrepancies between the Specific Plan and the LPZC, the Specific Plan will control. Where the Specific Plan is silent on certain issues, such as definitions or procedures, the LPZC will control (EDAW|AECOM 2006).

Regional Commercial (PD-ECSP-RC)

Commercial development within the Specific Plan Area may have a maximum FAR of 0.3. The PD-ECSP-RC zone is proposed for the majority of the Specific Plan Area, on approximately 152 acres. All of the PD-ECSP-RC-proposed parcels have frontage to I-580. Typical floor plans within this designation would range from 2,400 square feet to a maximum of 150,000 square feet. The

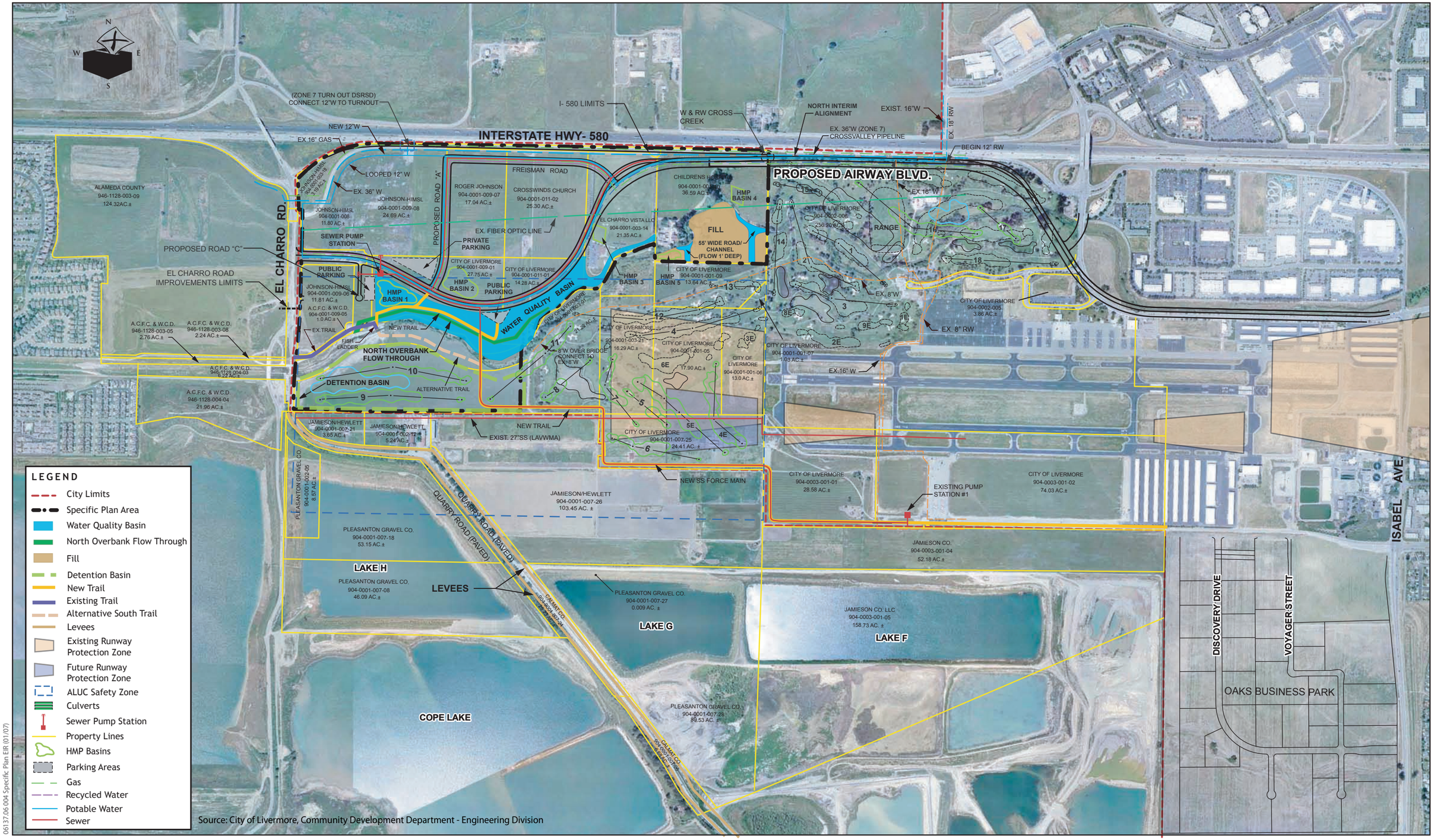


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Figure 2-5a
Proposed Project - Jack London Boulevard Extension Option

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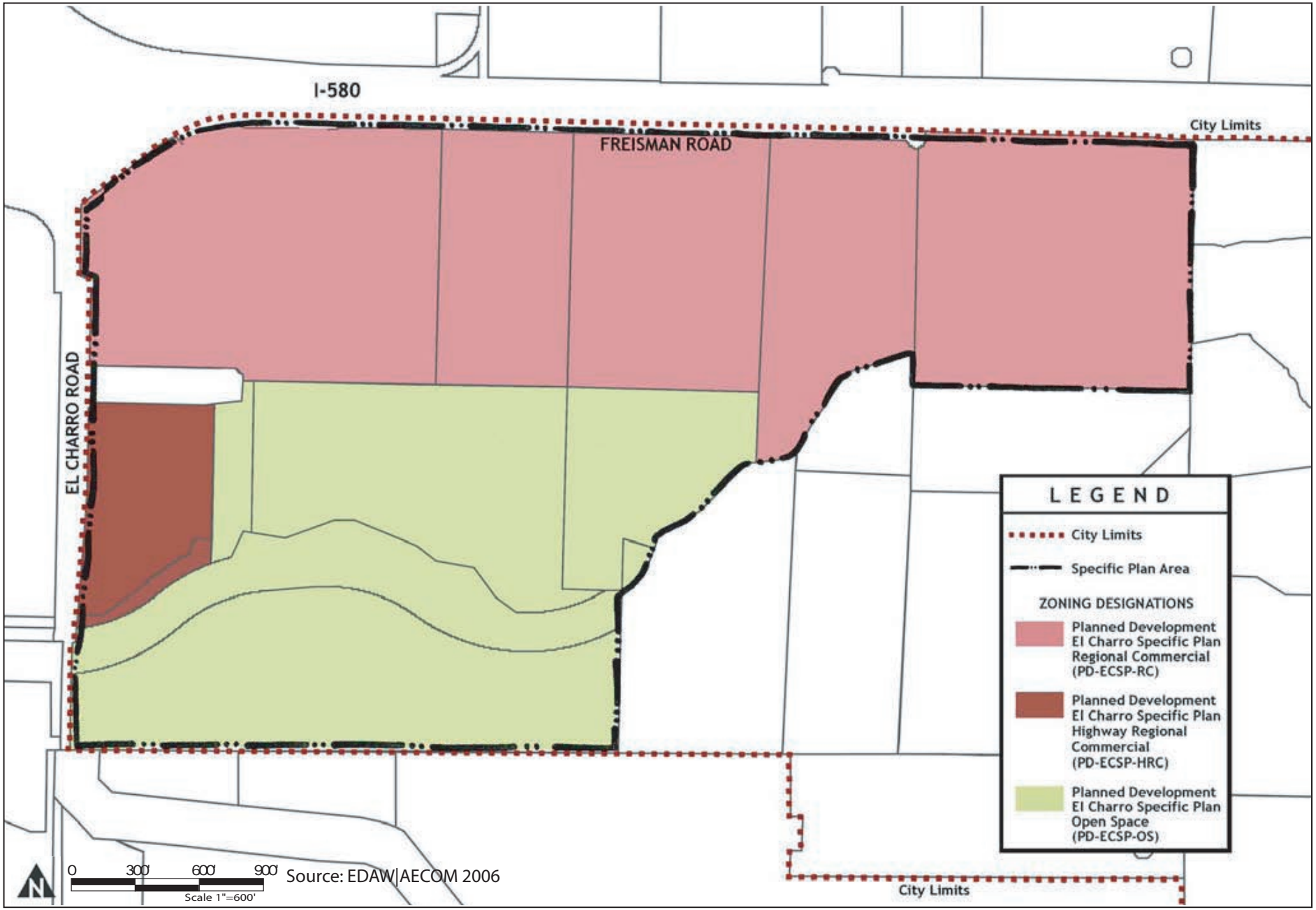


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Figure 2-5b
Proposed Project - Airway Boulevard Extension Option
Northern Alignment

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Figure 2-6
Zoning Designations

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minimum parcel size would be 1 acre of proposed development incorporated in a minimum 5-acre conceptual plan for phased development of a site. Retail uses envisioned for this designation include regional retail, food, and entertainment; subregional retail; midbox retail; and lifestyle services. A complete list of the types of uses permitted within parcels zoned PD-ECSP-RC is included in Table 2-1.

Highway Regional Commercial (PD-ECSP-HRC)

The PD-ECSP-HRC zone is proposed for the approximately 12-acre Johnson-Himsl parcel contiguous to El Charro Road and bordering the southern right-of-way of the proposed Jack London/Airway Boulevard extension . This zone would be in close proximity to I-580 and would allow such uses as hotels, gas stations and restaurants, and other freeway-dependent uses, including those that cater to interstate travelers. The minimum parcel size would be 1 acre of proposed development incorporated in a minimum 5-acre conceptual plan with main access points and circulation spines, future pad sites, and common areas or infrastructure and easements necessary to facilitate appropriate and orderly buildout of the site. A complete list of the types of uses permitted within parcels zoned PD-ECSP-HRC is included in Table 2-2. This is a combining district that also allows the uses specified in the PD-ECSP-RC zoning district.

Development on the Johnson-Himsl parcel will be generally clustered in the northerly portions of the property. Limited lower intensity development will be allowed in other portions of the property providing it does not encroach into emergency landing areas, avoids concentration of development along an alignment consistent with the runway centerline, and does not pose a hazard to air navigation.

Land uses will be generally consistent with density standards contained in the Safety Zone Policies of the Alameda County Airport Land Use Policy Plan (Alameda County Airport Land Use Commission 1986). Uses are defined as compatible when not exceeding a density of 25 persons per net acre over an 8-hour period, or a density not exceeding 50 persons per net acre for more than two hours per day.

All properties within the Specific Plan Area will be required to record avigation and noise easements prior to development, to ensure full disclosure and consistency with the objectives for land use compatibility with the Livermore Municipal Airport and the Alameda County Airport Land Use Commission Plan.

Table 2-2. Planned Development–El Charro Specific Plan–Highway Regional Commercial (PD-ECSP-HRC) Permitted Uses

Use	Use Classification
Primary Uses	
All uses permitted in the PD-ECSP-RC district, including those listed below:	Permitted
Retail Uses	
Automobile service stations subject to the requirements of LPZC 3-10-070	Permitted
Drive-in facilities	Permitted
Fast food business	Permitted
All uses conditionally permitted in the PD-ECSP-RC district	Conditionally permitted
Accessory Uses	
Retail Uses	
Food stores (as an accessory to service stations)	Permitted
Signs	Permitted

Source: EDAW|AECOM 2006.

Open Space (PD-ECSP-OS)

The approximately 97-acre proposed PD-ECSP-OS zone is located south of the proposed retail development area. Aside from providing a buffer for the Livermore Municipal Airport, this zone is intended to protect the Arroyo Las Positas as a natural resource and its role in flood and stormwater management for the Livermore Valley area. Approximately 46 acres of this zone, located north of Arroyo Las Positas, would include a small picnic area, benches along pathways, a trailhead near the existing fish ladder, a new flood control bypass channel with a new outlet to the creek, a water quality treatment swale and a detention basin. Two to three small parking areas with 10 to 15 parking stalls each would be provided for access to this area along with a driveway leading to the pump station and multiuse trail bridge, serving as an emergency vehicle access (EVA). Subject to Federal Aviation Administration (FAA) authorization, the PD-ECSP-OS zone permits overflow parking to serve adjacent retail development and the new pump station. Use of City land for overflow parking also requires the Airport Manager's execution of a lease agreement. The parking areas in this zone would be paved but would be visually discernible from the primary parking areas to the north.

The 35-acre open space south of the Arroyo Las Positas is divided from the rest of the Specific Plan Area by the Arroyo, and the western portion would remain primarily as it is today, as a natural open space area. The eastern portion would be graded to restore the natural detention area lost because of Specific Plan Area development. Nonintensive recreation facilities, such as a golf green and picnic areas, are permitted in this area, and the proposed compacted earth trail would be improved to be a multiuse trail paved to Class I bike trail standards

Table 2-1. Planned Development–El Charro Specific Plan–Regional Commercial (PD-ECSP-RC) Permitted Uses

Use	Use Classification
Primary Uses	
Automotive Sales and Service	
New automotive dealers, including accessory used auto sales, and excluding auto wrecking and salvage and gasoline sales	Permitted
Boat and RV sales	Conditionally permitted
Auto centers in conjunction with a department store or as part of a shopping center/mall development	Conditionally permitted
Service repair and installation businesses, only when directly appurtenant to uses listed under permitted uses in this district	Conditionally permitted
RV storage on Children's Hospital property	Conditionally permitted
Commercial Amusement and Entertainment	
Amusement centers	Conditionally permitted
Bowling alleys	Conditionally permitted
Skating rinks (ice and roller)	Conditionally permitted
Miniature golf courses	Conditionally permitted
Tennis courts	Conditionally permitted
Consumer Services	
Cocktail lounges	Permitted
Day spas	Permitted
Fitness centers/exercise facilities	Permitted
Parking facilities	Conditionally permitted
Restaurants, except for nightclubs	Permitted
Drive-in facilities	Conditionally permitted
Fast food businesses	Conditionally permitted
Personal Service Shops	
Pharmacies	Permitted
Salons and cosmetic sales	Permitted
Schools of music and dance	Permitted
Studios, photographers, and artists	Permitted
Institutional Uses	
Public and quasi-public or institutional uses	Conditionally permitted
Travel Accommodations	
Hotel	Permitted
Motel	Permitted

Use	Use Classification
Retail Uses	
Apparel and accessories	Permitted
Bakeries	Permitted
Bicycle sales and service	Permitted
Furniture	Permitted
Home furnishings and appliances	Permitted
Garment stores	Permitted
General merchandise stores (department stores)	Permitted
Miscellaneous retail, including only candy or ice cream stores, drug stores, hobby or craft shops, liquor stores, newsstands, specialty shops, variety stores, pet stores, and computer stores	Permitted
Nursery sales and garden supplies	Conditionally permitted
Regional shopping centers	Permitted
Similar uses and other retail businesses or service uses determined by the zoning administrator to be of the same general character as the uses listed in this section	Permitted
Similar uses and other retail businesses or service establishment determined by the decision-making body approving the conditional use permit to be of the same general character as the conditional uses listed in this section	Conditionally permitted
Accessory Uses	
Offices	
Administrative	Permitted
Business	Permitted
Dental	Permitted
Medical	Permitted
Optical	Permitted
Professional	Permitted
Signs	Permitted

Source: EDAW|AECOM 2006.

(EDAW|AECOM 2006). A complete list of the primary land uses within parcels zoned PD-ECSP-OS is included in Table 2-3.

Table 2-3. Planned Development–El Charro Specific Plan–Open Space (PD-ECSP-OS) Permitted Uses

Use	Use Classification
Primary Uses	
Agricultural Activities	
Cultivation of field crops, fruit and nut trees, vines, vegetables, and horticultural specialties	Permitted
Grazing, livestock, and poultry	Permitted
Processing, production, and storage facilities for products grown on-site	Conditionally permitted
Agricultural structures when located within 500 feet of the PD-ECSP-RC and Education and Institutions districts (Ord. 442 § 4.22)	Conditionally permitted
Agricultural structures located more than 500 feet from any land zoned PD-ECSP-RC or Education and Institutions	Conditionally permitted
Public and Quasi-Public Uses	
Golf	Permitted
Incidental and accessory structures and uses located on the same site as a permitted use	Permitted
Recreation Facilities	
Picnicking areas	Permitted
Multiuse trails	Permitted
Retail sales of products grown on the premises, or in the local area, from roadside stands not exceeding 50 square feet in floor area; and hay, grain, and feed	Conditionally permitted
Surface parking facilities	Conditionally permitted

Source: EDAW|AECOM 2006.

General Plan Amendments

A General Plan Amendment is proposed related to the Visual Scenic Corridor Policies in the Community Character Element as they apply to the Specific Plan area. The proposed amendment, with new text shown in underline and deleted text in strikethrough, reads as follows and amends the current language for Subpart 6:

c. Subpart 6A extends from El Charro Road to the west to Airway boulevard to the east. The western half consists of the <u>El Charro Specific Plan Area</u> ~~nearly level agricultural fields and undeveloped parcels~~. Las Positas Golf Course comprises the eastern half. ~~A golf driving range is located in the center of the Subpart, with fields on either side. Farmhouses, barns and other structures relative to local agriculture are located within this area.~~

~~A 2.2 degree view angle is established for this Subpart to preserve views of the ridgelines.~~ Subpart 6A is further separated into four divisions:

(1) Division 6A-1, "Gateway Location, extends approximately 1,700 feet to the east from the centerline of El Charro Road and makes up about one-quarter of Subpart 6A. All development within this Division must comply to the following requirements:

a. The maximum structure height limit shall be 50-feet;

b. 90% of projections into the view plane shall be 13 feet or less;

c. 10% of projects into the view plane may be 25 feet or less;

d. Projections into the view plane shall encompass an area of no more than 1.25% of total site area; and

e. Projections into the view plane shall have a total of no more than 45% of the entire site frontage.

(2) Division 6A-2 extends approximately 2,300 feet to the east of the eastern termination of Div. 6A-1 and makes up about one quarter of Subpart 6A. A 2.2 degree view angle is established for Div. 6A-2.

(3) Division 6A-3, "Public/Quasi Public Use" extends approximately 1,300 feet east from the eastern termination of Division of 6A-2 and makes up one-eighth of Subpart 6A.

If general development other than institutional development is proposed for this section, the established view angle is 2.2 degrees.

If institutional development is proposed for this section, development must comply to the following requirements:

a. The maximum structure height limit shall be 40-feet;

b. 100% of projections into the view plane shall be 15 feet or less;

c. Projections into the view plane shall encompass an area of no more than 2.6% of total site area; and

d. Projections into the view plan shall have a total of no more than 20% of the entire site frontage.

(4) Division 6A-4 extends approximately 3,400 feet east from the eastern termination of Division 6A-3 and terminates at Airway Boulevard, and makes up about three-eights of Subpart 6A. A 2.2 degree view angle is established for Div. 6A-4.

The proposed Project also includes consideration of an alternate east-west road extension: Airway Boulevard between Isabel Avenue/SR 84 and El Charro Road. Should this alternate roadway extension be selected, the Project would include consideration of a General Plan Amendment to include this roadway in the

Circulation Element and remove the Jack London Boulevard Extension, which is presently in the General Plan.

Williamson Act Contract Cancellation and/or Transfer

The parcel owned by Children's Hospital is currently under a Williamson Act farmland contract. A Notice of Non-Renewal has been filed by the property owners and an exchange or transfer of easements will be required by the City as part of the proposed Project. The proposed Project includes consideration of approval of the Notice of Non-Renewal and easement exchange or transfer on this parcel.

Design Concept

The primary uses in the Specific Plan Area would be regional-serving retail stores whose design and layout would take cues from Livermore's historical character, including agriculture and viticulture traditions seen throughout the existing community. All development must be designed to:

- reflect the quality and character of Livermore's 150 years of agriculture and viticulture heritage, while contributing to its thoughtful transition into a modern city in the Bay Area;
- be distinguishable from neighboring communities, through the use of materials and design elements indicative of Livermore's natural surroundings and high quality of life;
- enhance the I-580 Scenic Corridor and recognize this area as the main western entrance into Livermore;
- foster aesthetic continuity throughout the development, in part by the careful selection and use of harmonious materials and complementary design elements;
- minimize the potential visual impacts of parking lots, service areas, utilities, and mechanical equipment; and
- create a vibrant retail center with an authentic character, void of overly themed or exaggerated design concepts.

Design Guidelines and Standards

The Specific Plan includes design guidelines and standards that would be used as criteria for developers when preparing specific development proposals and by City staff when reviewing these proposals. These criteria serve multiple purposes: to provide a cohesive visual identity for the Specific Plan Area, to comply with Scenic Corridor requirements, to reflect the City's character due to the prominent western gateway location, and to facilitate the permitting and planning process. The design guidelines and standards indicate minimum

requirements, and developers may be required to meet additional requirements in order to meet the stated intent of the Specific Plan.

The design guidelines and standards for the Specific Plan Area address issues of FAR, setbacks, height limits, massing, and bulk. The standards are codified under the proposed El Charro zoning district classifications.

This EIR analyzes the full, maximum possible buildout of the Specific Plan Area and associated other improvements as limited by the guidelines and standards contained in the Specific Plan. The design guidelines and standards as well as goals and policies that define the Project analyzed in this EIR are contained in Chapters 3 through 7 of the Specific Plan. These guidelines, standards, goals, and policies address:

FAR	Signage
Site layout	Parking lot design
Pedestrian and public spaces	City gateway and entry corridor design
Building setbacks	Landscape design
Building design, height, and orientation	Services and utilities
Building and site lighting	Circulation, including pedestrians and bicycles
Stormwater treatment and conveyance	Community facilities, recreation, and open space

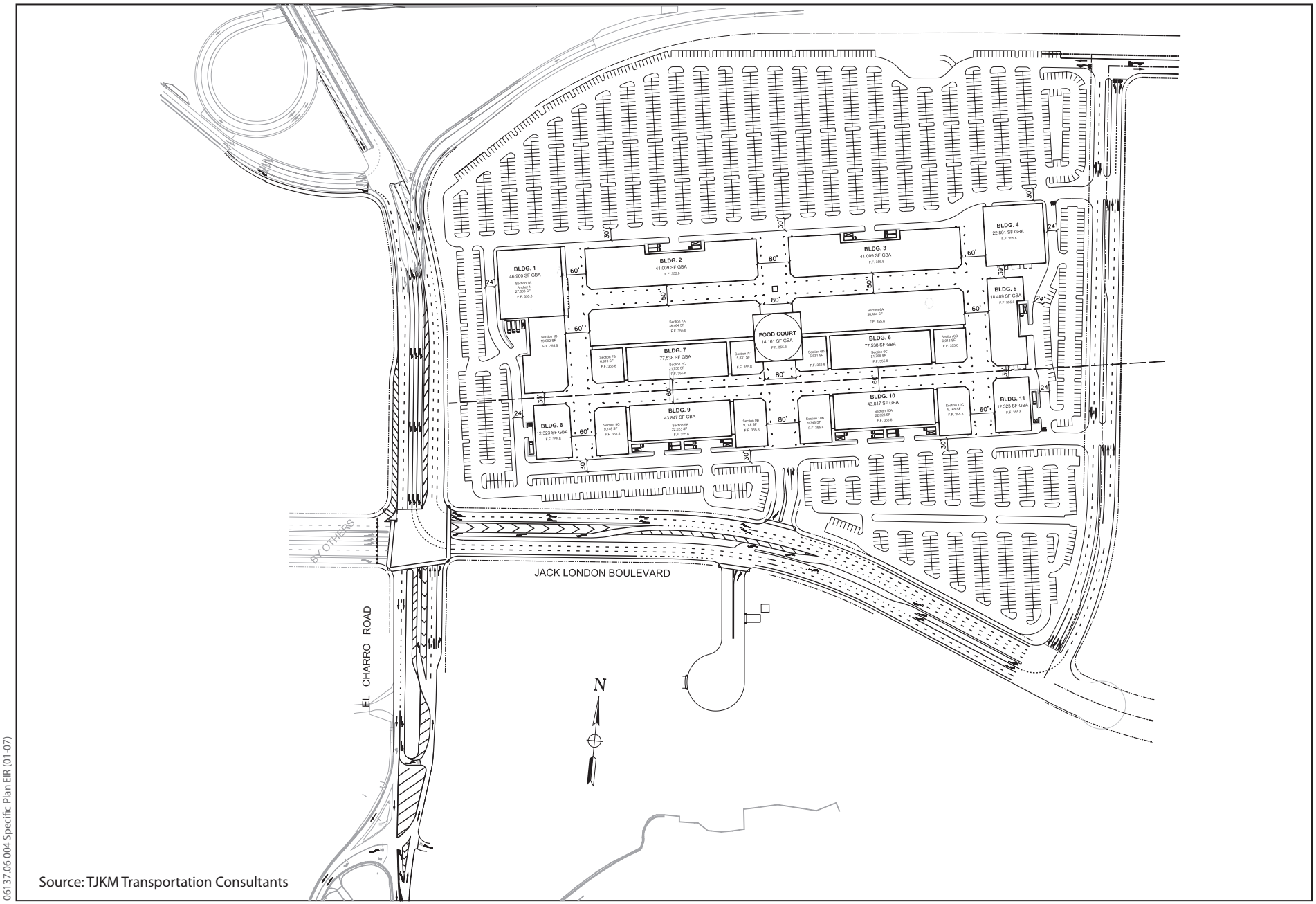
Circulation Improvements

New roadways and improvements to existing roadways are proposed within and outside of the Specific Plan Area. Figures 2-5a and 2-5b and Figure 2-7 show the location of the proposed improvements and options.

Improvements within the Specific Plan Area

El Charro Road Improvements

El Charro Road anticipated improvements involve widening the road to five lanes between the interchange and the proposed Jack London/Airway Boulevard extension (described in detail below) and connecting I-580 with Jack London/Airway Boulevard. Additional turn lanes and a traffic signal would be installed at this intersection, as well. Because of the number of vehicles that are anticipated to travel on El Charro Road and the limited distance to merge to and from freeway ramps, no additional intersections or project access driveways would be permitted between I-580 and Jack London/Airway Boulevard other than those needed for emergency vehicle access.



Source: TJKM Transportation Consultants

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Figure 2-7
El Charro Road Conceptual Alignment

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South of Jack London/Airway Boulevard, El Charro Road would be widened to provide three northbound lanes across the frontage of specific plan parcels. A right-turn exit only from one parcel is proposed in this area. South of the Specific Plan Area, El Charro Road would continue to provide primary access to the quarry lands. The conceptual design for El Charro Road has accounted for ingress and egress of quarry traffic and has minimized merging and lane changes for quarry trucks. To further minimize potential safety conflicts, safety lighting meeting Caltrans standard requirements would be installed at each El Charro Road intersection within the Project Area.

A cross-section diagram of the proposed El Charro Road lane structure at Jack London/Airway Boulevard is shown in Figure 4-6 in the Specific Plan. Figure 2-7 shows a plan view of the proposed improvements on this roadway.

Planning for El Charro Road is being coordinated with the County, Vulcan Materials Company, and the City of Pleasanton because of the parallel planning for the Staples Ranch Project and because El Charro Road is a County road. Because of previously expressed concerns about existing levels of quarry-related traffic on El Charro, the City has coordinated to the extent possible with quarry operators regarding the assessment of traffic impacts on El Charro Road and the development of feasible mitigation for any significant impacts relating to quarry traffic.

Realignment of Freisman Road

Freisman Road would be realigned to provide proper functioning of the interchange with El Charro Road and local access within the Specific Plan Area, and to accommodate additional width needed for future I-580 improvements. Freisman Road would be shifted to the south along I-580 in order to accommodate the potential expansion of I-580, being proposed by Caltrans as a separate project, as well as the 50-foot vineyard buffer along this portion of Freisman Road. In this area Freisman Road would serve as a two-lane collector, providing multiple access points to the retail development sites via Road A and Road B (described below). In addition, the existing intersection with El Charro Road would be removed.

Road A

Road A would be a four-lane road running north and would run in a north-south direction from the realigned Freisman Road to the proposed Jack London/Airway Boulevard, along the boundary between the Prime Outlets Livermore Valley property and the Roger Johnson property (see Figures 2-5a and 2-5b).

Road B

If the Jack London Boulevard Extension option is selected, Road B also is planned in order to improve vehicular circulation, providing additional access points for patrons and delivery vehicles. Road B would run from Jack London Boulevard to Freisman Road east of Road A and northwest of the Arroyo and would not cross the Arroyo. Road B generally would run north from Jack London Boulevard and would terminate at an intersection with Freisman Road (see Figures 2-5a and 2-5b). This road would be a two-lane collector roughly centered on the property line between the Crosswinds Church property and the

Sywest property. However, the precise alignment would be determined as part of the approval process entitling specific developments on these parcels.

Road C

Road C would provide access to the proposed multiuse trail, pump station, and development in the southwest area of the Specific Plan. Road C would be a cul-de-sac generally running south from Jack London/Airway Boulevard along the edge of the City property.

Transit Service

Demand for transit service, such as extension of existing bus routes or creation of new routes will likely increase as retail development within the Specific Plan Area occurs. The City is working with the Livermore Amador Valley Transit Authority to extend public bus service to the Specific Plan Area. As development within the Specific Plan Area occurs, the City will review opportunities to serve the Specific Plan Area by transit. Consistent with the Specific Plan, development plans would include adequate space and access points for bus routing and stops. Safe pullout locations for bus stops along Jack London/Airway Boulevard would be provided to avoid impeding traffic flow along this main thoroughfare. These stops would be located adjacent to main pedestrian access points. Where appropriate, internal bus stop locations would be provided to enable direct access to retail storefronts and an enhanced level of convenience for transit riders.

Specific Plan Bicycle Network

Consistent with Circulation Policy 4.3.2 in Chapter 4 of the Specific Plan, Class II bicycle lanes (on-street lanes solely for bicyclists) or shoulders that can accommodate bicycle lanes would be provided where appropriate within the Specific Plan Area. The Specific Plan design guidelines (Chapter 3 of the Plan) also require provisions for bicycle parking at the ratio of 10% of the required off-street parking. Additionally, the multiuse trail along Arroyo Las Positas would be paved south of the Arroyo to Class I bicycle standards. Direct access to this trail from Jack London/Airway Boulevard would be provided along connections from the proposed Jack London/Airway Boulevard intersections with either Road A (Airway Boulevard Extension option) or both Road A and Road B (Jack London Boulevard Extension option). Two locations south of the roadway would be provided for vehicle parking (10–15 stalls each) to assist with access to the multi-use trail.

Pedestrian Facilities

Pedestrian facilities would include the regional multiuse trail along the Arroyo, discussed below. A number of connections would be established between the trail and parks and the commercial developments to the north and west and would be directed toward major intersections in order to facilitate crossing.

Sidewalks would be provided along all City streets serving developed frontages and would be designed to meet Specific Plan standards, which include a minimum width of 5 feet. Pedestrian crossing would be allowed only at signal-controlled intersections along major streets to help minimize conflicts between pedestrian and vehicular traffic. Internal pedestrian circulation would include

pedestrian connections from parking areas to commercial storefronts, sidewalks wider than the minimum required, and connections between retail developments. Segments of the Jack London/Airway Boulevard Extension that have no developed frontage are planned as rural arterials with no sidewalks. In these areas, the multiuse trail would serve pedestrians.

Jack London/Airway Boulevard Extension

A major street extension is proposed to connect El Charro Road to either Jack London Boulevard or Airway Boulevard east of the Specific Plan Area. The roadway extension would consist of a 131-foot right-of-way between El Charro Road and Road A. Within the Specific Plan Area, the roadway would have three lanes eastbound, three to four lanes westbound, swales on either side, and a planted median between El Charro Road and Road A. The remaining extension, east of Road A, ultimately would be a four-lane roadway within an 88-foot right-of-way. The roadway extension would include a new free-span bridge crossing at the Arroyo Las Positas, culverts under the roadway, and would have the same western connection with El Charro Road. This roadway would not be a designated truck route.

Two corridor options (see Figures 2-5a and 2-5b]), extending west to the Specific Plan Area and El Charro Road, are being considered:

- the improvement and extension of Jack London Boulevard with a southern alignment from the existing section of Jack London Boulevard south of the airport near Isabel Avenue across the southwest edge of Las Positas Golf Course; and
- the widening and extension of Airway Boulevard from Kitty Hawk Road with a northern alignment through the northern limits of Las Positas Golf Course, curving to the north to cross the Arroyo Las Positas and continuing west to cross Cottonwood Creek before connecting with El Charro Road.

For either option, the road would initially be two lanes east of Road A with future widening to four lanes. Portions of the road may have an interim alignment with future relocation to an ultimate alignment. This interim extension would be constructed during the initial stage of development to provide connectivity to El Charro Road and improvements to emergency access.

Jack London Boulevard Extension Option

The alignment for the extension of Jack London Boulevard, shown in Figure 2-5a, would begin just south of the Livermore Municipal Airport and west of the Oaks Business Park (in development). The roadway would continue westerly adjacent to the airport and golf course and then northwesterly to cross through the southwest corner of the Las Positas Golf Course before crossing Arroyo Las Positas and entering the Specific Plan Area to connect to El Charro Road. This alignment would require the roadway to be raised along the southeast edge of the golf course to allow for passage of floodflows prior to crossing the Arroyo Las Positas northwest to El Charro Road. Approximately twenty-five (25) culverts

would be required under the roadway twelve (12) feet wide by five (5) feet high south of the creek crossing to allow the passage of floodflows. This alignment would also require a redesign of the southern portion of the Las Positas Golf Course where the roadway crosses it (see below for details).

A portion of this alignment crosses lands designated as a mineral resource zone. If this option is selected, prior to the initiation of construction, the City would exchange portions of the City-owned parcel remnant south of the Jack London Boulevard Extension with the remnant of privately owned land north of the alignment to replace the loss of mineral-resource property. See Figure 2-5b for the location of the land that would be exchanged.

The ultimate Jack London Boulevard alignment would have two travel lanes in each direction, swales on both sides of the roadway, and turn lanes at intersections. Bicycle lanes would be accommodated where space permits, but sidewalks would not be constructed, except adjacent to developed parcels, which would be generally west of Road A. An off-street trail would be provided, which is more consistent with the rural character of the area. This alignment is consistent with the City's General Plan Circulation Element.

Airway Boulevard Extension Option

The alignment for the extension of Airway Boulevard, shown in Figure 2-5a, would begin at the intersection of Kitty Hawk Road and Airway Boulevard. Airway Boulevard would be widened to the Las Positas Golf Course and then would be extended across the northern portion of the golf course across Arroyo Las Positas east of the Specific Plan Area. The roadway then would cross Cottonwood Creek and the northern part of the Children's Hospital property and then curve southwest across the Sywest and Crosswinds Church parcels before joining the connection to El Charro Road. A connection to Road B would be included near the Sywest and Crosswinds Church parcel boundary. This alignment option also would require redesigning a portion of the Las Positas Golf Course layout.

The ultimate Airway Boulevard alignment would have two travel lanes in each direction and swales on both sides of the roadway. Bicycle lanes would be accommodated where space permits, but sidewalks would not be constructed, because of space limitations where this road passes through the golf course. This alignment would require an amendment to the City's General Plan Circulation Element.

Interstate 580 Interchange

The proposed Project includes improvements to the I-580 interchange at El Charro Road. These improvements are in addition to interchange improvements the City of Dublin is planning as part of the East Dublin Specific Plan area (see Adjacent Projects, below). The proposed Project would add a second right turn lane at the eastbound offramp. This would include widening the fill area within existing Caltans right-of-way. The eastbound onramp would be realigned within Caltrans right-of-way to accommodate the widening of El Charro Road. The

southbound overcrossing of I-580 on El Charro Road would also be restriped to add a second southbound through lane.

Circulation Improvement Phasing

Some of the circulation improvements may be constructed in phases depending on the schedule of the various retail developments. Initial improvements would include improving and constructing El Charro Road, Jack London/Airway Boulevard between El Charro Road and Road A, and Road A itself. A two-lane Jack London/Airway Boulevard Extension easterly from Road A would be needed to provide a local connection and police and fire access between the Specific Plan Area and the rest of the City's local street system. An EVA along one of these two alignments would be required. If the complete Jack London/Airway Boulevard Extension cannot be constructed prior to the opening of the retail establishments, the EVA may be provided along the multiuse trail alignment. The EVA would be for use during construction until the bridges over the Arroyo Las Positas or Cottonwood Creek were complete.

Other Circulation Improvements

Regional Multiuse Trail

An extension of the Class I (off-street pathway) regional multiuse trail, which would include separate pedestrian/bicycle and equestrian facilities, is planned beginning in the east at Jack London Boulevard and the western boundary of the proposed Oaks Business Park development. This trail would run in a westerly direction along the south side of the proposed Jack London Boulevard Extension option. The trail would then either cross the Arroyo Las Positas near the southeastern corner of the Specific Plan Area and continue along the north side of the Arroyo or follow along the southern side of the Arroyo and cross over to the northern side on a new pedestrian bridge near the fish ladder. The trail would continue westerly and cross under El Charro Road on an existing trail along the channel that connects with a regional trail immediately west of El Charro Road.

A typical section of the ultimate multiuse trail would have a 25-foot right-of-way, with a 2-foot shoulder, an 8-foot decomposed granite equestrian trail, a 3-foot separation, a 10-foot paved trail, and another 2-foot shoulder.

Signage would provide identification of locations through the Specific Plan Area that may include bicycle, horse staging, and parking areas; directions; and safety warnings at intersections. The City or other appropriate agency would be responsible for maintaining the multiuse trail.

It is anticipated that a two-lane Jack London/Airway Boulevard Extension would provide a secondary route for emergency vehicles to access the Specific Plan Area. However, if the construction of the roadway is delayed, the trail will be designed as an interim EVA. The interim EVA trail would be 16 feet wide, with a 4-foot decomposed granite trail for equestrians and a 12-foot aggregate base for

pedestrians and bicyclists. Radii at roadway elbows would be wide enough to allow fire truck turning movements, and the trail would allow EVA and provide turnaround sites for emergency vehicles. A 16-foot wide clear span bridge out of the floodway would be constructed to accommodate a 70,000-pound truck. A paved trail would connect to the main trail at the Jack London/Airway Boulevard intersection with Road A and also with Road B if the Jack London Boulevard Extension option is selected.

Utilities and Infrastructure Improvements

Storm Drainage, Flood Control/Water Quality Improvements

Portions of the Specific Plan Area are within the floodplain of the Arroyo Las Positas. During flood events, the floodplain acts as a detention basin and limits peak downstream storm flows in the City of Pleasanton. Development within the floodplain could have an impact on regional hydrology during a flood event. In addition, the Specific Plan Area contains portions of the area conceptually planned by Zone 7 for a future flood control bypass facility.

A new storm drainage system for the Specific Plan Area has been designed to discharge directly into the Arroyo Las Positas after first being treated and detained to meet Regional Water Quality Control Board (RWQCB) permit requirements and City standards. Because the storm drainage system would not tie into the existing City storm drainage system, it is not evaluated in the 2004 Storm Drainage Master Plan. The storm drainage system would be sized according to the City's 2005 Storm Drainage Facility Guidelines and Storm Drain Utility Master Plan, and current stormwater regulations. The site storm drainage system and site design must work together with stormwater quality control devices that both treat and delay the water reaching the creek in such a way that the drainage off the developed site matches the pre-project flows. Floodflows must also be detained to compensate for the loss of natural regional detention due to filling in the floodplain.

Zone 7, the lead agency responsible for regional flood protection, is currently developing its Chain of Lakes Master Plan that would work together with its Stream Management Master Plan (SMMP). The SMMP identifies a bypass channel to Cope Lake as the ultimate flood control improvement in the El Charro area. Zone 7 is now embarking on an SMMP Implementation Plan. However, active quarrying precludes the construction of the ultimate planned improvement in the near term. The City is coordinating with Zone 7 on developing interim, phased improvements that are consistent with the SMMP. The storm and flood control improvements proposed in the Specific Plan have been developed in coordination with Zone 7.

Flooding currently impacts 51 acres of the 152 acres of the properties proposed for development in the Specific Plan Area, as well as portions of the Livermore Municipal Airport and Las Positas Golf Course and existing City infrastructure

between Isabel Avenue and El Charro Road. The proposed flood control improvements would remove the developable property from the floodplain in the Specific Plan Area. A Conditional Letter of Map Revision (CLOMR) would be filed with the Federal Emergency Management Agency (FEMA) prior to construction of the Arroyo and basin improvements, and a Letter of Map Revision (LOMR) would be filed after construction and prior to the acceptance by the City of the constructed improvements. The CLOMR will reflect the effects of the proposed Project as well as floodplain changes not currently shown on FEMA maps that resulted from previous channel modifications.

The proposed flood control improvements described below are primarily intended to remove the commercial property within the Specific Plan Area from the floodplain and replace the storage lost due to removing the commercial land from the 100-year floodplain.

South Flood Control Detention Basin

The proposed Project would increase the volume of the natural storage basin area south of the Arroyo Las Positas by 10% to 20%. This would require grading on the 32-acre parcel south of the Arroyo Las Positas to provide 60 acre-feet (af) of flood storage. The grading limits would be set back 50 feet from both El Charro Road to the west and 100 feet from the Arroyo Las Positas to the north. This remaining 26 acres of land would be contoured to form three fairways, if the Airway Boulevard Extension option is selected, to replace the golf course fairways impacted by the road alignments. The fairways would be raised to keep them out of the floodplain while the remaining land would be lowered to elevation 352 feet. The total amount of excavation would amount to approximately 158,000 cubic yards with 60,000 cubic yards of fill to provide for a net excavation of 98,000 cubic yards of soil. Excess soil would be used within the Project Area for fill associated with other project components. The underdrain system on the south side of the creek that would be installed to ensure that the remaining standing water in the basin would drain within 48 hours. This is a design requirement for all basins to prevent mosquitoes from breeding and waterfowl from gathering under the airport flight path. Additionally, a north overbank grading and channel would be required to capture flood flows and redirect them into the creek (see Figures 2-5a and 2-5b).

North Overbank Grading and Channel

A north flood bypass channel is proposed, along with the water quality treatment and mitigation features, on the 40 acres of land to the north of the Arroyo Las Positas. This bypass channel would be set back 100 feet from the Arroyo bank. This channel would be graded to approximately 20 feet wide, 5 feet deep, and 2,800 feet long with four 5-foot-by-5-foot culverts and weir structure draining the flows into the improved section of the Arroyo Las Positas. Approximately 11,500 cubic yards of excavation would be required to create this flood bypass channel. Standing water flows through new culverts would be conveyed through a new underdrain system ensuring standing water would be drained within 48 hours.

Stormwater Treatment and Detention

The following improvements address the water quality treatment for up to 50% of the Specific Plan Area. A minimum of 50% of water quality treatment would be done on each site as it develops. Most of the hydromodification impacts on the creeks would be addressed with basins within the North Multiuse Park/Open Space Area. Additional basins will be required on the individual parcels that do not readily connect to the North Multiuse Park/Open Space Area. Pursuant to section C.3 of the City's NPDES permit, the stormwater treatment measures incorporated within this Project must, at a minimum, meet the hydraulic sizing criteria for volume or flow capacity. The basins described herein are necessary to detain flows to match pre-project flows. These basins must be designed to comply with the NPDES permit and City standards.

Water Quality Swales and Basin

Water quality swales and basins are proposed to mitigate for the hydromodification impacts of the entire Specific Plan development and up to 50% of the water treatment of the stormwater runoff. To achieve this, 5 additional small basins approximately 20-feet wide and 200-feet long are proposed. The swales would be approximately 10 feet wide and 1 foot deep leading from each of the development sites to each basin. The elevation at the lowest point of the basin would range from approximately elevation 352 to 360 with a maximum depth of 8 feet. All elements would have underdrain systems that drain any remaining ponded water into the Arroyo Las Positas.

Wastewater Improvements

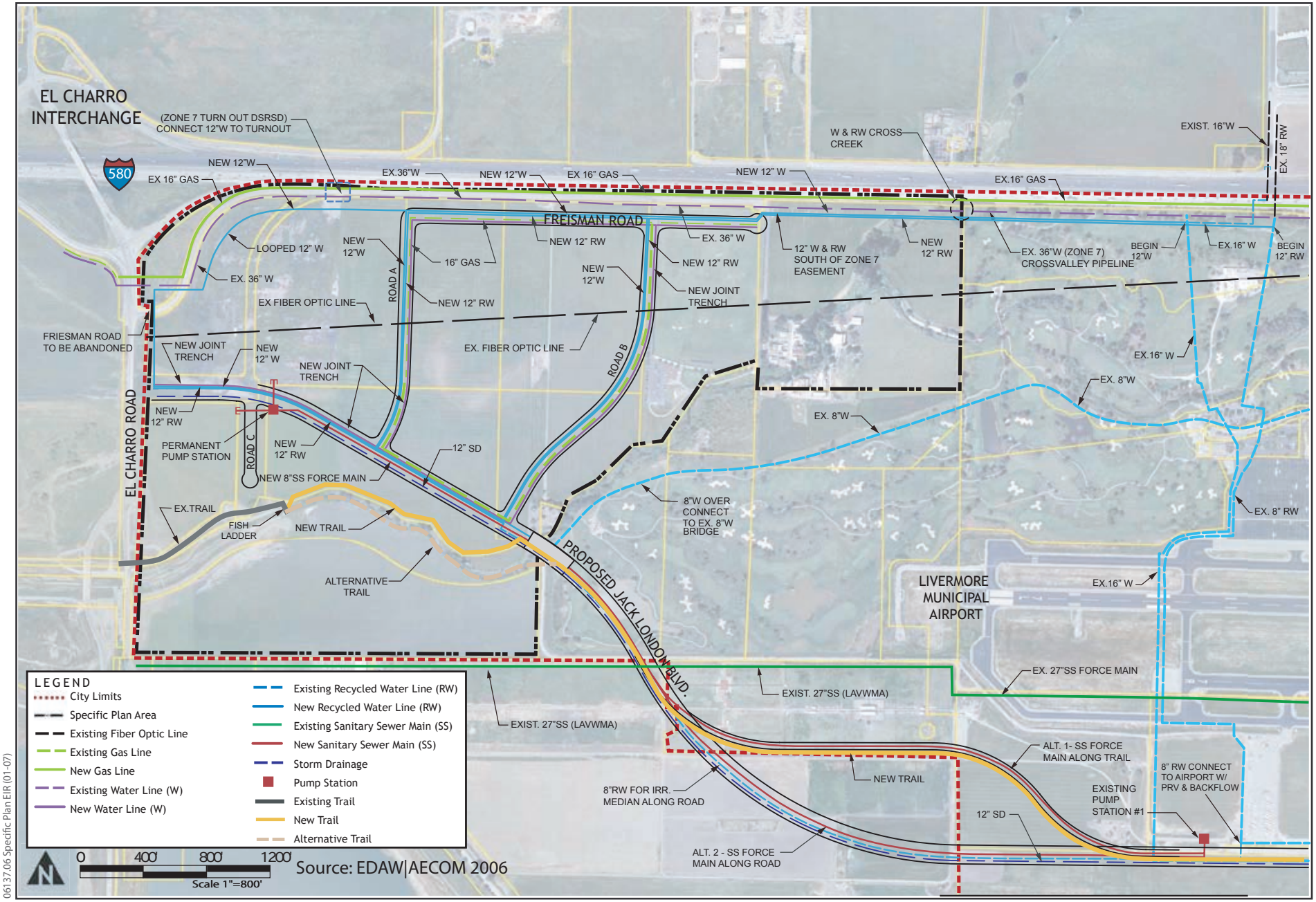
The City's Sewer Master Plan (City of Livermore 2004b) identifies the major sewer infrastructure proposed to serve the Specific Plan Area, including a new pump station with a capacity of 325,000 gallons per day. The new pump station is needed because the Specific Plan Area is at a lower elevation than the Water Reclamation Plant, located to the southeast. As part of the Project, a force main and a new Specific Plan Area pump station would be constructed. The pump station would discharge through the new force main into the existing trunk line that feeds the airport pump station at the west end of Jack London Boulevard. A local sewer collection system would be constructed.

Water

The locations for potable and recycled water facilities proposed for the Specific Plan Area are shown in Figures 2-8 and 2-9 for each of the roadway extension options. These water lines are described further below.

Potable Water

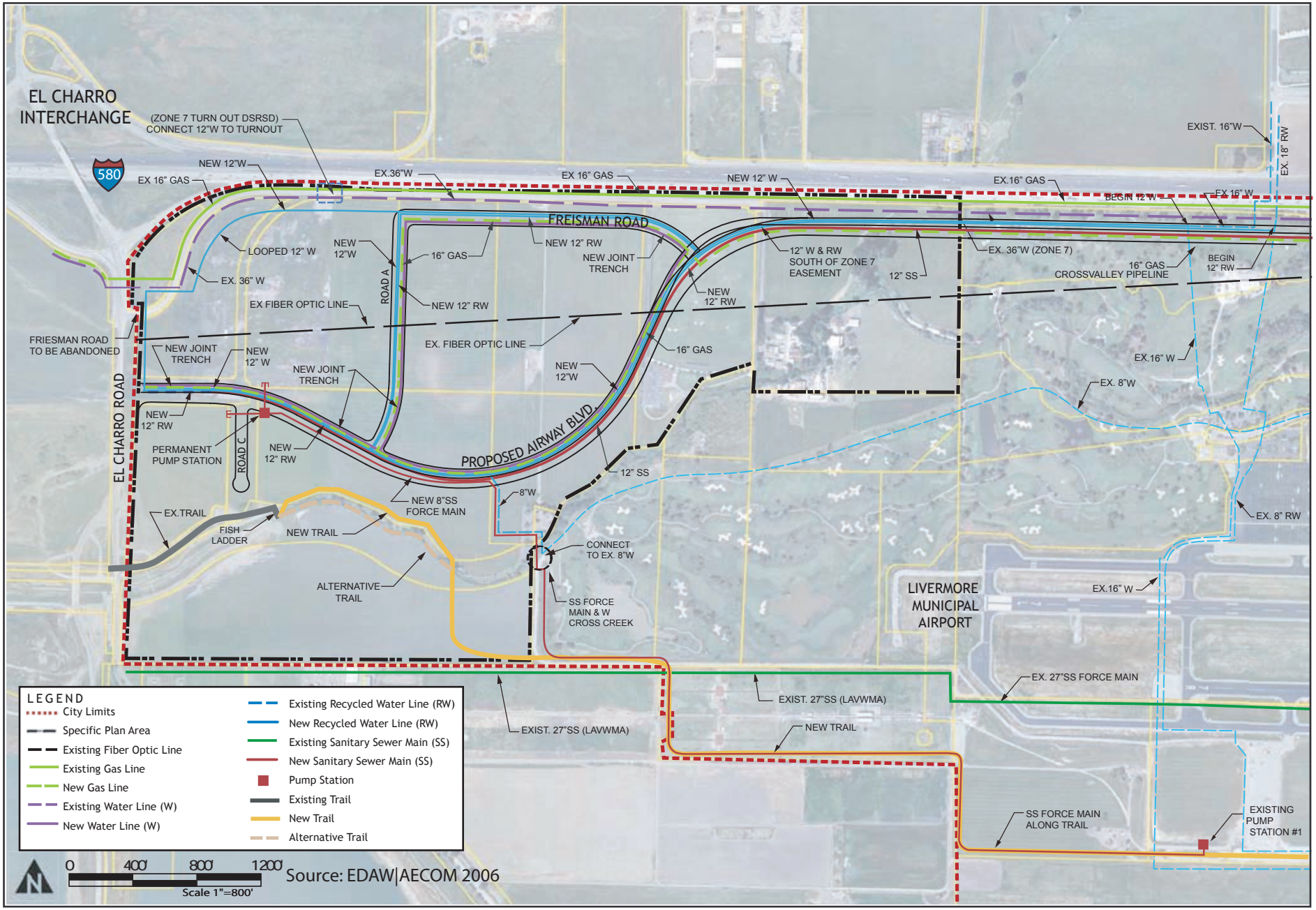
Development in the Specific Plan Area would need to construct and loop a potable-water pipeline extension system. The system would include 8- and 12-inch backbone pipelines to serve individual parcels. The system would connect to Zone 7's turnout. City waterline projects W1-1 through W1-4, included in the Water Master Plan (City of Livermore 2004c), are anticipated to be completed by the end of 2007 and are required improvements for the Specific Plan Area. The



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Figure 2-8
Existing and Proposed Utilities
Jack London Boulevard Extension Option

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Figure 2-9
Existing and Proposed Utilities
Airway Boulevard Extension Option

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City is currently constructing a 3-million gallon reservoir and pump station that would provide operational, emergency, and fire storage for the Specific Plan Area. The minimum potable water fire flow is 3,500 gallons per minute at 20 pounds residual pressure.

Zone 7 has a 36-inch Cross Valley Water Line and PG&E has a 16-inch gas line running parallel to I-580 and under Freisman Road just south of I-580, crossing under El Charro Road just outside of the Caltrans road right-of-way. As part of Zone 7's Well Master Plan (ESA 2004), the agency intends to connect this pipeline to Cope Lake from Zone 7's turnout on Freisman Road. The proposed Prime Outlets Livermore Valley would relocate a 300-foot portion of these pipelines concurrent with the relocation of Freisman Road. The City would continue to coordinate with Zone 7 to determine the alignment of this regional potable-water connection.

To accomplish the realignment, two new lines (36" water and 16" gas) would be extended from the existing lines at a point approximately 400 feet east of the western Johnson-Himsl property line. The new lines would run in a westerly direction and cross under El Charro Road to tie into the existing lines on the west side of El Charro Road. This new crossing would be approximately 500 feet north of the existing crossing and would be within Caltrans right-of-way. The section of the existing water line from the connection east of El Charro Road to the point where the water line crosses El Charro Road would be abandoned or removed and stubbed out to provide for a new water line connection running along El Charro Road from this point to Cope Lake. The remaining portions of the water line would remain. The portion of the 16-inch gas line from the east connection to the west connection would be removed. Both relocation efforts would be accomplished according to the timing and standards of the respective companies. Both require approval of the utility companies and an encroachment permit from Caltrans.

Recycled Water

The City's Recycled Water Master Plan (City of Livermore 2004d) identifies major recycled infrastructure improvements required for the Specific Plan Area. Specific Plan development would require the construction of a 12-inch backbone loop recycled-water pipeline and service laterals to serve landscaping needs for infrastructure and individual parcels. Several upgrades to the recycled-water system are being planned by the City, including water filters and a pump station at the Water Reclamation Plant, as well as the construction of a new 1.88-million-gallon recycled-water reservoir that would supply required recycled water and operational storage for the Specific Plan Area. These improvements are scheduled to be constructed by 2008.

Groundwater

According to Zone 7 there is one water supply well (35/IE-3J2) located within or near the Project boundaries. All unused or "abandoned" wells will be properly destroyed in accordance with Zone 7's groundwater protection policy. The Project Area may contain active and abandoned septic tanks and drain lines. Abandoned septic systems will be excavated and removed to eliminate the potential for them to act as conduits for contamination migration.

Utilities

Supply lines for gas and electrical service would be constructed to connect the Specific Plan Area to the existing gas and electrical supply lines (see Figures 2-8 and 2-9). An existing gas supply line is located to the north of the site and to the west of the site. Pacific Gas and Electric is developing a master plan in this area to serve the development. The company expects to connect the existing electrical service lines on the north side of the freeway in Dublin across the freeway with the El Charro interchange improvements and connect from the east at Freisman Drive and ultimately to the west and south from Pleasanton and from the existing line serving the driving range on the Sywest property. Telecommunication lines and facilities also would be constructed. New and existing utilities, including electrical lines less than 60 kV, would be placed underground as development occurs consistent with LPZC 3-5-310, Public Utility Undergrounding.

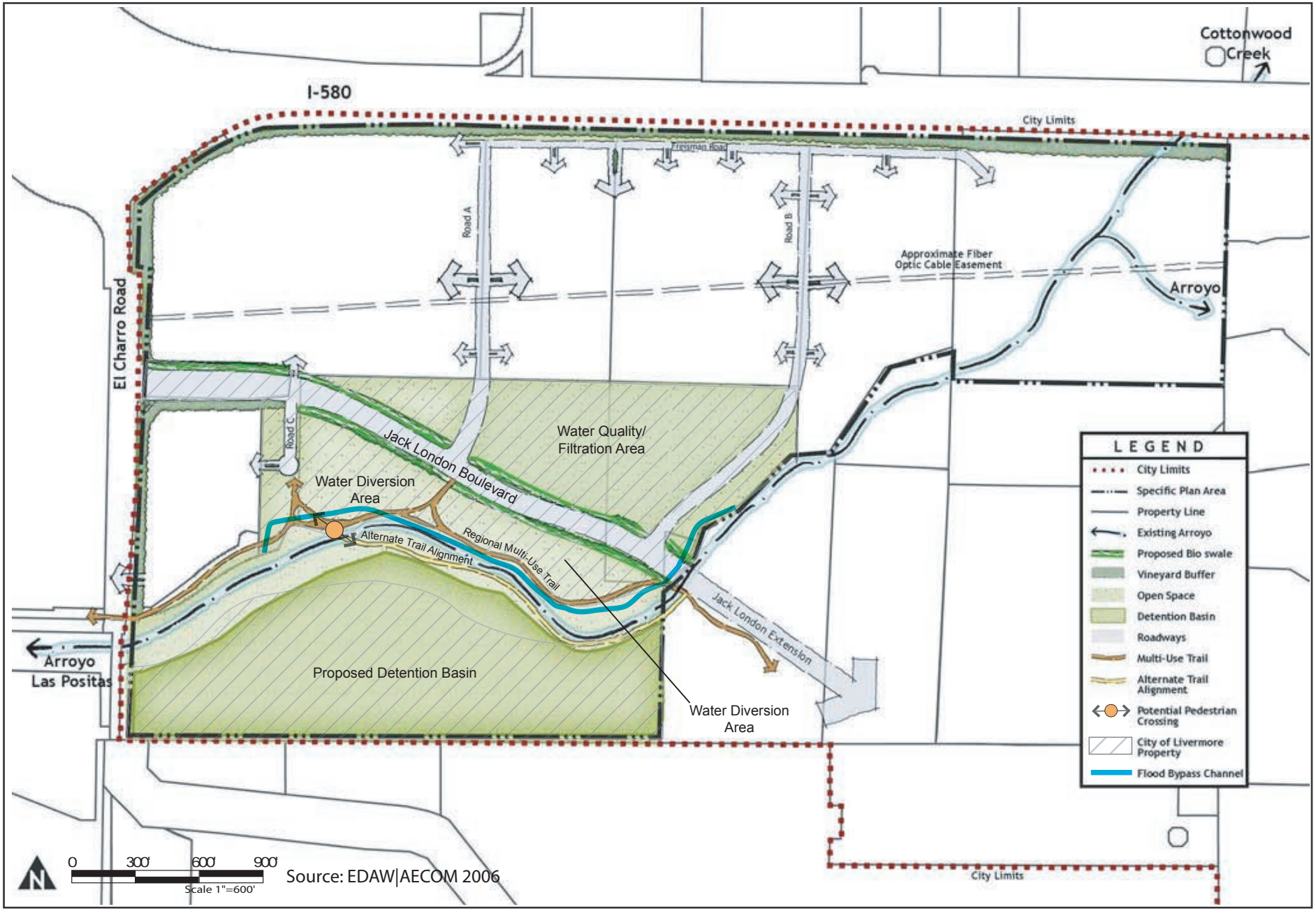
Open Space

Approximately 32% of the 250-acre Specific Plan Area is composed of City-owned LDAG-designated land, located on the southwest side of the Specific Plan Area along the Arroyo Las Positas (shown as open space land in Figure 2-10). This land is intended to be used as open space, minimal agricultural and nonintensive recreational uses, or as a buffer to the Arroyo and nearby airport. The Specific Plan includes a new zoning district for these parcels (PD-ECSP-OS, described above).

The FAA and the Airport Land Use Commission (ALUC) restricts development on land near airports, including a prohibition of any significant permanent structures, or facilities that draw large groups of people. The FAA requires leases at market rate and land uses are allowed only if they benefit the airport, unless a determination is made that the lands are not needed for airport purposes. Permanent structures are allowed, however, the intensity of such uses are limited. Other constraints include the Specific Plan guideline to provide a minimum 100-foot buffer from the bank of the Arroyo Las Positas to protect associated natural habitats around the Arroyo, except on the Children's Hospital parcel, where the proposed buffer would be 50 feet from the north bank and 150 feet from the south bank of the Arroyo Las Positas and 100 feet from the banks of Cottonwood Creek.

Vineyard Buffer

The Specific Plan includes a guideline for all freeway fronting developments to provide a vineyard buffer adjacent to I-580. A portion of this buffer on the Prime Outlets Livermore Valley site straddles Zone 7's existing Cross Valley Pipeline and it's turnout (DSRSD Turnout 5). The vineyard buffer will be designed to preserve Zone 7's access to the pipeline and DSRSD 5.



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Figure 2-10
Proposed Park and Open Space Plan

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Parks and Recreation

North of the Arroyo Las Positas

Four of the five City-owned open space properties are located north of the Arroyo Las Positas and total 46 acres (Figure 2-3). Two of the parcels are small, approximately 3.5 acres combined. The two larger parcels, 28 acres and 14 acres, would be divided into three areas by the proposed Jack London/Airway Boulevard Extension; the extent and placement of the division would be determined by the roadway alignment ultimately selected. These parcels also would be traversed by Road A, Road B, and Road C.

A landscape buffer and stormwater treatment facility would run parallel to the Jack London/Airway Boulevard Extension on the north side of the roadway, while a stormwater treatment facility would run along Jack London/Airway Boulevard on the south side of that roadway. Plantings in the landscape buffer on the north side of the roadway would be encouraged to be more natural as the buffer approaches the Arroyo Las Positas to the east. Parking would be allowed as a conditional use within City-owned parcels. North of the Jack London/Airway Boulevard Extension, Road A, and Road B, approximately 15 scattered picnic tables and benches would be situated for public use of the property as a City park. A small parking lot would be constructed. South of the Jack London/Airway Boulevard extension, the City-owned land would serve as a more passive recreational open space area, including swales, basins, and a low-profile channel to provide stormwater treatment, hydromodification mitigation, and flood flow conveyance while serving as an open space public park and trailhead with short-term small parking lot. Additionally, the sewer pump station would be located along the western edge of this area. Road C would provide access to the Himsl parcel, sewer pump station, trailhead parking, and Zone 7 channel for maintenance. The multiuse trail is planned along the north bank of the Arroyo trail in this area and may be temporarily used for EVA. The City will coordinate with LARPD on trail-related facilities.

South of the Arroyo Las Positas

The City owns one 35-acre parcel south of the Arroyo Las Positas that is divided from the rest of the Specific Plan Area by the Arroyo. This parcel would remain primarily as natural open space, and relocated golf greens with the Airway Boulevard Extension option, and would be utilized as a detention basin to mitigate flooding impacts. An alternative alignment for the multiuse trail would cross to the south side of the Arroyo Las Positas near the fish ladder and would continue to the east.

Riparian and Arroyo Corridor

Following the Specific Plan guideline, a minimum 100-foot buffer from the bank of the Arroyo Las Positas would be created to protect associated natural habitats around the Arroyo, except on the Children's Hospital parcel, where the proposed buffer would be 50 feet from the north bank and 150 feet from the south bank of the Arroyo Las Positas and 100 feet from the banks of Cottonwood Creek.

The westernmost portion of the Arroyo Las Positas in the Specific Plan Area is owned and managed by Zone 7 and has been channelized. Cottonwood Creek joins the Arroyo Las Positas in the eastern portion of the Specific Plan Area, on the Children's Hospital property.

Internal Open Space

Internal open space would consist of outdoor seating, pedestrian boulevards, soft and hardscaped plazas, dining, entertainment, and green spaces within the commercial developments. Inclusion of these features would be determined on a site-by-site basis during the design process to determine the adequate amount of publicly accessible space needed for each development.

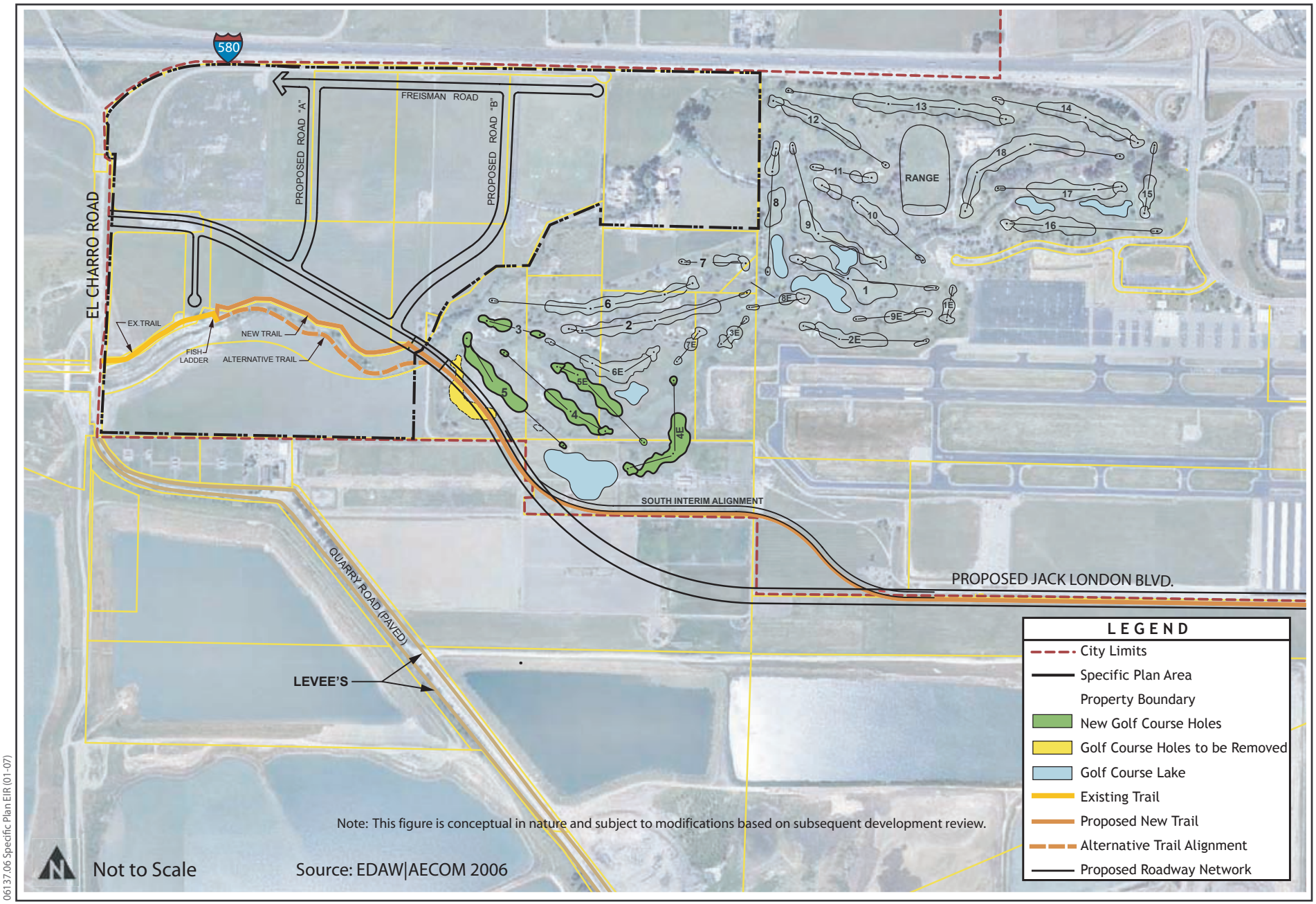
Because the fiber optic easement running east to west through most of the proposed private development areas precludes permanent structures within a 20-foot wide swath of the easement, there likely would be a linear open space element traversing the path of the easement and connecting individual properties for pedestrians. Roadways and pedestrian connections would cross the easement at various locations. Major intersections would be designed with more significant amenities, many of which would be oriented toward views of the adjacent hills.

Las Positas Golf Course Reconfiguration

The extension of Jack London or Airway Boulevard would affect the Las Positas Golf Course and would require reconfiguration of the course. Both the 18-hole championship and nine-hole executive courses would be affected by the proposed Project. The reconfigured course has been conceptually designed and will require refinement prior to construction. The likely changes to the course are described below for each roadway extension option.

Reconfiguration with Jack London Boulevard Extension Option

The alignment of this option passes through the southwest corner of the golf course. It is likely that three championship holes and two executive holes would be reconfigured with this option. Approximately 60,000 cubic yards of cut and fill would be required to modify the existing golf course to accommodate the change in routing of the holes to the holes lost by the Jack London Boulevard Extension option. The golf course area would be expanded to include the City parcel south of the course and west of the airport. See Figure 2-11.



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Figure 2-11
Las Positas Golf Course Reconfiguration
Jack London Boulevard Extension Option

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Reconfiguration with Airway Boulevard Extension Option

The alignment of this option passes through the northern portion of the golf course. It is likely that eight championship holes and two executive holes would be reconfigured with this option. Approximately 110,000 cubic yards of fill would be required to modify the existing golf course to accommodate the change in routing of the holes due to the holes lost by the Airway Boulevard Extension option. The golf course area would be expanded to the west, south of the Arroyo Las Positas, and combined with the detention basin design. See Figure 2-12.

Development Projects

Prime Outlets Livermore Valley

Prime Outlets Livermore Valley, LLC is proposing a specific project for a retail development on approximately 42 acres (see Figure 2-13). The proposed development includes 11 retail buildings, with a floor area of approximately 450,000 square feet, that will house approximately 150 national and international brand tenants. Including an approximately 16,000 square foot food court building and ancillary service areas, the total proposed floor area is approximately 450,000 square feet. The buildings are functionally single-story with wall heights ranging from 20 to 24 feet. Architectural features, such as decorative roofs and towers, range from 35 to 50 feet in height. Architectural features, such as decorative roofs and towers, range from 35 to 50 feet in height. The project would provide approximately 2,400 on-site parking spaces and approximately 245 off-site parking spaces located on approximately 2.77 acres of land immediately south of the Prime Outlets project site. Primary access to the project site would be through a main entrance from the proposed Road A. Access also would be provided from two additional driveways on Road A and one driveway on the proposed east-west roadway extension. The project also would include architectural gateway elements, such as tower and enhanced roof lines, that would be consistent with the proposed I-580 Scenic Corridor policies included in the General Plan Amendments proposed as part of the Project. These General Plan Amendments would allow developers to be consistent with visual resource policies that allow general preservation of the City's southern ridge lines while meeting the objectives for high quality gateway development. The purpose of the architectural elements would be to highlight the site as a gateway to the City and the Livermore Valley wine country. Prime Outlets Livermore Valley has requested a General Plan Amendment from the City's General Plan Scenic Corridor policies to facilitate development of the gateway elements and building development on the site. Other variations from typical standards include reduced parking stall dimensions, reduced bicycle parking (comparable to industry standards), reduced frontage landscape, reduced parking lot landscape and modified on-site stormwater filtration.

Plans for Other Parcels

Children's Hospital Parcel

Specific Plan–Identified Land Uses

The proposed land use program (discussed in Chapter 2 of the Specific Plan) identifies the 36-acre Children's Hospital parcel at the northeastern corner of the Specific Plan Area as a site that could include lifestyle services, such as day or health spas, sports centers that could provide activities such as tennis or swimming, restaurants, and hotels (EDAW|AECOM 2006).

Alternate Land Use

A potential alternate use of the Children's Hospital parcel is the construction and development of a church campus. This use would be designed consistently with the Specific Plan guidelines and standards. Though an application for a development agreement is not analyzed as a development project in this EIR, the design parameters for this parcel are considered as this parcel contains the most site planning restrictions because of setback requirements from Arroyo Las Positas and Cottonwood Creek, AT&T easement location, property depth, and Scenic Corridor constraints

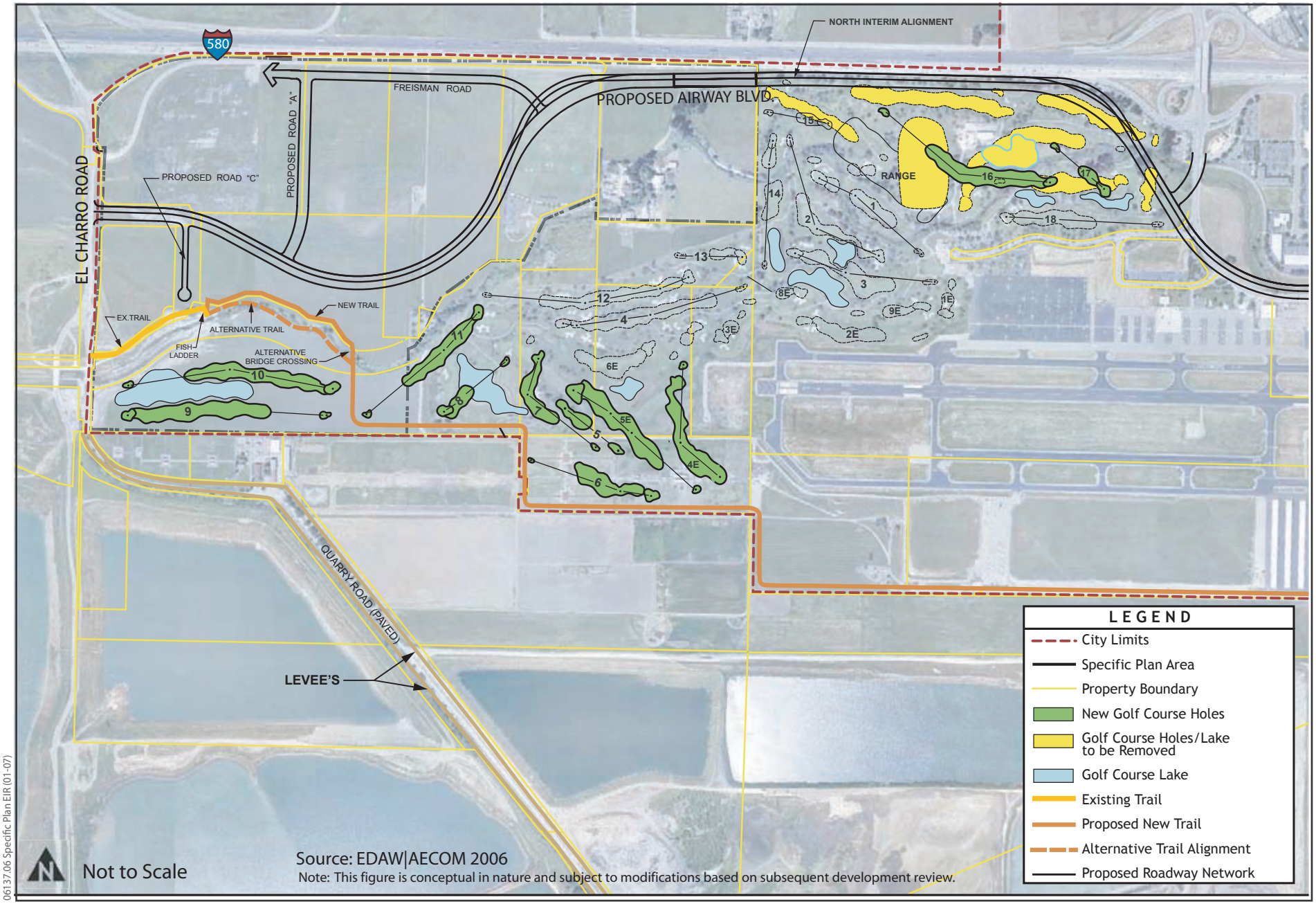
Development of this parcel could include a campus to accommodate religious services, traditional church functions such as weddings and funeral services, conferences, professional counseling, preschool and daycare, religious education, banquets, concerts, and other related church uses. A primary auditorium, meeting rooms and classrooms, exterior children's playground areas, playfields, and parking (including overflow parking and RV storage) may be included in an entitlement application. Up to four new roadway crossings of the waterways, in addition to the northern alignment of the major east-west roadway extension, would be necessary to replace the existing creek crossing on this parcel. The alternative use would include a potential General Plan Amendment regarding height limitations relative to the Scenic Corridor policy.

Other Parcels

Development plans for the other privately owned parcels in the area are uncertain at this time. For analysis purposes, retail commercial uses consistent with design guidelines and standards contained in Chapter 3 of the Specific Plan are assumed for these parcels.

Development Agreements

Development agreements are contracts into which development applicants and lead agencies enter in order to establish the rules that will govern development and provide applicants with certainty in the development process. Under a development agreement, the City agrees to vest certain development rights for

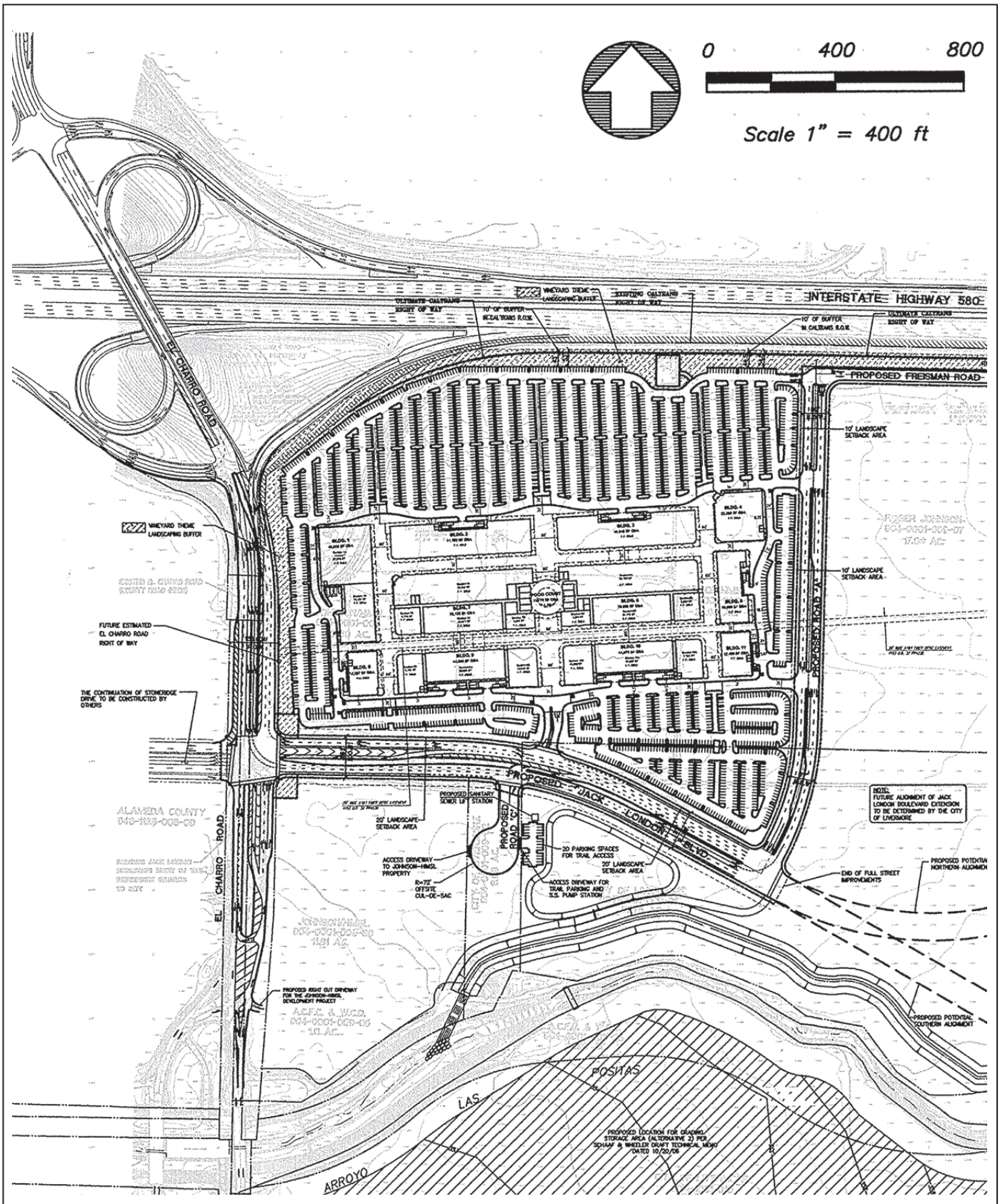


06137.06 Specific Plan EIR (01-07)

Jones & Stokes

Figure 2-12
Las Positas Golf Course Reconfiguration
Airway Boulevard Extension Option

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Source: Kier & Wright Civil Engineers & Surveyors, Inc.

06137.06 Specific Plan EIR (01-07)

Jones & Stokes

Figure 2-13
Prime Outlets Livermore Valley Site Plan

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the developer, and the developers agree to construct specific improvements and develop them according to a City-approved schedule.

The City anticipates that all applicants for development in the Specific Plan Area will enter into a development agreement with the City. Prime Outlets Livermore Valley has submitted an application for a development agreement. The development agreements will address phasing and funding of infrastructure improvements; uses and development standards for their sites; provisions for dedication of land for public purposes, as necessary; and public benefits offered by the project. The development agreements also may address requirements for subsequent approvals and development phasing.

Financing Mechanisms

In order for development to proceed in a timely and orderly manner, major infrastructure improvements are necessary. Following the implementation goals and policies outlined in Specific Plan Chapter 7, "Plan Implementation and Administration," as part of any project approval, the City in conjunction with property owners and developers, have prepared a detailed financial plan for the Specific Plan. The financing plan identifies any necessary capital improvements, including public facilities, streets, and utilities, and ensure timely funding of these improvements.

A land-secured financing mechanism, such as an assessment district, would provide the most effective and equitable approach to plan for and fund needed infrastructure and improvements to serve the Specific Plan Area and adjacent areas. Participants who receive benefits from the Specific Plan would pay their share of costs in proportion to the benefits received. Chapter 7, section 7.3, of the Specific Plan specifies the regulatory strategies, including financing mechanisms for the Specific Plan Area. Additional developer contributions will be needed to fully fund the necessary improvements.

Project Phasing/Public Improvement Plans

Some of the infrastructure within the Specific Plan Area may be constructed in phases depending on the implementation schedule of the various developments. If the Jack London/Airway Boulevard Extension is not completed prior to the opening of some retail establishments, an EVA road connecting Jack London/Airway Boulevard and SR 84 to the eastern side of the Specific Plan Area will need to be constructed.

The infrastructure will be sequenced with first phase improvements put in place to provide all backbone infrastructure and support the initial development. Future improvements are required as each remaining parcel within the Specific Plan Area develops. However, some improvements will only be needed at such time that the Specific Plan Area and surrounding areas (portions of the Cities of

Pleasanton, Dublin, and Livermore, and Alameda County) are built out and the cumulative transportation improvements are also installed.

The proposed Project includes the following initial improvements.

a. Widening and raising El Charro Road between I-580 and the Arroyo Las Positas.

b. Installation of two signalized intersections along Jack London Boulevard at El Charro Road and farther east at the new Road A.

c. Construction of the full-width extension of Jack London Boulevard from El Charro Road to the western edge of the Roger-Johnson Parcel.

d. Construction of Road A connecting Jack London Boulevard to Freisman Road between the Johnson-Himsl and Roger Johnson parcels.

e. Graded detention basin to the south of the Arroyo Las Positas to detain floodflows and restore the natural detention loss from development filling in the floodplain.

f. A north flood control channel to redirect floodflows overtopping the creek banks back into the creek downstream within the improved creek section.

g. Construction of the HMP basin south of Jack London/Airway Boulevard and water quality swales north of the north flood channel. These are required to mitigate for the hydromodification impacts and treat the stormwater runoff from the initial development in the Specific Plan that could not be treated on-site. The HMP basin will mitigate for the hydromodification impacts from the initial development and the off-site swales will provide stormwater treatment of up to 50% of the runoff from the initial development.

h. Installation of the sewer pump station and sewer line extensions required to service the first phase of development.

i. Extension of both potable and recycled water lines to service the first phase of development and connection to the Zone 7 turnout.

j. Extension of joint trench utilities along Freisman Road, and undergrounding of existing overhead facilities along El Charro Road servicing the first phase of development.

k. Installation of a new storm drain system routing the storm drainage from on-site to off-site detention and stormwater treatment swales.

l. Replacement of portions of the golf course impacted by the two-lane roadway extension or EVA.

m. Installation of any improvements required to mitigate the environmental impacts of the public infrastructure.

n. Construction of a two-lane extension of Jack London/Airway Boulevard to either the western edge of the existing Jack London Boulevard or to Airway Boulevard. The two-lane Jack London Boulevard Extension

option to the existing Jack London Boulevard would include an 80-foot long free-spanning bridge and a series of 25 culverts (15 feet wide by 5 feet high) under the roadway south of the bridge. The two-lane extension option for Airway Boulevard would include an 80-foot-long free spanning bridge and extension of the existing Cottonwood Creek culvert extension from I-580 continuing under the new road extension. This culvert extension would realign Cottonwood Creek to cross perpendicular with the new roadway extension and require modifications to the Los Positas Golf Course. Although the traffic impacts do not necessitate the two-lane extension with the Prime Outlets Livermore Valley development, connectivity issues and improvements to emergency response make it necessary to complete the two-lane extension as part of initial development.

o. Abandonment of a portion of Freisman Road west of Road A.

p. Installation of Road C.

q. Installation of Las Positas Trail and connection to Jack London/Airway Boulevard intersection with Road A.

r. Installation of signalized intersections along the Jack London Boulevard extension at the second intersection with Jack London Boulevard, Discovery Drive and Voyager Drive; or modifications to Airway Boulevard, realignment and signalization to the intersection of Airway Boulevard and Club House Drive, and modifications to the signalized intersections of Airway Boulevard and Kitty Hawk Road/Isabel Avenue.

s. Modifications to driveway accesses for the airport, water treatment plant, and golf course.

As development continues, the following improvements would be constructed.

a. Road widening and frontage improvements along Road A between Jack London/Airway Boulevard and Freisman Road.

b. Relocation of Freisman Road.

c. Installation of the second road connection (Road B) between Freisman Road and Jack London Boulevard.

d. Installation of the remaining potable and recycled water lines on Freisman Road.

e. Installation of the remaining storm drain system.

f. Installation of the remaining sewer lines.

g. Installation of the remaining joint trench utilities and undergrounding of remaining overhead utility lines in the Specific Plan Area and along the road alignments.

h. Installation of the remaining portions of the stormwater treatment swales and detention basins mitigating hydromodification impacts from the development within the Specific Plan.

i. Installation of any improvements required to mitigate the environmental impacts of the public infrastructure.

Future improvements include the following.

a. Widening Jack London/Airway Boulevard from two to four lanes.

b. Replacement of portions of the golf course impacted by the four-lane widening of the roadway extension.

c. Ultimate improvements to El Charro freeway interchange.

These future improvements would be required only at such time that the areas surrounding and connecting to the Specific Plan Area have reached buildout (including portions of the Cities of Livermore, Dublin, and Pleasanton, and Alameda County) and all of the cumulative transportation infrastructure has been installed (eg. Stoneridge Drive extension and El Charro Road to Stanley Boulevard extension).

Applications for development projects within the Specific Plan Area must be accompanied by public improvement plans that include infrastructure sequencing programs that coordinate with and allow for orderly development throughout the Specific Plan Area. The sequencing programs will prioritize roads, sewer, water, drainage, and other utilities that must be in place prior to specific levels of development being permitted.

Adjacent Projects

Staples Ranch Project

The 124-acre Staples Ranch project is located immediately west of the Specific Plan Area, on the west side of El Charro Road between I-580 and the Arroyo Las Positas. The Staples Ranch project is within the 1989 Stoneridge Drive Specific Plan area. Currently, the Staples Ranch project site is vacant and is owned by the Alameda County Surplus Property Authority (SPA). An EIR is being prepared to analyze a proposed amendment to the Stoneridge Drive Specific Plan, subdivision of the Staples Ranch property, and prezoning and annexation to the City of Pleasanton. The preliminary land use concept for the Staples Ranch project and proposed changes to the Stoneridge Drive Specific Plan, as listed in the Notice of Preparation of an EIR for the project (City of Pleasanton 2006), includes the following:

An approximately 36-acre auto mall with about 250,000 square feet of buildings and up to 2,800 parking stalls;

Potential future expansion of the auto mall property by about 5 acres which may bring the auto mall development to 41 acres with a total of approximately 285,000 square feet of buildings;

A senior continuing care community with about 1,400,000 square feet of buildings;

An ice skating arena complex;

Preservation of the Stoneridge Drive extension right-of-way through the project site and connecting to I-580, as envisioned in the [Stoneridge Drive] Specific Plan;

A new two-lane bridge that would extend Stoneridge Drive over the Arroyo Mocho and provide access to the proposed project;

Access to the senior continuing care community through the extension of Stoneridge Drive; access to the auto mall from El Charro Road; and a through-road connecting the two access routes for use only by emergency vehicles;

Potential future commercial development of up to 130,000 square feet of retail or 210,000 square feet of non-retail uses on about 12 acres of the project site;

Potential future expansion of the retail or commercial uses by about 5 acres, in the event that the auto mall does not expand; and

In addition, the [Stoneridge Drive] Specific Plan would continue to show development of an approximately 17-acre park by the City.

Roadway Improvement Projects

Other road improvement projects are planned for the project vicinity, which, while located outside the Specific Plan Area, would impact the Specific Plan Area. These improvements include the widening of SR 84 between I-580 and Stanley Boulevard to six lanes and between Stanley Boulevard and Vallecitos Road to four lanes. Construction would not begin until 2007. A new interchange and freeway flyover is planned also, at I-580 and SR 84, with an expected completion date of 2009. In the near term, in order to accommodate transit improvements, high occupancy toll lanes, and auxiliary lanes, an expansion of I-580 through the Project Area is expected to occur. Approximately 30 feet of right-of-way along the northern edge of the Project Area has been set aside for this improvement.

The Pleasanton general plan shows El Charro Road extending to Stanley Boulevard and Stoneridge Drive extending to El Charro Road.

As part of the East Dublin Specific Plan development, the first phase of improvements to the existing El Charro Road/Fallon Road/I-580 interchange is planned by the City of Dublin to accommodate East Dublin Specific Plan area traffic and anticipated traffic from future developments in Pleasanton and Dublin.

The current diamond interchange will be improved to a partial cloverleaf with widening of the overpass from two to four lanes and miscellaneous ramp widening. Completion of the first phase improvement is anticipated by 2008. This EIR has analyzed potential impacts on the interchange and possible improvements.

Intended Uses of the EIR

The City will use this EIR in the decision of whether to adopt the El Charro Specific Plan. The City will use this document in its decision-making on requested project entitlements. These entitlements consist of adoption of the Specific Plan as well as rezones, General Plan Amendments, development agreements, and site-specific land use approvals. Responsible agencies, listed in Table 2-4, would also use this EIR as part of their approval processes.

Required Permits and Approvals

Table 2-4, below, lists the permits and other approvals that may be necessary for the various project elements.

Once the Specific Plan is in place, the entitlement process will be limited to assessing whether development proposals demonstrate consistency with the adopted Specific Plan, as described in Chapter 7 of the Specific Plan.

Table 2-4. Required Permits and Approvals

Responsible Agency	Permit, Approval, or Consultation
U.S. Army Corps of Engineers (USACE)	Authorization under Section 404 of the Clean Water Act (CWA) for placement of fill within waters of the United States
U.S. Fish and Wildlife Service (USFWS)	Consultation under Section 7 or Section 10 of the federal Endangered Species Act (ESA)
FEMA	Approval of a CLOMR and an LOMR for removal of the Project Area from designated floodplain mapping
FAA	Approval for use of the City land on or adjacent to the Livermore Municipal Airport for flood control, parking, or other uses
U.S. Department of Homeland Security (USDHS)	Portions of the Project within the airport safety zone may require approval of USDHS
Caltrans	Encroachment permit and approval for improvements to the I-580/El Charro Road interchange
California Department of Conservation (DOC)	Notification of the cancellation of properties under Williamson Act contract and/or transfer of properties
San Francisco Bay Regional Water Quality Control Board (SFBRWQCB)	Section 401 Water Quality Certification or waste discharge requirements
San Francisco Bay Area Air Quality Management District (BAAQMD)	Permit for air emission generating equipment
Alameda County Public Works Agency	Approval for improvements/alteration to El Charro Road
Alameda County Airport Land Use Commission	Consultation concerning new land uses in proximity to the airport
Alameda County Flood Control and Water Conservation District/Zone 7 Water Agency	Authorization for alteration of portions of Arroyo Las Positas owned by Zone 7
City of Livermore	Lead agency under CEQA: Specific Plan approval; General Plan Amendments, site plan approvals, design review, subdivisions, planned development districts, and grading and building permits; approval of infrastructure improvements, funding, and phasing; approval of east-west roadway extension; and City Council consideration of the landowner's request for Williamson Act contract cancellation and/or transfer
Trustee Agency	**Permit, approval, or consultation**
California Department of Fish and Game	Section 1602 Streambed Alteration Agreement for waters of the state; potential consultation under Section 2081 of the California Endangered Species Act (CESA)
Other Agencies	**Consultation**
Alameda County	Coordination on Staples Ranch project and El Charro Road improvements
City of Dublin	Coordination on I-580/El Charro Road interchange improvements
City of Pleasanton	Coordination on Staples Ranch project and El Charro Road/I-580 interchange improvements

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Chapter 3
Environmental Analysis

This chapter contains an evaluation of the environmental impacts of the proposed Project for CEQA. In this section, short- and long-term beneficial and adverse impacts on the physical (natural and manmade) environment are discussed. The discussion covers both the impacts of the Project on the environment and the impacts of the environment on the Project. This chapter consists of the following sections:

- section 3.1, “Aesthetics and Visual Resources”
- section 3.2, “Agricultural Resources”
- section 3.3, “Air Quality”
- section 3.4, “Biological Resources”
- section 3.5, “Cultural Resources”
- section 3.6, “Geology, Soils, and Paleontology”
- section 3.7, “Hazards and Hazardous Materials”
- section 3.8, “Hydrology and Water Quality”
- section 3.9, “Land Use and Planning”
- section 3.10, “Mineral Resources”
- section 3.11, “Noise”
- section 3.12, “Population and Housing”
- section 3.13, “Public Services and Utilities”
- section 3.14, “Recreation”
- section 3.15, “Transportation and Traffic”

For each resource topic covered in this chapter, the following information is presented.

- **Environmental Setting**
  - **Existing Conditions:** In this section, the existing site and study area conditions are described for the resource topic.

- **Regulatory Setting:** In this section, federal, state, and local policies, regulations, and standards are described for the resource topic.
- **Impact Analysis**
- **Thresholds of Significance:** In this section, the thresholds used to determine the significance of the impacts are presented. The significance conclusions that can be noted at the end of each impact discussion are defined below.
  - **No Impact:** This level of significance is used for impacts where there is clearly no effect. Where it was clear at the outset that there would be no impact on a particular resource topic under any of the alternatives, the topic (e.g., biological resources) was evaluated at a lesser level of analysis.
  - **Less than Significant:** This level of significance is used for impacts where there would be an impact, but the degree of the impact would not meet or exceed the identified thresholds.
  - **Less than Significant with Mitigation:** This level of significance is used for impacts that would meet or exceed the identified thresholds, but implementing mitigation measures would reduce such impacts to a less-than-significant level.
  - **Significant and Unavoidable:** This level of significance is used for significant impacts where mitigation is not available or feasible to reduce the significant impact to a less-than-significant level.
- **Approach and Methodology:** This section describes the technical methodology for impact assessment. If models were used to assess impacts, the models are described in this section, as are other technical tools.
- **Impacts and Mitigation Measures:** In this section, the effects of the proposed Project are described. For each identified significant or potentially significant impact, mitigation measures are identified. As stated above, where mitigation is not available or feasible to reduce the impact to a less-than-significant level, the impact is identified as significant and unavoidable.

Several topics required by CEQA in addition to the resource topics addressed in Chapter 3 are addressed in Chapter 4, "Other CEQA Considerations," including the following:

- alternatives,
- growth-inducing effects,
- cumulative effects,
- significant and unavoidable impacts, and
- significant and irreversible environmental changes.

3.1 Aesthetics and Visual Resources

Introduction

This section identifies and evaluates issues related to aesthetics and visual resources in the Project Area. The "Environmental Setting" discussion below describes the current setting of the Project Area. The purpose of this information is to establish the existing environmental context against which the reader can understand the environmental changes caused by the proposed Project. The environmental setting information is intended to be directly or indirectly relevant to the subsequent discussion of impacts. For example, the setting identifies groups of people who have views of the Project Area because the Project could change their views and experiences.

The environmental changes associated with the proposed Project are discussed in the section "Impact Analysis" later in this chapter. This section identifies impacts, describes how they would occur, and prescribes mitigation measures to reduce significant impacts.

Criteria for Visual Assessment

Identification of existing conditions with regard to visual resources entails three steps.

1. Objectively identify the visual resources (visual features) within the project viewshed.
2. Assess the character and quality of those resources relative to the overall visual character of the region.
3. Identify the importance to people, or *sensitivity*, of views of visual resources in the viewshed.

Establishing the baseline (existing) conditions allows a proposed project or other change to the viewshed to be objectively evaluated for its degree of impact. The degree of impact depends both on the magnitude of change in the visual resource (i.e., visual character and quality) and on viewers' responses to and concern for those changes. This general process is similar for all established federal procedures of visual assessment (Smardon et al. 1986) and represents a suitable methodology of visual assessment for other projects and areas.

The approach for this visual assessment is adapted from the Federal Highway Administration's (FHWA's) visual impact assessment system (Federal Highway Administration 1983) in combination with other established visual assessment systems. This approach is also a general process similar for established

procedures of visual assessment. The visual impact assessment process involves identifying the following:

- applicable policies and public concern about the protection of visual resources;
- visual resources (i.e., significant aesthetic elements) of the region, the immediate action area, and the Project Area;
- important viewing locations (e.g., roads) and the general visibility of the action area and site using descriptions and photographs;
- viewer groups and their sensitivity; and
- potential impacts.

Concepts and Terminology

Visual Character

Both natural and artificial landscape features make up the *character* of a view. Character is defined according to physical, biological, and cultural features. Urban features include those associated with landscape settlement and development, such as roads, utilities, structures, earthworks, and the results of other human activities. The perception of visual character can vary significantly among viewers, depending on their level of *sensitivity* (interest). Among *sensitive* viewers, perception can vary seasonally as weather, light, shadow, and the elements that compose the viewshed change. Form, line, color, and texture are the basic components used to describe visual character and quality for most visual assessments (U.S. Forest Service 1995; Federal Highway Administration 1983). The appearance of the viewshed is described in terms of the dominance of each of these components.

Visual Quality

In contrast with visual character, which is descriptive, visual *quality* is evaluative in nature. Visual quality is assessed by using the FHWA, concepts of vividness, intactness, and unity (Jones et al. 1975; Federal Highway Administration 1983), as defined below.

- *Vividness* is the visual power or memorability of landscape components as they combine in striking or distinctive visual patterns.
- *Intactness* is the visual integrity of the natural and human-built landscape and its freedom from encroaching elements; this factor can be present in well-kept urban and rural landscapes, as well as in natural settings.

- *Unity* is the visual coherence and compositional harmony of the landscape considered as a whole; it frequently attests to the careful design of individual components in the artificial landscape.

Visual quality is evaluated based on the relative degree of vividness, intactness, and unity, as modified by its visual sensitivity. High-quality views are highly vivid, relatively intact, and exhibit a high degree of visual unity. Low-quality views lack vividness, are not visually intact, and possess a low degree of visual unity.

Visual Sensitivity and Viewer Response

Viewer Sensitivity

The measure of the quality of a view must be tempered by the overall *sensitivity* of the viewer. Viewer sensitivity is based on the:

- visibility of resources in the viewshed,
- proximity of viewers to the visual resource,
- elevation of viewers relative to the visual resource,
- frequency and duration of viewing,
- number of viewers, and
- type and expectations of individuals and viewer groups.

Viewshed Importance

Anticipated change within a particular viewshed is one of the means for evaluating visual impacts. The criteria for identifying importance of views are related in part to the position of the viewer relative to the resource. A viewshed is defined as the total visible area from a single observer position, or the total visible area from multiple observer positions. Viewsheds are accumulated seen-areas from highways, trails, campgrounds, towns, cities, or other viewer locations. To identify the importance of views of a resource, a viewshed may be broken into distance zones of foreground, middleground, and background. Generally, the closer a resource is to the viewer, the more dominant it is and the greater is its importance to the viewer. Although distance zones in viewsheds may vary between different geographic regions or types of terrain, a commonly used set of criteria identifies distance zones.

- Foreground zone is up to 0.5 mile from the viewer.
- Middleground zone extends up to 4 miles from the foreground.
- Background zone extends 4 miles from the viewer to the horizon (U.S. Forest Service 1995).

View Context

Judgments of visual quality and viewer response must be made in a regional frame of reference (U.S. Soil Conservation Service 1978). The same type of visual resource in different geographic areas could have a different degree of visual quality and sensitivity in each setting. For example, a small hill may be a significant visual element in a flat landscape but have very little significance in mountainous terrain.

Viewer Types

Generally, visual sensitivity is higher for views seen by people who are driving for pleasure, engaging in recreational activities (i.e., hiking, biking, or camping), or observing from their homes. Sensitivity tends to be lower for activities such as commuting in heavy traffic or actively working in the area (U.S. Forest Service 1995; U.S. Soil Conservation Service 1978; Federal Highway Administration 1983). Commuters and nonrecreational travelers have generally fleeting views and tend to focus on commute traffic rather than on surrounding scenery, and thus are generally considered to have low visual sensitivity. Residential viewers typically have extended viewing periods and are concerned about changes in the views from their homes; therefore, they generally are considered to have moderate to high visual sensitivity. Viewers using recreational trails and areas, scenic highways, and scenic overlooks are usually assessed as having high visual sensitivity.

Environmental Setting

Existing Conditions

Livermore-Amador Valley Regional Character

The project region, as discussed in this section, is considered the Livermore-Amador Valley. The Project Area is located on the western side of Livermore, in eastern Alameda County (see Figure 2-1).

North of the Project Area

The foothills and peaks of the Black Hill and Diablo Mountain Ranges form the northern boundary to the flatter valley floor. Brushy Peak is a round-topped landmark formation with a contrasting cap of darker vegetation located to the northeast. A few low, rounded knolls present a pleasant visual feature for travelers along I-580 to the north. The surrounding mountain ranges create a northwest to southeast channel that connects the Livermore Valley to the Diablo Valley. I-680 cuts through these valleys and supports an urban corridor of cities, including Dublin and San Ramon northwest of the Project Area.

East of the Project Area

The Livermore Valley is bordered on the east by hills of approximately 1,000 to 1,500 feet in elevation. I-580 runs through Altamont Pass with several secondary

passages also connecting the Project Area to the San Joaquin Valley. The urbanized extent of Livermore stretches along I-580 to the foothills.

South of the Project Area

Mountains on the southern edge of the Livermore Valley rise to a height of approximately 3,000 to 3,500 feet. The urbanized portions of Livermore stretch roughly to within 1 mile of farmland in unincorporated areas of Alameda County. This rough border extends to the foothills of the mountains on the southern edge of the Livermore Valley. South of the Project Area, quarry land is located on both the east and west sides of El Charro Road.

West of the Project Area

The Livermore Valley is bordered on the west by hills of 1,000 to 1,500 feet in elevation. I-580 is a major interregional highway connecting the Bay Area, through the Hayward Pass, with the San Joaquin Valley to the east and, more locally, Livermore to Pleasanton and Dublin. I-680 intersects with I-580 west of the site, in the Cities of Dublin and Pleasanton, and runs roughly north to south. The Bay Area Rapid Transit (BART) Dublin/Pleasanton extension starts/ends 2.3 miles west of the Project Area. The urbanized land within the City of Pleasanton and the City of Dublin extends to the foothills of the mountains west of the Project Area.

Water features in the greater region include the Arroyo Las Positas, Lake del Valle, San Antonio Reservoir, Arroyo Seco, Arroyo Mocho, Altamont Creek, Collier Canyon Creek, and Arroyo del Valle. The Chain of Lakes, former quarry gravel pits now used for water detention and groundwater recharge, are located south of the Project Area.

As part of the East Bay area, the Project Area is in a locality in which open space is being rapidly urbanized as the population continues to increase and expand into open space. This trend is evident along the I-580 corridor as far east as the land adjacent to the west side of the Altamont Hills.

A patchwork of vineyards, grazing land, rolling hills, and vegetated creek corridors separate the urban centers of Livermore, Pleasanton, and Dublin from smaller, outlying, low-density communities and commercial areas that are presently being developed. Smaller roadways wind through the hills and connect these communities to cities in the region. Developments occurring within open space on the valley floor, or on the slopes or top of hills, typically offer expansive views that extend to the mountain ranges in the background. These landscape views are often picturesque and panoramic in nature, strongly contributing to the region's identity. While the surrounding ridgelines, hillsides, open space, and farmland combine to provide memorable and distinctive visual patterns in the Livermore Valley, the predominant visual character of the valley is urban, with interregional highways and dense commercial, residential, and industrial structures pervading the neighboring cities. This dichotomy of visual quality balances out to a moderate level of vividness. The natural rolling hills extend for a relatively long distance along the north end of the Livermore Valley, yet they show signs of encroaching development, such as the residences to the

north off Fallon Road, utility poles and lines, fences, and driving-range netting framing the view from I-580 and surrounding roadways. The surrounding ridgelines extend this natural landscape throughout the Livermore Valley, even as urban development encroaches on the foothills. Thus, the visual quality of the project setting (with its particular mixture of constructed and natural elements) is moderate in vividness, intactness, and unity.

Visual Character and Quality—Project Setting

For this section, the project vicinity is defined as the area within 0.5 mile of the Project Area (Figure 3.1-1). Key viewpoints from all directions are shown in Figure 3.1-2.

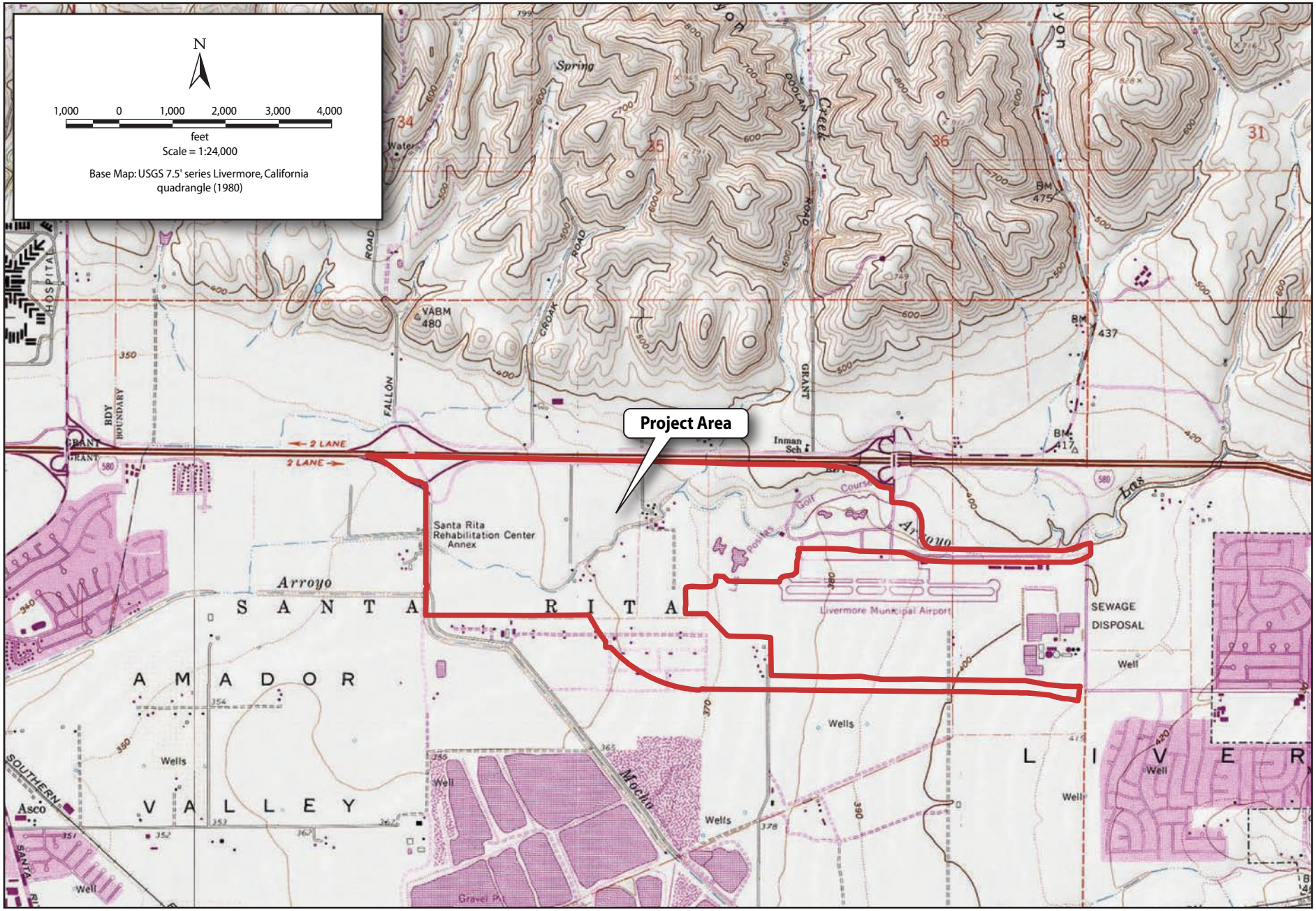
North

I-580 borders directly north of the Project Area. I-580 is a major traffic route that currently experiences severe congestion during the morning and evening peak traffic hours (City of Livermore 2004a). Immediately north of the interstate lies land outside of the City of Livermore boundary and within the City of Dublin and unincorporated Alameda County. This land is primarily devoted to open grazing activities, and gently rises in elevation to the north. The City of Livermore limit continues to the north, just east of the county boundary.

El Charro Road crosses I-580 and becomes Fallon Road to the north. Off Fallon Road, about a mile up the hill from the Project Area, are several single-family home subdivisions. A small ranch house lies 0.8 mile north of the Project Area and east of Fallon Road (Figure 3.1-3, Viewpoint 1). The view farther down Fallon Road, toward the Project Area, is still clear from the hillside (Figure 3.1-3, Viewpoint 2). The view of the Project Area from I-580 is partially blocked by the El Charro-Fallon Road overpass and highway onramp (Figure 3.1-3, Viewpoints 3 and 4). North of I-580 and east of Fallon Road, Croak Road becomes a frontage road and turns north. A small ranch home lies east of Croak Road, 0.2 mile north of the Project Area (Figure 3.1-4, Viewpoint 5). Croak Road continues north approximately 1 mile and dead ends at a ranch home with no views of the Project Area. There is no connection between Croak Road and Collier Road to the immediate east, which parallels I-580. Collier Road dead ends at a ranch, which is across I-580 from the existing golf driving range in the Specific Plan Area (Figure 3.1-4, Viewpoint 6). The view from I-580 looking south is as close as 50 feet to the proposed Airway Boulevard Extension option in the Project Area.

Doolan Canyon extends northeast of the Project Area. Here, Collier Road connects to Doolan Road, which is the nearest road west of the Airway Boulevard overpass. Offices are located as close as 0.15 mile north of the Project Area and immediately east of Doolan Road (Figure 3.1-5, Viewpoint 7).

The visual quality, specifically the vividness, intactness, and unity, of the primarily rural rolling hills north of the Project Area is moderately high.



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Figure 3.1-1
Local Topography

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Figure 3.1-2
Key Viewpoints

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Viewpoint 1: Looking southeast from Fallon Road and ranch



Viewpoint 2: Looking southeast from Fallon Road at small hilltop



Viewpoint 3: El Charro/Fallon Road overcrossing blocking views of much of the site from the west



Viewpoint 4: Looking south at eastbound El Charro Road/I-580 on-ramp blocking view of northwest of site

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Figure 3.1-3
Viewpoints 1,2,3, and 4

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Viewpoint 5: Looking souh from Croak Road



Viewpoint 6: Looking south from Collier Road

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Figure 3.1-4
Viewpoints 5 and 6

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Viewpoint 7: Looking southwest from Doolan Road



Viewpoint 8: Looking west from driveway for 6 residences

061137.06 004 EIR Visual Assessment (12-06)

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Figure 3.1-5
Viewpoints 7 and 8

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East

There are 23 structures, including six residences, concentrated near the east end of the Specific Plan Area on the Children's Hospital property. Freisman Road leads to the driving range and to the private driveway for the Children's Hospital property (Figure 3.1-5, Viewpoint 8). Views from Freisman Road to the west are shown in Figure 3.1-6, Viewpoint 9. Las Positas Golf Course borders immediately east of the Specific Plan Area (Figure 3.1-6, Viewpoint 10), with Livermore Municipal Airport to the southeast.

The visual quality (vividness, intactness, and unity) of the golf course and airport is moderately high.

South

The Arroyo Las Positas winds northeast to southwest through the Project Area, through and between the golf course and the southeast side of part of the Specific Plan Area (Figure 3.1-6, Viewpoint 11). South of the Project Area is agricultural land used for horse grazing, with various structures that provide shelter to the animals. The easternmost of the three southern parcels is in active production for alfalfa and hay. Farther south are quarry ponds, part of the Chain of Lakes. El Charro Road cuts between the agricultural and quarry lands running southeast to northwest (Figure 3.1-7, Viewpoint 12).

> While the far western portion of Arroyo Las Positas has been channelized and includes an existing trail near El Charro Road, the remainder of the creek within the golf course and Specific Plan Area remains natural and does not currently offer many recreational opportunities for pedestrians or cyclists. However, a 1.5 mile "Livermore to Pleasanton Arroyo Trail connector" is proposed for development through the southern portion of the Project Area from the west end of West Jack London Road in Livermore west to El Charro Road near Pleasanton. (Jones & Stokes 2006c.)

Views from El Charro Road south of the Project Area and near the horse corrals toward the northern horizon include the picturesque brown rolling hills that turn a lush green in the spring and are interspersed with patches of trees close to a mile away in the middleground. The foreground includes the rural setting of farmland and horses, with quarry land farther south. The visual quality (vividness, intactness, and unity) of the area south of the Project Area is moderately high.

West

El Charro Road, the western border of the Project Area, intersects I-580 to the north and continues as Fallon Road farther north and slightly west. The view toward the east end of the Project Area from El Charro Road is shown in Figure 3.1-7, Viewpoint 13. Open space pastureland is immediately west of El Charro Road, in unincorporated Alameda County. The project site is within view from the edge of single-family housing developments farther west within the Pleasanton city limits (Figure 3.1-7, Viewpoint 14). Open pastureland is within the Dublin city limits northwest of the Project Area, with new four- to five-story multi-family housing 0.75 mile from the Project Area (Figure 3.1-8, Viewpoint 15) and new roadways extending eastward toward Fallon Road. More direct views of the Project Area may be seen from the Fallon Road overpass while

turning onto the eastbound I-580 onramp immediately bordering the northwest corner of the Project Area (Figure 3.1-8, Viewpoint 16).

The visual quality (vividness, intactness, and unity) of the area west of the Project Area is moderately high.

Regulatory Setting

Federal and State Plans, Programs, and Policies

While I-580 has been found eligible to be an official State Scenic Highway, it has not been designated as such along the project area. Interstate-680 is an official State Scenic Highway, but it lies 4 miles west of the Project Area. Therefore, there are no specific federal or state regulations that apply to the visual resources associated with this project.

Local Plans, Programs, and Policies

City of Livermore General Plan

The General Plan identifies the view from I-580 south toward the Project Area and the Las Positas Golf Course as a scenic vista. This is shown in Figure 3.1-9 and is reproduced from the General Plan's Figure 4-1 referenced below. The following general plan (City of Livermore 2004a) policies are relevant to the proposed Project.

Community Character Element
B. Goals, Objectives, Policies, and Actions

Goal CC-1: Preserve and enhance Livermore's natural setting.

Objective CC-1.1: Use open space to protect and enhance local community character and identity, to preserve rural characteristics, and to provide an edge to urban growth.

Policies:

P2. The City shall permit no intensive development of the hills. Development including roads, buildings and other structural or land coverage shall be located, sited and designed to fit and be subordinate to the natural landforms. Under no circumstances shall development create uniform, geometrically terraced building sites which are contrary to the natural landforms and which detract, obscure or negatively effect the visual quality of the landforms.

P8. New development shall be designed to preserve views from existing neighborhoods to the greatest extent feasible.

P11. The City shall preserve and enhance, or work with and support the efforts of other agencies, as appropriate (e.g., with joint grant applications, sharing of



Viewpoint 9: Looking west from Freisman Road



Viewpoint 10: Las Positas Golf Course looking northwest



Viewpoint 11: Looking north from Arroyo Trail

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Figure 3.1-6
Viewpoints 9, 10 and 11

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Viewpoint 12: Looking north from El Charro Road



Viewpoint 13: Looking northeast from middle of project site



Viewpoint 14: Looking east from Staples Ranch Drive in Pleasanton

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Figure 3.1-7
Viewpoints 12, 13, and 14

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Viewpoint 15: Looking southeast from five-story residences



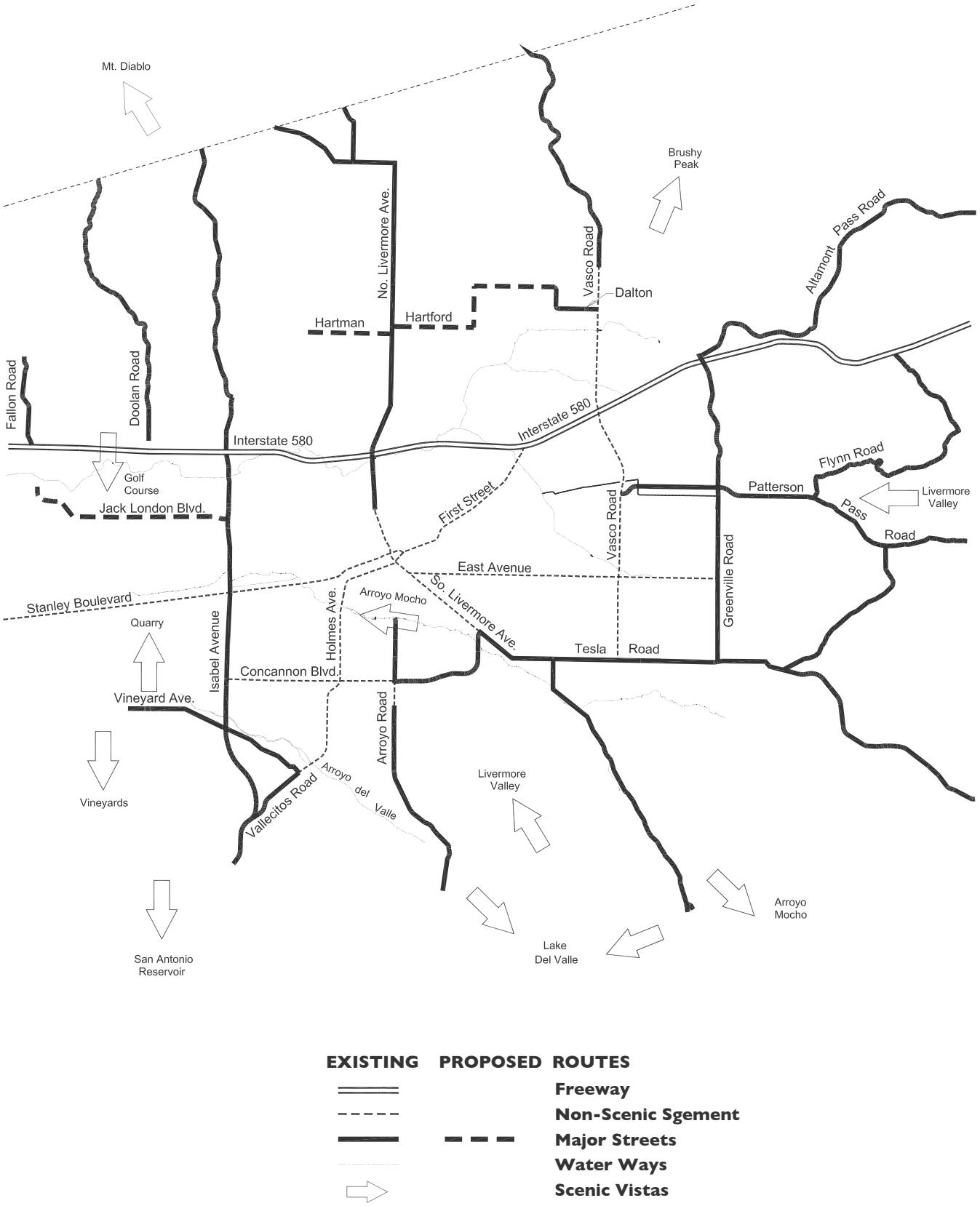
Viewpoint 16: Looking southeast from Fallon Road overpass

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Figure 3.1-8
Viewpoints 15 and 16

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06137.06 004 ADEIR Visual Assessment (12/06)

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Figure 3.1-9
City of Livermore General Plan
Community Character Element: Planned Scenic Routes

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staff resources and legal services), to preserve and enhance the following natural amenities:

> (a) Ridgelines, (b) Oak Woodlands and Grasslands, (c) Grasslands, (d) Riparian Woodland, (e) Arroyos and Creeks, (f) Knolls, (g) Brushy Peak, (h) Arroyo Mocho/Cedar Mountain, (i) Corral Hollow, (j) Sycamore Grove, (k) Hilltops (NLUGBI), (l) Slopes (NLUGBI), (m) Viewscapes (NLUGBI), (n) Frick Lake, and (o) Springtown Alkali Sink

P12. The City shall preserve and enhance the following manmade amenities:

> (a) Vineyards, (b) Other Agriculture, (d) Scenic Highways, Roads, and Corridors, and (f) Community Entrance Points

Objective CC-1.3: Minimize obtrusive glare and wasted energy from excessive nighttime lighting and preserve views of the nighttime sky.

Policy:

P1. The importance of views of the nighttime sky unimpaired by inappropriate intensities of light and glare shall be acknowledged as a significant scenic resource in Livermore.

Action:

A1. Incorporate standards in the development of design review guidelines that are concerned with lighting quantity, intensity, and design in order to minimize contributions to glare, light trespass and "sky glow" while providing nighttime lighting sufficient to ensure public safety.

Goal CC-2: Maintain high standards of urban design in Livermore

Objective CC-2.1: Maintain and enhance Livermore's urban design quality and encourage high quality design in all new development and redevelopment.

Policy:

P4. Design requirements and amenities shall be encouraged in new development and redevelopment, including, but not limited to:

(a) Interconnected street layout, (b) Clustering of buildings, (c) Landscaping on each lot, (d) Visual buffers, (e) Facilitating pedestrian activity, and (f) Distinctiveness in architectural design.

Goal CC-4 Protect and enhance public views within and from established scenic routes, including views of arroyos.

Objective CC-4.1: Protect public views from scenic routes and corridors.

Policies:

P1. Development shall not be allowed to obscure, detract from, or negatively affect the quality of the views from designated scenic routes.

P2. The City shall maintain in open space that portion of the hills which is seen from the freeway and which is within the I-580 Scenic Corridor as shown in Figure 4-1 (Figure 3.1-19 in this document). Any development within the I-580 Scenic Corridor is subject to the policies set forth under Goal CC-4 and the conditions set forth in *Section C, I-580 Scenic Corridor Implementation*.

P3. The City shall permit no development to wholly obstruct or significantly detract from views of any scenic area as viewed from a scenic route.

Objective CC-4.2: Provide a continuous, convenient system of scenic routes.

Policy:

P2. The scenic routes should afford aesthetically pleasing views to both the traveler and the outside observer throughout the entire system.

Objective CC-4.3: Establish efficient and attractive connecting links.

Policies:

P1. The scenic route system should include attractive and efficient links between routes of major scenic value and recreational and cultural centers.

P2. Links between scenic routes and recreational and cultural centers should include certain freeways and other roadways coordinated among appropriate jurisdictions.

Action:

A1. Trees, shrubs, and other landscaping shall be planted along scenic roads in accordance with a landscape plan approved by the City.

Objective CC-4.6: Use landscaping to increase the scenic qualities of scenic routes.

Policies:

P1. Landscaping should be designed and maintained in scenic route corridors to provide added visual interest, to frame scenic views, and to screen unsightly views.

Objective CC-4.7: Minimize the presence of transmission towers and lines within scenic routes.

Policies:

P1. New overhead transmission towers and lines should not be located within scenic routes.

P2. New, relocated, or existing utility distribution lines should be placed underground.

P3. If underground placement is not feasible, utility distribution lines should be located so as to be inconspicuous from the scenic route, on poles of an approved design.

P4. When more than one utility line is in an area, the lines should be combined on adjacent rights-of-way and common poles.

Objective CC-4.8: Establish architectural and site design review for projects within scenic routes.

Policies:

P1. Site planning, architectural, and landscape architectural design review shall be required so that development will be attractive from the highway and roads, and a harmonious relationship will exist among the various elements of proposed and existing developments and the visual qualities of the scenic route. Careful consideration shall be given to natural land contours and to appearances that will enhance scenic qualities from the scenic routes.

P2. Originality in landscape and construction design should be encouraged.

P3. Landscape and construction design should be in keeping with the Cityscape and natural skyline and reflect the density, movement, and activities of the population.

P4. In all zoning districts where the allowable height limit exceeds 35 feet, each proposed structure over 35 feet, except utility poles and lines, should be reviewed to ensure that such structure will not conflict with any view from any scenic route.

P5. Utilize view angles established in Community Character Element Section IV.C (I-580 Scenic Corridor Implementation) to prohibit structures from extending above the applicable view surface established by the view angle.

Objective CC-4.12: Provide for normal uses of land and protect against unsightly features in scenic routes.

Policy:

P2. Design and location of all signs should be regulated to prevent conglomerations of unsightly signs along roadsides.

Objective CC-4.14: Control removal of vegetation in scenic routes.

Policy:

P1. Except for agricultural crops, no vegetation should be removed without permission of the local jurisdiction, as a means of preserving scenic quality.

Objective CC-4.15: Control the alteration of streambeds and bodies of water in scenic routes.

Policies

P1. Alteration of streambeds or bodies of water and adjacent vegetation should be permitted only with approval of the local jurisdiction, as a means of preserving the natural scenic quality of stream courses, bodies of water, vegetation, and wildlife in the Valley.

P2. Development adjacent to streams, canals, reservoirs, and other bodies of water should be in a manner that will preserve the natural scenic qualities of the area, or when scenic qualities are minimal shall be designed and treated so as to result in naturalistic forms. Zone 7 has adopted Interim Design Standards and Practices for future construction improvements of channels. Any development with arroyos and creeks fall under these standards and are subject to Zone 7's review to ensure there are no impacts to Zone 7 facilities.

Community Character Element
C. I-580 Scenic Corridor Implementation

4. I-580 Scenic Corridor Subareas

The I-580 Scenic Corridor is divided into six subareas, as shown in Figure 4-2 [not shown in this document]. Policies and development standards are identified for each subarea that reflect the unique visual resources in each area. Development is not permitted if it is inconsistent with the North Livermore Urban Growth Boundary Initiative (NLUGBI). The policies and development standards (such as identified view angles) are intended to preserve views to ridgelines and hillsides as seen from I-580. Development within each Subarea shall also be subject to the general Scenic Corridor design standards contained in Objective CC4.10 and related policies, except as otherwise expressly provided.

Subarea 6

c. Subpart 6A extends from El Charro Road to the west to Airway Boulevard to the east. The western half consists of nearly level agricultural fields and undeveloped parcels. Las Positas Golf Course comprises the eastern half. A golf driving range is located in the center of the Subpart, with fields on either side. Farmhouses, barns and other structures related to local agriculture are located within this area.

A 2.2 degree view angle is established for this Subpart to preserve views of the ridgelines.

Circulation Element

Goal CIR-5: Protect neighborhood quality and community character through circulation planning.

Objective CIR-5.2: Plan and maintain the circulation system to prevent or minimize environmental impacts.

Policy:

P1. Require local roadway improvements to minimize adverse land use, air quality, noise, community appearance, vegetation and wildlife, drainage, and other environmental impacts.

Livermore Planning and Zoning Code

Chapter 3-05, "General Provisions," of the LPZC (City of Livermore 2000), contains the following height restriction relevant to the proposed Project.

3-05-270 Heights of buildings and structures.

C. Notwithstanding structural limitations found elsewhere in this code, nor exceptions to those height limitations found in this section, the height of structures located within 5,000 feet of any airport runway shall not exceed 40 feet. (Ord. 1001, 1979; Ord. 442 § 20.80)

Viewer Groups and Viewer Response

Key viewpoints, shown in Figure 3.1-2, have been chosen for their representation of the surrounding landscape character and for their representation of views from affected viewers.

Residents

Three ranch homes have direct views of the Project Area from the north, across I-580. Approximately six leased residences are on the southwest corner of the Children's Hospital property within the Specific Plan Area and have views of the Las Positas Golf Course to the east and south and the Specific Plan Area to the west. Directly west of the Project Area, close to 17 single-family homes among other nearby neighborhood homes have direct foreground views (within 0.4 mile) of the Project Area over across open fields. Residents are likely to have moderate to moderately high sensitivity to visual changes due to their proximity to the Project Area and a moderate sense of ownership over views from their residences.

Businesses

Two-story offices northeast of the Project Area are as close as 0.15 mile north of the Project Area and immediately east of Doolan Road (Figure 3.1-5, Viewpoint 7). Directly south of the Project Area lies agricultural and horse grazing land, with associated farm and animal shelter structures. The office workers are likely to have extended viewing periods of this land, but they may typically be less concerned over visual changes than are the business owners. Although agricultural and horse grazing workers would have a higher sense of ownership than the nearby office workers, their viewing periods are likely to be more fleeting. Therefore, businesses are considered to have low to moderate visual sensitivity.

Roadway Users

The majority of roadway users would view the Project Area from I-580, a major interregional route for commuters to the west and the Bay Area beyond. From 12,600 to 13,000 slowly moving peak-hour commuters on I-580 view the Project Area every day (Caltrans 2004). While commuters generally become familiar with the passing landscape and focus more on the roadway and roadway conditions, especially when attaining standard roadway speeds (65 mph), they are likely to have longer and more directed views of the Project Area when the traffic is congested. In addition, as stated in the City's General Plan:

> Protection of scenic views from I-580 is of particular importance. This heavily-traveled roadway provides some of the best views of Livermore's surrounding hillsides and ridgelines. Policies and actions in this General Plan specifically seek to preserve and protect scenic views within the designated I-580 Scenic Corridor through control of grading, landscaping, and building height. The I-580 Scenic Corridor is defined as the area within 3,500 feet of the freeway centerline and visible from the roadway. [City of Livermore 2004a.]

As previously described in the "Visual Character" section above, a few of the roadways north of I-580 provide views of the Project Area from the rising, rolling hillsides. Airway Boulevard, which currently has I-580 access east of Las Positas Golf Course, would only provide views of the Airway Boulevard Extension option. West Jack London Boulevard is not well traveled within the Project Area, though, if chosen, the roadway would provide views of the Jack London Boulevard Extension option. Primarily truck drivers traveling El Charro Road to and from the quarries south of the Project Area have views of the Project Area from the southwest and immediate west. The proposed Project itself would provide direct views of the Project Area for many drivers entering Livermore via El Charro Road and the proposed east-west roadway extension. Roadway users, primarily residents north of I-580, would access eastbound I-580 from the Fallon Road overpass and turn onto the onramp immediately bordering the northwest corner of the Project Area (Figure 3.1-8, Viewpoint 16). Especially in slower traffic, these roadway users would have clear, direct, and close views of the Project Area from this vantage point.

Because of continued urbanization within the region, areas of visual quality within the project setting will acquire greater significance as views of the surrounding hillsides, vineyards, grazing land, and vegetated creek corridors are impacted by development. Nonetheless motorists, such as commuters and non-recreational travelers, would normally be expected to have low sensitivity to visual changes.

Recreationists

Recreationists in the project vicinity include golfers at Las Positas Golf Course, horseback riders at the equestrian facilities south of the Specific Plan Area, and recreational pilots flying in and out of the Livermore Municipal Airport.

The golf course appears as an oasis of greenery and wildlife amid the surrounding urban and agricultural environments. This creates a visually pleasing experience for patrons using the course. Small airplanes taking off and landing at the neighboring airport add a unique element to the course's character for golfing patrons.

No existing bike lanes or trails pass near the project and no cyclists were observed during the site visit. However, the proposed Livermore to Pleasanton Arroyo Trail connector would draw cyclists, pedestrians, and horseback riders through the Project Area from Livermore, Dublin, Pleasanton, and the surrounding region. Views from this trail would encompass mountain ridges in almost every direction, with rolling hills to the north and Mt. Diablo to the northwest.

Recreational small airplane pilots are likely to view the area as a whole and be conscious of the natural farmland and hills surrounding the Project Area and the built-out surrounding cities to the east, southwest, west, and northwest. Given that their views of the Project Area occur only during take-off and landing, when the primary focus is (or should be) on safe airplane operations, their duration of views is fleeting at best.

Recreationists are likely to regard the natural and built surroundings as a holistic visual experience. When using local roadways, recreationists are likely to have moderate visual sensitivity due to their focus on roadway and traffic conditions, whereas when golfing, cycling, hiking, or horseback riding they are likely to have moderate-to-high levels of sensitivity. Recreational pilots are considered to have low levels of sensitivity, however, due to the focus of their attention being on takeoff and landing procedures at the time they might observe the Specific Plan Area.

Impact Analysis

Thresholds of Significance

The proposed Project would have a significant impact on aesthetics and visual resources if it would:

- result in visual conditions that would conflict with applicable policies and regulations governing aesthetics and community character;
- have a substantial adverse effect on a scenic vista, or would substantially damage scenic resources, including but not limited to trees, rock outcroppings, and historic buildings;
- substantially degrade the existing visual character of the site and its surroundings;
- result in the significant disruption or blocking of existing views of scenic resources; or
- create substantial light or glare which would adversely affect day or nighttime views.

Approach and Methodology

The analysis of potential impacts on visual resources and aesthetics is based on field observations of the Project Area and its surroundings and review of the following:

- architectural and engineering data and drawings for the proposed Project,
- aerial and ground-level photographs of the Project Area, and
- relevant planning documents.

Figures 3.1-10a through 3.1-10f present five existing views of the Project Area with five associated visual simulations of the proposed Project..

The Airway Boulevard Extension option would impact viewer groups more than the Jack London Boulevard Extension option because of its proximity to the larger number of viewers on I-580 and the impact on views of the golf course and the added pavement near I-580. However, the overall impacts are similar for each option and will be addressed together unless the impacts for either option need to be otherwise specified within the discussion.



VS-1a Existing view from I-580E at El Charro looking southeast (wide-angle)



VS-1a Visual simulation of Prime Outlets Livermore Valley



VS-1a Visual simulation of Prime Outlets Livermore Valley and El Charro Specific Plan Massing

Source: Environmental Vision

0613706 003 Specific Plan EIR (01-07)

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Figure 3.1-10a
Visual Simulations

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VS-1b Existing view from I-580E at El Charro looking south (wide-angle)



VS-1b Visual simulation of Prime Outlets Livermore Valley

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Figure 3-10b
Visual Simulations

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VS-2a Existing view from I-580E looking southeast (wide-angle)



VS-2a Visual simulation of Children's Hospital Property with Non-Compliant El Charro Specific Plan Massing



VS-2a Visual simulation of Children's Hospital Property with Compliant El Charro Specific Plan Massing

Source: Environmental Vision

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Figure 3-10c
Visual Simulations

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VS-2b Existing view from I-580E looking south (wide-angle)



VS-2b Visual simulation of Children's Hospital Property with Non-Compliant El Charro Specific Plan Massing



VS-2b Visual simulation of Children's Hospital Property with Compliant El Charro Specific Plan Massing

Source: Environmental Vision

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Figure 3-10d
Visual Simulations

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VS-3 Existing view from Golf Course Hole 12 looking west (wide-angle)



VS-3 Visual simulation of El Charro Specific Plan Massing

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Figure 3-10e
Visual Simulations

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VS-4 Existing view from Arroyo trail at fish ladder looking north (wide-angle)



VS-4 Visual simulation of Prime Outlets Livermore Valley



VS-4 Visual simulation of Prime Outlets Livermore Valley and El Charro Specific Plan Massing

Source: Environmental Vision

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Figure 3.1-10f
Visual Simulations

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Impacts and Mitigation Measures

Impact VIS-1: Effect on a Scenic Vista and Scenic Resources—Less than Significant

The City of Livermore General Plan designates the Specific Plan Area for urban development, and the conversion of the area from rural to urban uses, including farmland and visual impacts, was previously considered in the General Plan EIR certified in February 2004. The following discussion is more specific to the Specific Plan and proposed development.

The City's General Plan seeks to protect views from I-580 to the surrounding hills and ridgelines. Replacing 150 acres of rural open space with urban development, including pavement, streetlights, and commercial structures, would reduce views of the southern ridgelines and largely eliminate the rural character of the Specific Plan Area. These changes will be particularly noticeable from or across public roadways, including the freeway, the El Charro interchange, and the future extension of Jack London Boulevard. Fewer visual impacts will affect neighboring properties, including the golf course and distant residences in the surrounding area.

The Specific Plan includes two circumstances under which buildings or architectural elements may project vertically into the view plane of Subarea 6 of the Scenic Corridor (described in Chapter 2 of the Specific Plan). General Plan Amendments to the Scenic Corridor view angle are being processed concurrently with the formulation of the Specific Plan to ensure that the Specific Plan is consistent with the General Plan, which regulates view angles. Projections into the Scenic Corridor view plane would be allowed under site-specific conditions, which include the following.

- Institutional uses, which would be allowed an 8-foot vertical projection into the view plane if located on the Children's Hospital site. The design of an institutional/assembly building, if proposed, would require more volume and mass, and taller ceiling heights than commercial land uses.
- Special architectural elements, which could project into the view plane to establish a clearly discernible gateway on the Prime Outlets Livermore Valley property into Livermore.

These projections consider the functional needs of the proposed land uses and the potential visual implications of these projections. The overall intent is to provide development and landscaping that creates a cohesive district within Livermore and serves as a city gateway amenity, while preserving views of the southern ridgelines.

When seen as a cohesive district, viewers will discern a layered landscape with foreground views of vineyards, trees, shrubs, parking and streets; middle ground views of buildings, including overall massing and roof forms; and background views of hills and windrows of trees in the distance. The following discussion

describes the character, quality, and circumstances under which these special, site-specific conditions would occur.

Children's Hospital

The Children's Hospital site is located in the northeastern corner of the Specific Plan Area. This site is divided into three areas by the Arroyo Los Positas corridor and could be further divided by the proposed Airway Boulevard Extension. Because of the setback requirements associated with these conditions, the potential net developable area and building envelope(s) on this site would have unusual shapes and be relatively small.

While the site would remain suitable for traditional commercial uses, institutional uses may require projections into the Scenic Corridor view plane. To accommodate auditorium-style rooms large enough to accommodate large gatherings of people, institutional buildings often require ceiling heights taller than those used for commercial structures.

Johnson-Himsl Parcel adjacent to I-580

The General Plan recognizes this area as an important western gateway into Livermore. The Specific Plan allows for the development of a regional lifestyle shopping area on this site. Accordingly, the design of this development must provide more vertical height to facilitate high quality architecture fronting the freeway, while preserving views of distance hills.

To address this design challenge, the Specific Plan advocates the creation of carefully placed vertical architectural elements, such as towers, located within the cluster of buildings. The character of the buildings would reflect the agrarian heritage of Livermore and include visually discernible components including base, body and roof elements. The character of the roof elements and buildings would be consistent with Specific Plan design guidelines, and be integrated as a harmonious element of the greater development form. The Specific Plan includes building, lighting, parking lot, utility, and landscaping design standards, as well as guidelines and directives for the design of the city gateway feature at the new intersection of El Charro Road and Jack London/Airway Boulevard (see Chapter 3 of the Specific Plan. Chapter 7, section 7.3.2, of the Specific Plan includes the requirement for design review of each development proposed within the Specific Plan Area. The design review process will be used to ensure that projects within the Specific Plan Area are consistent with the community character provision, design guidelines and development standards of the Plan (EDAW|AECOM 2006). These standards and requirements are designed to reduce the effect of the new development.

The Specific Plan, following General Plan and LPZC requirements, identifies a maximum building height limit of 40 feet and a view angle of 2.2 degrees starting four feet above the southern edge of the eastbound right-hand lane on I-580.

The proposed Prime Outlets Livermore Valley development is functionally one story but includes architectural features up to 50 feet in height with a setback ranging from 490 to 590 feet from I-580. At a distance of approximately 600 feet, the designated view angle would limit buildings to a height of 26 feet, 11 inches. The proposed roofline, with architectural features, nearly doubles the view angle limit. The encroachment of the view angle would be approximately 675 linear feet in total, out of approximately 1,600 feet of site frontage for the Prime Outlet center, although discontinuous as the obscuring building features are isolated rooflines.

The alternative church development on the northwest parcel of the Children's Hospital site could also break the plane intended to preserve views of distant ridgelines. The City is considering a General Plan Amendment for this property, for institutional (not commercial) uses. This would mandate a 400-foot setback from I-580 but allow a 40-foot building height over approximately 220 feet of property frontage. The rest of the church buildings would comply, as would the remainder of the Children's Hospital frontage. In total, 220 feet of frontage would be above the 2.2-degree view plane, or approximately 17% of the entire length of Children's Hospital parcel frontage.

Collectively, the encroachments of both developments total about 896 feet, or about 17% of the total Specific Plan frontage along I-580.

- The Prime Outlets Livermore Valley gross building area is approximately 450,000 square feet. About 22,209 square feet, including trellis features, would project above the view plane. This represents about 4.8% of the total Aerial Roof Area of the project and about 1.2% of the project site. The Church auditorium is an area less than 40,000 square feet, which would project above the view plane or about 2.6% of the project site. In terms of area above the roof plane, both projects would total approximately 62,200 feet of roofline above the view angle, or about 1% of the Specific Plan Area (152 acres) designated for private development. Given these considerations, these impacts are considered less than significant, and no mitigation is required.

Impact VIS-2: Substantial Degradation of the Existing Visual Character of the Site and Its Surroundings—Significant and Unavoidable

The proposed Project would permanently change the existing transitional rural/urban character of the Project Area at the "gateway" to the City of Livermore to an urban setting. Considering the scenic rural nature of the existing vineyards, grazing land, rolling hills, and vegetated creek corridors separating the urban centers of Livermore, Pleasanton, and Dublin in the Livermore Valley, combined with the increasingly urban nature of that land, the visual character of the Project Area and its surroundings are expected to be substantially degraded. This is considered a significant impact. The Specific Plan design standards, implemented through design review, are intended to reduce the impact through development. However, the magnitude of the proposed development will result

in changes to visual character that cannot be reduced to a less-than-significant level. Thus, this impact is considered to be significant and unavoidable.

Impact VIS-3: Creation of Substantial Light or Glare Adversely Affecting Day or Nighttime Views—Significant and Unavoidable

Nighttime construction typically involves using high-wattage lighting sources. The proposed Project construction would introduce temporary nighttime light to nearby roadway users and residents as well as temporary daytime glare to nearby roadway users and recreationists, particularly to golfers. The impact from nighttime construction lighting would be significant.

Roadway users and recreationists would have their direct views of green- and earth-colored farm fields replaced with pavement, light poles, and structures potentially with windows reflecting sunlight back to those viewers when phases of the proposed Project are constructed. Due to the golfers' moderately high sensitivity to visual changes and the large amount (250 acres) of open space that would be replaced with lighting and reflective materials within a very short distance of Las Positas Golf Course, the overall operational light and glare impacts on golfers are considered significant.

Nighttime operational impacts from light sources such as parking lot lights, structural lighting, landscape lighting, and additional vehicle headlights on new or extended roadways would affect nighttime views for nearby roadway users and some residents. The overall ambient light from these sources throughout the 250-acre Specific Plan Area would also contribute to substantial light and glare.

Vehicles on I-580 would experience some headlight glare from vehicles traveling the realigned Freisman Road as well as glare from vehicle headlights, parking lot lights, and landscaping lights on the Prime Outlets and other commercial property parking lots. However, these elements would mitigate the glare from that nighttime light: the proposed 50-foot vineyard buffer between I-580 and the proposed Freisman Road realignment, the rock wall and vineyard buffer (which would be as narrow as 41.5 feet), between I-580 and the Prime Outlets parking lot, and the 4-foot continuous landscape strip between each row of that parking lot. Compliance with section 3.6, "Building and Site Lighting," of the Specific Plan (EDAW|AECOM 2006) also would reduce the effects of fugitive light.

The project elements described above and the implementation of Mitigation Measures VIS-3a and VIS-3b would reduce the impact of new sources of light and glare, but not to a less-than-significant level. This impact would remain significant and unavoidable.

Mitigation Measure VIS-3a: Plant Vegetation to Screen Views from Las Positas Golf Course

To screen views of the proposed development, the City will follow guidelines in section 3.11, "Landscape Design," of the Specific Plan by requiring the installation of a vegetated visual buffer at these locations:

- between the gap in riparian vegetation northwest of the teeing area of hole #6 of the 18-hole (non-executive) course on the southeast corner of the adjoining City property (APN# 904-0001-011-01);
- along new areas of the golf course (if created) as part of the redesign of the course; and
- along the south and east border of the Children's Hospital property, or on the east border of the Children's Hospital property and on the City property to the immediate south (APN# 904-001-001-09).

Mitigation Measure VIS-3b: Limit Construction to Daylight Hours or Minimize Fugitive Light from Portable Sources

In order to minimize the light impacts on nearby roadway users and residents, one of the two measures below must be followed.

- Construction activities scheduled to occur after 6 p.m. or on weekends will not continue past daylight hours (which varies according to season). This would eliminate the need to introduce high-wattage lighting sources to facilitate construction activities at night.
- Portable construction lighting will use color-corrected halide lights. At a minimum, construction-related light and glare will be minimized to the maximum extent feasible, given safety considerations. Portable lights will be operated at the lowest allowable height. All lights will be screened and directed downward toward work activities and away from I-580 and residents east and west of the Project Area. The number of nighttime lights used will be minimized to the greatest extent possible. No permanent lighting fixtures will be installed.

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3.2 Agricultural Resources

This section describes the proposed Project's effects on agriculture and recommends mitigation to reduce significant impacts to a less-than-significant level. Information about the Specific Plan Area and vicinity was obtained from a review of the City of Livermore General Plan, the proposed Specific Plan, and data from the Farmland Mapping and Monitoring Program (FMMP).

Agricultural Land Classification Concepts and Terminology

Farmland quality refers to the ability of land to support various types and intensities of crop or livestock production. The factors that affect farmland quality include physical and chemical composition of soils, topography, climate, and availability of irrigation water. Various assessment tools are used to evaluate these factors and characterize farmland quality.

One of these tools is the Important Farmland Mapping System, which is used by the DOC as part of its FMMP. Important Farmland maps are prepared periodically for most of the state's agricultural areas based on information from Natural Resources Conservation Service (NRCS) soil survey maps, land inventory and monitoring criteria developed by the NRCS, and land use information mapped by the California Department of Water Resources (DWR). These criteria generally are expressed as definitions that characterize the land's suitability for agricultural production, physical and chemical characteristics of the soil, and actual land use. Both the maps and definition criteria are utilized in this section to evaluate potential impacts.

The Important Farmland Mapping System incorporates eight mapping categories; five of them relate to farmlands, and the other three are associated with lands used for nonagricultural purposes. The five farmland mapping categories are summarized below.

- **Prime Farmland**: Lands with the combination of physical and chemical features best able to sustain long-term production of agricultural crops. The land must be supported by a developed irrigation water supply that is dependable and of adequate quality during the growing season. It also must have been used for the production of irrigated crops at some time during the 4 years before mapping data were collected.
- **Farmland of Statewide Importance**: Lands with agricultural land use characteristics, irrigation water supplies, and physical characteristics similar to those of Prime Farmland but with minor shortcomings, such as steeper slopes or less ability to retain moisture.

- **Unique Farmland**: Lands with lesser-quality soils used for the production of California's leading agricultural cash crops. These lands usually are irrigated but may include nonirrigated orchards or vineyards, as found in some of the state's climatic zones.
- **Farmland of Local Importance**: Lands of importance to the local agricultural economy, as determined by each county's board of supervisors and a local advisory committee.
- **Grazing Land**: Lands in which the existing vegetation is suited to the grazing of livestock.

Environmental Setting

City of Livermore

Approximately 1,061 acres of agricultural lands exist within the City limits. Lands in southern Livermore are generally in agricultural use, and lands to the north and west of Livermore are generally mapped as Grazing Land. Prime Farmland, Farmland of Statewide Importance, and Unique Farmland are primarily located south of City limits (City of Livermore 2004a).

Livermore is primarily urban and built out. According to the Alameda County Williamson Act Lands 2006 map, which shows land enrolled in the Williamson Act and Farmland Security Zone contracts as of January 1, 2006, there are only four locations currently within the Livermore City boundary, one in the southern area of Livermore, two north of I-580, and one within the Specific Plan Area, that are enrolled in Williamson Act and Farmland Security Zone Contracts (California Department of Conservation 2006b). The Williamson Act provides incentives to maintain land under agricultural use through preferential tax rates. Of these areas, the two north of I-580 are considered Prime Farmland and are designated as Open Space for Hillside Conservation in the General Plan. The area under contract in the southern area of Livermore is considered Prime Farmland and is designated in the City's General Plan as Agriculture/Viticulture. The location within the Specific Plan Area is discussed below.

Project Area and Vicinity

South of the Specific Plan Area, the southern boundary of which runs contiguous with the City limit, is agricultural land (four parcels) owned by Rhodes & Jamieson (R&J) that is currently used for horse grazing and includes corrals, pole barns, and other agricultural outbuildings. The easternmost of the R&J parcels is in active agricultural production for alfalfa and hay. Land directly south of the Specific Plan Area is also mapped as Prime Farmland (California Department of Conservation 2004).

Land north of I-580 is mapped as Grazing Land (California Department of Conservation 2004). This land is not considered Prime Farmland, Farmland of Statewide Importance, or Unique Farmland. Additionally, the land to the northwest (across I-580) within the City of Dublin city limits is planned for development under a specific plan by the City of Dublin.

A public golf course and municipal airport are located to the east of the Specific Plan Area. Land southeast of the project at the southwest corner of West Jack London Boulevard and Isabel Avenue is shown as Grazing Land (California Department of Conservation 2004) and is being developed as Oaks Business Park. Land to the west, which is mapped as Grazing Land (California Department of Conservation 2004), is proposed for development under the Staples Ranch Project by the City of Pleasanton.

Specific Plan Area

The Alameda County Williamson Act Lands 2006 map (California Department of Conservation 2006b) shows only one parcel within the Specific Plan boundary under Williamson Act contract. This parcel is shown on the map as Non-Prime Agricultural Land with a Non-Renewal specification, meaning that at the end of a nine-year non-renewal period, the contract will be terminated. The Notice of Non-Renewal of the contract was filed on approximately February 1, 2006 with Alameda County and the California Department of Conservation (DOC). This is the 36.6-acre Children's Hospital property located at the easternmost area of the Specific Plan Area.

The existing land use for the Specific Plan Area extending from El Charro Road to the Sywest property is currently dry farming or fallow agricultural land. Part of the Sywest property is under lease as a driving range, and approximately 7.75 acres of the Children's Hospital property is a farm complex with six rental residences and associated agricultural outbuildings. The City parcels within the southern portion of the Project Area are not currently being farmed.

The 2004 DOC records that are part of the FMMP identify as Grazing Land most portions of the Specific Plan Area except the Sywest parcel, portions of the northwestern Johnson-Himsl properties and the Children's Hospital property (California Department of Conservation 2004). Although the Children's Hospital property is mapped as Prime Farmland on the 2004 DOC records, the DOC redesignated this property in the Alameda County Williamson Act Lands 2006 map. The 2006 map shows the Children's Hospital property as Non-prime Agricultural Land in Non-Renewal. Therefore, the Williamson Act Contract will be terminated and/or transferred to another property. Most of the northwestern properties proposed for Prime Outlets Livermore Valley are mapped as Other Land, and the Sywest parcel is mapped as Developed (California Department of Conservation 2004). According to property owners, the parcels within the Specific Plan Area do not have water supplies developed for irrigated agricultural production. None of the parcels have been used for irrigated crops over the past

nine years. Based on this information, the Williamson Act Lands map, and the DOC's definition of Prime Farmland, no Prime Farmland is located within the Specific Plan Area.

Regulatory Setting

State Programs

California Farmland Mapping and Monitoring Program

The goal of the California FMMP is to provide consistent and impartial data to decision makers for use in assessing present statuses, reviewing trends, and planning for the future of California's agricultural land resources. The FMMP produces updated Important Farmland maps, which are a hybrid of resource quality (soils) and land use information, every 2 years. These maps identify Prime Farmland, Unique Farmland, Farmland of Statewide Importance, Farmland of Local Importance, urbanized land, and other lands. Data also are released in statistical formats, principally the biennial California Farmland Conversion Report.

California Land Conservation Act of 1965 (Williamson Act)

The purpose of the California Land Conservation Act of 1965 (California Government Code 51200–51295), commonly known as the Williamson Act, is to provide incentives, through reduced property taxes, to deter the early conversion of agricultural and open space lands. In return for the preferential tax rate, the landowner is required to sign a contract with the county or city agreeing not to develop the land for a minimum 10-year period. Contracts are automatically renewed annually unless a party to the contract files a notice of nonrenewal or petitions for cancellation. All lands defined by the state as "prime farmland, other than prime farmland, and open space land" are eligible for coverage by a Williamson Act contract. Land classified as other than Prime Farmland or open space land can be placed under contract if it is located in an area designated by a county or city as an agricultural preserve.

Local Regulations

City of Livermore

The City's General Plan Land Use Element and Open Space and Conservation Element provide guidance for farmland in the Project Area. The General Plan (City of Livermore 2004a) states that farmland is an important component of open space preservation around the city. Agricultural lands not only provide visual relief from urbanized areas, but also, in combination with planning and zoning regulations, restrict the outward growth of the city. In addition, a vibrant agricultural sector is an important amenity that attracts visitors to the city, improves quality of life, and results in a more diversified local economy (City of Livermore 2004a).

Farmland in the city is classified and mapped by the DOC's Division of Land Resource Protection. Farmland is mapped into categories ranging from Prime Farmland, which has the best combination of physical characteristics able to sustain long-term agricultural production, to Grazing Land, which allows for the grazing of livestock. The following applicable objective and policies are described in the General Plan Open Space and Conservation Element.

> **Objective OSC–3.1:** Preserve agricultural land, a vital part of Livermore's open space network and an irreplaceable natural resource.
>
> **Policies:**
>
> **P1.** Undeveloped lands that are State-designated as Prime Farmland, Farmland of Statewide Importance, and Unique Farmland shall be preserved, to the greatest extent feasible, for open space or agricultural use.
>
> **P2.** The City shall encourage the County to preserve agricultural activities outside the Urban Growth Boundary.
>
> **P3.** The City shall take all possible steps to preserve and expand the vineyards.
>
> **P4.** Expansion of viticulture on lands rated "good and very good" for the production of wine grapes, as defined by the National Resources Conservation Service, shall be encouraged.
>
> **P5.** The City shall encourage agricultural landowners to enter the agricultural preserve program established under the Land Conservation Act, particularly in areas adjacent to patterns of urbanization encouraged by the General Plan.

Impact Analysis

Thresholds of Significance

The proposed Project would have a significant impact on agricultural resources if it would:

- convert to non-agricultural use Prime Farmland, Farmland of Statewide Importance, or Unique Farmland as defined by the State law and the DOC;
- conflict with existing zoning for agricultural use, including the City's Right to Farm Ordinance, or a Williamson Act contract; or
- involve other changes in the existing environment, which, due to their location or nature, could result in the conversion of farmland to nonagricultural use.

Approach and Methodology

Farmland designations were identified based on FMMP mapped data from the DOC (2004). Properties currently under Williamson Act contract were identified by a review of available maps and data also provided by the Livermore Community Development Department and the DOC (2006b).

Potential impacts on agriculture are based on the proposed Project's potential to affect agricultural lands, as described in the "Environmental Setting" part of this section, during the construction and operation phases of the proposed Project.

Impacts and Mitigation Measures

Impact AG-1: Conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to a Nonagricultural Use—Less than Significant with Mitigation

As described above in the "Environmental Setting" part of this section, there is no land within the Specific Plan Area designated as Prime Farmland.

However, the 2004 DOC farmland data identifies the R&J property immediately south of the Specific Plan Area (APN 904-0001-007-26) as Prime Farmland. The interim and ultimate buildouts of the Jack London Boulevard Extension option would convert portions of the R&J property from Prime Farmland to roadway uses. The interim alignment of the Jack London Boulevard Extension option would convert Prime Farmland to roadway at the northeast corner of the R&J property immediately west of the City-owned parcel APN 904-0001-007-25. The ultimate buildout of the Jack London Boulevard Extension option would convert Prime Farmland in part of the southeast area of the R&J-owned parcel to roadway uses.

It should be noted, however, that the R&J property owners have filed an application for a Surface Mining Permit (SMP) of this parcel, known as SMP-38. If SMP-38 is mined prior to the proposed exchange of land in this area and buildout of the interim or ultimate alignments of the Jack London Boulevard Extension option, then the mitigation from the R&J EIR (Douglas Herring & Associates 2004) would be implemented. If the land exchange is implemented and the interim or ultimate roadways are constructed prior to the mining of SMP-38, this EIR's impact discussion for agricultural resources would apply to the parcel. Buildout of the interim and ultimate Jack London Boulevard Extension option would result in approximately 0.5 acre of impacts to Prime Farmland.

Consistent with General Plan Conservation Element policies OSC 3.1, P1, P2, and P5, which were established to mitigate the loss of agricultural land through preservation outside of City boundaries, mitigation would be required at a ratio of 1:1 with development of any property that meets the criteria for Prime Farmland. The General Plan EIR (LSA Associates 2003) found that impacts related to the conversion of farmland from buildout of the General Plan,

including the extension of Jack London Boulevard, were less than significant because General Plan Open Space and Conservation Element policies OSC-3.1 P1, P2, and P5 would encourage the preservation of agricultural land, preserve agricultural lands outside the urban growth boundary, and protect agricultural land with conservation easements (LSA Associates 2003). Implementation of these policies has already resulted in permanent protection of over 4,000 acres of agricultural lands with agricultural easements in perpetuity.

Impacts from the conversion of Prime Farmland would be reduced to less-than-significant levels by implementation of the following measure.

> **Mitigation Measure AG-1: Protect Prime Farmland**
> Consistent with General Plan Conservation Element policies OSC 3.1, P1, P2, and P5, the City will mitigate the loss of Prime Farmland through development of the proposed Project at a ratio of 1:1. The protection will be in perpetuity through agricultural land easements or other permanent protection.

Impact AG-2: Conflicts with Existing Zoning for Agricultural Uses or a Williamson Act Contract—Less than Significant

The Children's Hospital property is the only parcel within the Project Area that is currently under a Williamson Act contract (California Department of Conservation 2006b); however, the property owners have filed a Notice of Nonrenewal for the Williamson Act contract. Because a Notice of Nonrenewal has been filed and an exchange, transfer and/or cancellation of the contract will be required by the City, the proposed Project would not conflict with a Williamson Act contract and this impact would be less than significant.

The proposed zoning districts in the Specific Plan would be consistent with current zoning and land uses and the General Plan. The southern half of the Specific Plan Area, with the exception of the Johnson-Himsl property south of the new Jack London/Airway Boulevard intersection, would continue to be designated as open space. Therefore, this impact is considered less than significant, and no mitigation is required.

Impact AG-3: Other Changes in the Existing Environment, which, Due to Their Location or Nature, Could Result in Conversion of Farmland to a Nonagricultural Use—Less than Significant

Implementation of the proposed Project would involve the conversion of farmland to nonagricultural use. This proposed conversion could indirectly contribute to the conversion of land to the south and west to nonagricultural uses. The County and the City of Pleasanton could choose not to develop agricultural areas, but this is not within the City of Livermore's jurisdiction. However, the uses associated with the Specific Plan were analyzed in the General Plan EIR, which found that indirect impacts related to agricultural conversion would be less than significant with General Plan buildout because Open Space and Conservation Element policies OSC-3.1 P1, P2, and P5, along with the City's program that established urban growth boundaries around the city, and agricultural easements in perpetuity for over 4,000 acres of surrounding

agricultural lands, would encourage the preservation of agricultural land, preserve agricultural lands outside the urban growth boundary, and protect agricultural land with conservation easements. Therefore, this impact is considered less than significant, and no mitigation is required.

3.3 Air Quality

This section describes the setting and potential air quality impacts of the construction and operation of the proposed Project. Specifically, it focuses on the relationship between topography and climate, discusses federal and state ambient air quality standards and existing air quality conditions in the Project Area, describes the overall regulatory framework for air quality management in California and the region, and identifies sensitive receptors in the Project Area. This section identifies the potential air quality impacts of the Project and proposes mitigation measures to substantially reduce significant impacts.

The primary factors that determine air quality are the locations of air pollutant sources and the amount of pollutants emitted from those sources. Meteorological and topographical conditions are also important factors. Atmospheric conditions, such as wind speed, wind direction, and air temperature gradients, interact with the physical features of the landscape to determine the movement and dispersal of air pollutants.

Environmental Setting

Existing Conditions

The proposed Project is located within Alameda County, which is located in the San Francisco Bay Area Air Basin (SFBAAB). The SFBAAB consists of Santa Clara County and six other counties—Alameda, Contra Costa, Marin, San Francisco, San Mateo, and Napa—as well as portions of Solano and Sonoma Counties.

Regional Climate and Meteorology

The Project Area is in the Livermore Valley, in Alameda County, California, and lies within the SFBAAB. The Livermore Valley is a sheltered inland valley near the eastern border of the SFBAAB. The western side of the valley is bordered by hills with elevations of 1,000 to 1,500 feet, with two gaps—Hayward Pass and Niles Canyon—connecting the valley to the central Bay Area. The eastern side of the valley is bordered by hills of similar elevation, with one major passage to the San Joaquin Valley, called Altamont Pass, and several secondary passages. To the north lie the Black Hills and Mount Diablo. A northwest-to-southeast channel connects Diablo Valley (to the northwest) to Livermore Valley. The south side of Livermore Valley is bordered by mountains with elevations of approximately 3,000 to 3,500 feet.

During summer months, when there is a strong inversion with a low ceiling, air movement is weak, and pollutants become trapped and concentrated. Maximum

summer temperatures in Livermore Valley (in degrees Fahrenheit) range from the high 80s to the low 90s, with extremes in the 100s. Average winter maximum temperatures range from the high 50s to the low 60s, while minimum temperatures are from the mid- to high 30s.

Criteria Pollutants and Local Air Quality

Description of Pollutants

The federal and state governments have established ambient air quality standards for six criteria pollutants: ozone, carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), inhalable particulate matter 10 microns or less in diameter (PM10), and lead. Ozone is generally considered to be a "regional" pollutant because the precursors to ozone are emitted and affect air quality on a regional scale. SO_2 and lead are considered to be local pollutants that generally affect areas closest to their emission sources. PM10 and CO are considered to be both localized and regional pollutants; concentrations of these pollutants are affected by both near-field sources and regional background concentrations. In the area where the Specific Plan is located, ozone and PM10 are of particular concern, as is discussed below.

Ozone

Ozone is a respiratory irritant that increases susceptibility to respiratory infections. It is also an oxidant that can cause substantial damage to vegetation and other materials.

Ozone is not emitted directly into the air, but is formed by photochemical reactions in the atmosphere. Ozone precursors, called reactive organic gases (ROG), and oxides of nitrogen (NO_x) react in the atmosphere in the presence of sunlight to form ozone. Because photochemical reaction rates depend on the intensity of ultraviolet light and air temperature, ozone is primarily a summer air pollution problem.

As stated above, ozone is considered a regional pollutant. Because photochemical reactions take time to occur, high ozone levels often occur downwind of major emission sources.

State and federal standards for ozone have been set for an 8-hour averaging time. The state 8-hour standard is 0.07 parts per million (ppm), not to be exceeded, while the federal 8-hour standard is 0.08 ppm, not to be exceeded more than three times in any 3-year period. The state has established a 1-hour ozone standard of 0.09 ppm, not to be exceeded, while the federal 1-hour ozone standard of 0.12 ppm has recently been replaced by the 8-hour standard. State and federal standards are summarized in Table 3.3-1.

Table 3.3-1. Ambient Air Quality Standards Applicable in California

Pollutant	Symbol	Average Time	Standard (parts per million)		Standard (micrograms per cubic meter)		Violation Criteria	
			California	National	California	National	California	National
Ozone[a]	O_3	1 hour	0.09	NA	180	NA	If exceeded	NA
		8 hours	0.070	0.08	137	157	If exceeded	If fourth highest 8-hour concentration in a year, averaged over 3 years, is exceeded at each monitor within an area
Carbon monoxide	CO	8 hours	9.0	9	10,000	10,000	If exceeded	If exceeded on more than 1 day per year
		1 hour	20	35	23,000	40,000	If exceeded	If exceeded on more than 1 day per year
(Lake Tahoe only)		8 hours	6	NA	7,000	NA	If equaled or exceeded	NA
Nitrogen dioxide	NO_2	Annual average	NA	0.053	NA	100	NA	If exceeded on more than 1 day per year
		1 hour	0.25	NA	470	NA	If exceeded	NA
Sulfur dioxide	SO_2	Annual average	NA	0.03	NA	80	NA	If exceeded
		24 hours	0.04	0.14	105	365	If exceeded	If exceeded on more than 1 day per year
		1 hour	0.25	NA	655	NA	If exceeded	NA
Hydrogen sulfide	H_2S	1 hour	0.03	NA	42	NA	If equaled or exceeded	NA
Vinyl chloride	C_2H_3Cl	24 hours	0.01	NA	26	NA	If equaled or exceeded	NA
Inhalable particulate matter	PM10	Annual arithmetic mean	NA	NA	20	50	NA	If exceeded at each monitor within area
		24 hours	NA	NA	50	150	If exceeded	If exceeded on more than 1 day per year
	PM2.5	Annual arithmetic mean	NA	NA	12	15	NA	If 3-year average from single or multiple community-oriented monitors is exceeded
		24 hours	NA	NA	NA	65	NA	If 3-year average of 98th percentile at each population-oriented monitor within an area is exceeded
Sulfate particles	SO_4	24 hours	NA	NA	25	NA	If equaled or exceeded	NA
Lead particles	Pb	Calendar quarter	NA	NA	NA	1.5	NA	If exceeded on more than 1 day per year
		30-day average	NA	NA	1.5	NA	If equaled or exceeded	NA

Notes:

All standards are based on measurements at 25ºC and 1 atmosphere pressure.
National standards shown are the primary (health effects) standards.
NA = not applicable.

[a] The EPA recently replaced the 1-hour ozone standard with an 8-hour standard of 0.08 part per million. The EPA issued a final rule that revoked the 1-hour standard on June 15, 2005. However, the California 1-hour ozone standard will remain in effect.

Source: California Air Resources Board 2006a.

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Inhalable Particulate Matter

Particulates can damage human health and retard plant growth. Health concerns associated with suspended particulate matter focus on those particles small enough to reach the lungs when inhaled. Particulates also reduce visibility and corrode materials.

Particulate emissions are generated by a wide variety of sources, including agricultural activities, industrial emissions, dust suspended by vehicle traffic and construction equipment, and secondary aerosols formed by reactions in the atmosphere.

The federal and state ambient air quality standards for particulate matter apply to two classes of particulates: particulate matter 2.5 microns or less in diameter (PM2.5) and PM10. The state PM10 standards are 50 micrograms per cubic meter ($\mu g/m^3$) as a 24-hour average and 20 $\mu g/m^3$ as an annual arithmetic mean. The federal PM10 standards are 150 $\mu g/m^3$ as a 24-hour average and 50 $\mu g/m^3$ as an annual arithmetic mean. The federal PM2.5 standards are 15 $\mu g/m^3$ for the annual average and 65 $\mu g/m^3$ for the 24-hour average. The state PM2.5 standard is 12 µ/m3 as an annual geometric mean. State and federal standards are summarized in Table 3.3-1.

Carbon Monoxide

CO is a public health concern because it combines readily with hemoglobin and reduces the amount of oxygen transported in the bloodstream. CO can cause health problems such as fatigue, headache, confusion, dizziness, and even death.

Motor vehicles are the dominant source of CO emissions in most areas. High CO levels develop primarily during winter when periods of light winds combine with the formation of ground-level temperature inversions (typically from the evening through early morning). These conditions result in reduced dispersion of vehicle emissions. Motor vehicles also exhibit increased CO emission rates at low air temperatures.

State and federal CO standards have been set for 1- and 8-hour averaging periods. The state 1-hour standard is 20 ppm by volume, whereas the federal 1-hour standard is 35 ppm. Both the state and federal standards for the 8-hour averaging period are 9.0 ppm. State and federal standards are summarized in Table 3.3-1.

Toxic Air Contaminants

Although ambient air quality standards exist for criteria pollutants, no ambient standards exist for toxic air contaminants (TACs). Many pollutants are identified as TACs because of their potential to increase the risk of developing cancer or because of their acute or chronic health risks. For TACs that are known or suspected carcinogens, the California Air Resources Board (ARB) has consistently found that there are no levels or thresholds below which exposure is

risk-free. Individual TACs vary greatly in the risk they present. At a given level of exposure, one TAC may pose a hazard that is many times greater than another. For certain TACs, a unit risk factor can be developed to evaluate cancer risk. For acute and chronic health risks, a similar factor called a hazard index is used to evaluate risk. In the early 1980s, the ARB established a statewide comprehensive air toxics program to reduce exposure to air toxics. The Toxic Air Contaminant Identification and Control Act (AB 1807) created California's program to reduce exposure to air toxics. The Air Toxics "Hot Spots" Information and Assessment Act (AB 2588) supplements AB 1807 by requiring a statewide air toxics inventory, notification of people exposed to a significant health risk, and facility plans to reduce these risks. In October 2000, the ARB identified diesel exhaust particulate matter as a TAC.

Existing Air Quality Conditions

Air Quality Monitoring Data

The existing air quality conditions in the Specific Plan Area can be characterized in terms of the ambient air quality standards that the federal and state governments have established for various pollutants (Table 3.3-1) and by monitoring data collected in the region. PM10, PM2.5, CO, and ozone concentrations are measured at several monitoring stations in the East Bay. Monitoring data concentrations are typically expressed in terms of ppm or $\mu g/m^3$.

The nearest air quality monitoring station in the vicinity of the area is the Rincon Avenue monitoring station located in Livermore. Air quality monitoring data from the Rincon Avenue monitoring station is summarized in Table 3.3-2. This data represents air quality monitoring data for the last 3 years (2003–2005) in which complete data is available. As indicated in Table 3.3-2, the Livermore monitoring station has experienced one violation of the federal 1-hour ozone standard, 21 violations of the state 1-hour ozone standard, and four violations of the federal 8-hour ozone standard during the last 3 years in which complete data is available (2003–2005); there were no violations of the federal and state CO standards, federal and state PM10 standards, or federal PM2.5 standards observed at the Livermore monitoring station during this time period.

Alameda County Federal and State Attainment Status Attainment Status

Areas such as SFBAAB are classified as either attainment or nonattainment with respect to state and federal ambient air quality standards. These classifications are determined by comparing actual monitored air pollutant concentrations to state and federal standards. As seen in Table 3.3-3, the Project Area has experienced violations of the state and federal 1-hour ozone standards and state PM10 standards during the last 3 years.

The U.S. Environmental Protection Agency (EPA) has designated Alameda County as a marginal nonattainment area for the 8-hour ozone standard. For the CO standard, the EPA has classified urbanized areas within Alameda County (described in the Technical Support Document from 3/29/85, 50 CFR 12540) as

Table 3.3-2. Ambient Air Quality Monitoring Data Measured at the Livermore Rincon Avenue Monitoring Station

Pollutant Standards	2003	2004	2005
Ozone			
Maximum 1-hour concentration (ppm)	0.128	0.113	0.120
Maximum 8-hour concentration (ppm)	0.094	0.080	0.090
Number of days standard exceeded[a]			
NAAQS 1-hour (>0.12 ppm)	1	0	0
CAAQS 1-hour (>0.09 ppm)	10	5	6
NAAQS 8-hour (>0.08 ppm)	3	0	1
Carbon Monoxide (CO)			
Maximum 8-hour concentration (ppm)	1.94	1.81	1.79
Maximum 1-hour concentration (ppm)	3.7	3.5	3.4
Number of days standard exceeded[a]			
NAAQS 8-hour (≥9.0 ppm)	0	0	0
CAAQS 8-hour (≥9.0 ppm)	0	0	0
NAAQS 1-hour (≥35 ppm)	0	0	0
CAAQS 1-hour (≥20 ppm)	0	0	0
Particulate Matter: PM10[b]			
National[c] maximum 24-hour concentration (μg/m^3)	31.5	46.7	48.3
National[c] second-highest 24-hour concentration (μg/m^3)	31.2	42.6	37.1
State[d] maximum 24-hour concentration (μg/m^3)	32.7	48.8	49.4
State[d] second-highest 24-hour concentration (μg/m^3)	31.5	42.4	38.5
National annual average concentration (μg/m^3)	18.6	19.7	18.5
State annual average concentration (μg/m^3)[e]	18.9	20.0	18.8
Number of days standard exceeded[a]			
NAAQS 24-hour (>150 μg/m^3)[f]	0.0	0.0	0.0
CAAQS 24-hour (>50 μg/m^3)[f]	0.0	0.0	0.0
Particulate Matter: PM2.5			
National[c] maximum 24-hour concentration (μg/m^3)	42.0	40.8	32.1
National[c] second-highest 24-hour concentration (μg/m^3)	27.1	38.1	29.2
State[d] maximum 24-hour concentration (μg/m^3)	42.0	40.8	32.1
State[d] second-highest 24-hour concentration (μg/m^3)	27.1	38.1	29.2
National annual average concentration (μg/m^3)	9.0	10.2	9.0
State annual average concentration (μg/m^3)[e]	9.0	10.2	9.0
Number of days standard exceeded[a]			
NAAQS 24-hour (>65 μg/m^3)	0	0	0

Notes:

CAAQS = California ambient air quality standards.
NAAQS = national ambient air quality standards.
– = insufficient data available to determine the value.

[a] An exceedance is not necessarily a violation.

[b] Measurements usually are collected every 6 days.

[c] National statistics are based on standard conditions data. In addition, national statistics are based on samplers using federal reference or equivalent methods.

[d] State statistics are based on local conditions data, except in the South Coast Air Basin, for which statistics are based on standard conditions data. In addition, state statistics are based on California-approved samplers.

[e] State criteria for ensuring that data are sufficiently complete for calculating valid annual averages are more stringent than the national criteria.

[f] Mathematical estimate of how many days concentrations would have been measured as higher than the level of the standard had each day been monitored.

Sources: California Air Resources Board 2006b; U.S. Environmental Protection Agency 2006.

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being moderate (≤ 12.7 ppm) maintenance areas for CO; the rest of the county is classified as an unclassified/attainment area. For the PM10 and PM2.5 standards, the EPA has designated the county as an unclassified/attainment area.

The ARB has classified Alameda County as a serious nonattainment area for the 1-hour ozone standard. For the CO standard, the ARB has classified the county as an attainment area. For the PM10 and PM2.5 standards, the ARB has classified the county as a nonattainment area. Alameda County's attainment status for each of these pollutants relative to the NAAQS and CAAQS is summarized in Table 3.3-3.

Table 3.3-3. Federal and State Attainment Status for Alameda County

Pollutant	Federal	State
1-hour O_3	NA[1]	Serious nonattainment
8-hour O_3	Marginal nonattainment	NA[2]
CO	Moderate (≤ 12.7 ppm) maintenance area for urbanized areas within the County (Technical Support Document from 3/29/85, 50 CFR 12540); unclassified/attainment area for rest of the County	Attainment
PM10	Unclassified/attainment	Nonattainment
PM2.5	Unclassified/attainment	Nonattainment

Notes:
NA = not applicable
[1] The EPA revoked the 1-hour standard on June 15, 2005.
[2] The ARB approved the 8-hour ozone standard on April 28, 2005, but has not yet designated areas for this standard.

Sensitive Land Uses

The BAAQMD generally defines a sensitive receptor as a facility or land use that houses or attracts members of the population—such as children, the elderly, and people with illnesses—that are particularly sensitive to the effects of air pollutants. Examples of sensitive receptors include schools, hospitals, convalescent facilities, and residential areas. Sensitive receptors located in the vicinity of the Project Area include the residences on the Children's Hospital property within the Specific Plan Area, residential land uses located across I-580 to the north, and one rural residence situated to the south. The small farm complex on the Children's Hospital site with six housing units and associated agricultural buildings is assumed to remain throughout most construction activities for the purposes of this analysis.

Sensitive receptors also are found along roadways where the Project may increase traffic. In specific, there are residential areas located along Jack London Boulevard east of Isabel Avenue in Livermore as well as along the south side of I-580 west of El Charro Road in Pleasanton.

Regulatory Setting

As identified above, both the State of California and the federal government have established ambient air quality standards for several different pollutants. For some pollutants, separate standards have been set for different periods. Most standards have been set to protect public health. For some pollutants, standards have been based on other values (such as protection of crops, protection of materials, or avoidance of nuisance conditions). The pollutants of greatest concern in the BAAQMD are PM10 and ozone. Table 3.3-1 shows the state and federal standards for a variety of pollutants.

Air pollution control programs were established in California before federal requirements were enacted. However, federal Clean Air Act (CAA) legislation in the 1970s resulted in a gradual merging of state and federal air quality programs, particularly those relating to industrial sources. Air quality management programs developed by California since the late 1980s generally have responded to requirements established by the federal CAA.

The enactment of the California Clean Air Act (CCAA) in 1988 and the federal CAA amendments of 1990 have produced additional changes in the structure and administration of air quality management programs. The CCAA requires preparation of an air quality attainment plan for any area that violates state standards for CO, SO_2, NO_2, or ozone. Locally prepared attainment plans are not required for areas that violate the state standards for PM10, but the ARB currently is addressing PM10 attainment issues.

The air quality management agencies of direct importance in Alameda County include the EPA, the ARB, and the BAAQMD. The EPA has established federal standards for which the ARB and BAAQMD have primary implementation responsibility. The ARB and BAAQMD are responsible for ensuring that state standards are met. The BAAQMD is responsible for implementing strategies for air quality improvement and recommending mitigation measures for new growth and development. At the local level, air quality is managed through land use and development planning practices, which are implemented in the county through the general planning process. The BAAQMD is responsible for establishing and enforcing local air quality rules and regulations that address the requirements of federal and state air quality laws.

Federal Regulations

Federal Clean Air Act

The federal CAA, enacted in 1963 and amended several times thereafter (including the 1990 amendments), establishes the framework for modern air pollution control. The CAA directs the EPA to establish ambient air standards for six pollutants: ozone, CO, lead, NO_2, particulate matter, and SO_2. The standards are divided into primary and secondary standards. Primary standards are designed to protect human health, including the health of "sensitive" populations, such as asthmatics, children, and the elderly, within an adequate

margin of safety. Secondary standards are designed to protect public welfare, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings.

The primary legislation that governs federal air quality regulations is the CAA amendments of 1990. The amendments delegate primary responsibility for clean air to the EPA. The EPA develops rules and regulations to preserve and improve air quality, as well as delegating specific responsibilities to state and local agencies.

Areas that do not meet the federal ambient air quality standards shown in Table 3.3-1 are called nonattainment areas. For these nonattainment areas, the CAA requires states to develop and adopt State Implementation Plans (SIPs), which are air quality plans showing how air quality standards will be attained. The SIP, which is reviewed and approved by the EPA, must demonstrate how the federal standards will be achieved. Failing to submit a plan or secure approval could lead to the denial of federal funding and permits for such improvements as highway construction and sewage treatment plants. In cases where the SIP is submitted by the state but fails to demonstrate achievement of the standards, the EPA is directed to prepare a Federal Implementation Plan. In California, the EPA has delegated authority to prepare SIPs to the ARB, which, in turn, has delegated that authority to individual air districts.

State Regulations

California Clean Air Act

Responsibility for achieving California's standards, which are more stringent than federal standards, is placed on the ARB and local air pollution control districts and is to be achieved through district-level air quality management plans that will be incorporated into the SIP.

The ARB traditionally has established state air quality standards, maintaining oversight authority in air quality planning, developing programs for reducing emissions from motor vehicles, developing air emission inventories, collecting air quality and meteorological data, and approving SIPs.

Responsibilities of air districts include overseeing stationary source emissions, approving permits, maintaining emissions inventories, maintaining air quality stations, overseeing agricultural burning permits, and reviewing air quality–related sections of environmental documents required by CEQA.

The CCAA of 1988 substantially added to the authority and responsibilities of air districts. The CCAA designates air districts as lead air quality planning agencies, requires air districts to prepare air quality plans, and grants air districts authority to implement transportation control measures. The CCAA focuses on attainment of the state ambient air quality standards, which, for certain pollutants and averaging periods, are more stringent than the comparable federal standards.

The CCAA requires designation of attainment and nonattainment areas with respect to state ambient air quality standards. The CCAA also requires that local and regional air districts expeditiously adopt and prepare an air quality attainment plan if the district violates state air quality standards for CO, SO_2, NO_2, or ozone. These clean air plans are specifically designed to attain these standards and must be designed to achieve an annual 5% reduction in district wide emissions of each nonattainment pollutant or its precursors. Where an air district is unable to achieve a 5% annual reduction in district wide emissions of each nonattainment pollutant or its precursors, the adoption of "all feasible measures" on an expeditious schedule is acceptable as an alternative strategy (Health and Safety Code 40914[b][2]). No locally prepared attainment plans are required for areas that violate the state PM10 standards.

The CCAA requires that the state air quality standards be met as expeditiously as practicable but, unlike the federal CAA, does not set precise attainment deadlines. Instead, the act established increasingly stringent requirements for areas that will require more time to achieve the standards.

The CCAA emphasizes the control of "indirect and area-wide sources" of air pollutant emissions. The CCAA gives local air pollution control districts explicit authority to regulate indirect sources of air pollution and to establish traffic control measures (TCMs). The CCAA does not define *indirect and area-wide sources*. However, Section 110 of the federal CAA defines an indirect source as:

> a facility, building, structure, installation, real property, road, or highway, which attracts, or may attract, mobile sources of pollution. Such term includes parking lots, parking garages, and other facilities subject to any measure for management of parking supply.

TCMs are defined in the CCAA as "any strategy to reduce trips, vehicle use, vehicle miles traveled, vehicle idling, or traffic congestion for the purpose of reducing vehicle emissions."

The ARB's *Air Quality and Land Use Handbook—A Community Health Perspective* (2005) provides ARB recommendations for the siting of new sensitive land uses (including residences) near freeways, distribution centers, ports, refineries, chrome plating facilities, dry cleaners, and gasoline stations. The handbook recommends that new development be placed at distances from such facilities.

Local Regulations

At the local level, the BAAQMD has jurisdiction over air quality issues within SFBAAB.

Air Quality Management Programs

The following discussion describes applicable air quality plans in the Project Area. The most recent versions of the plans discussed are the 2001 revised San

Francisco Bay Area Ozone Attainment Plan for the 1-Hour National Ozone Standard, Bay Area 2000 Clean Air Plan (CAP) and Triennial Assessment, and Bay Area 2005 Ozone Strategy (BAOS).

Ozone Attainment Plan

The Ozone Attainment Plan (OAP) is the Bay Area's portion of California's SIP to achieve the national ozone standard. In 1999 the BAAQMD, Association of Bay Area Governments (ABAG), and Metropolitan Transportation Commission (MTC) adopted the 1999 OAP, which was submitted to the ARB in June 1999. The 1999 OAP was approved by the ARB in July 1999 and then was submitted to the EPA for approval. The EPA proposed to partially approve and partially disapprove (the reasonably available control measures [RACM] demonstration, the attainment demonstration, and the motor vehicle emissions budgets [MVEBs]) portions of the 1999 OAP on March 30, 2001. This disapproval action by the EPA started a sanctions clock where the Bay Area became subject to the imposition of a 2-to-1 offset sanction. The offset sanction requires new or modified sources subject to a CAA New Source Review Program for ozone to obtain reductions in existing emissions in a 2:1 ratio to offset their new emissions.

In response, the BAAQMD, ABAG, and MTC began preparation of the 2001 OAP in response to correct the deficiencies in the 1999 OAP. On October 24, 2001, the BAAQMD, ABAG, and MTC adopted the 2001 OAP. The 2001 OAP was approved by the ARB on November 1, 2001, and submitted to the EPA for approval as a revision to the California SIP on November 30, 2001. The 2001 OAP included two commitments for further planning, which were a commitment to conduct a midcourse review of progress toward attaining the national 1-hour ozone standard by December 2003 and a commitment to provide a revised ozone attainment strategy to the EPA by April 2004. On April 22, 2004, the EPA approved the following elements of the 2001 OAP: emissions inventory, RACMs, commitments to adopt and implement specific control measures, MVEBs, and commitments for further study measures. The EPA's approval of RACMs and the MVEBs in the 2001 OAP terminates the sanctions clock for those plan elements.

The EPA made a final finding in April 2004 that the BAAQMD had attained the national 1-hour ozone standard. As a result, certain planning commitments outlined in the 2001 OAP no longer were required. While the EPA has prepared a finding of attainment for the region, the Bay Area has not been formally reclassified as an attainment area for the 1-hour standard. In order to be reclassified as an attainment area, the region must submit a redesignation request to the EPA. However, on June 15, 2005, the EPA withdrew the 1-hour ozone standard and replaced it with the 8-hour ozone standard. Currently, the BAAQMD is classified as a marginal nonattainment area with respect to the federal 8-hour ozone standard. As a result, the BAAQMD, in collaboration with the ARB, must prepare a SIP that describes the measures that will be used to bring the SFBAAB into attainment with the 8-hour ozone standard.

Clean Air Plan

The Bay Area CAP is a plan to reduce ground-level ozone levels within the San Francisco Bay Area and attain the state 1-hour ozone standard. It was developed by the BAAQMD, in cooperation with ABAG and MTC, in response to the CCAA of 1988, as amended. The CCAA requires all air districts exceeding the state ozone standard to reduce pollutant emissions by 5% per year, calculated from 1987, or achieve emission reductions through all feasible measures. The CCAA further requires that the CAP be updated every three years. As the Bay Area attained the state CO standard in 1993, the CCAA planning requirements for CO nonattainment areas no longer apply to the Bay Area. The first CAP, prepared in 1991, includes a comprehensive strategy to reduce air pollutant emissions by focusing on control measures to be implemented during the periods from 1991 to 1994 and 1995 through 2000 and beyond.

The update to the 1991 CAP, the 1994 CAP continues the comprehensive strategy established by the 1991 CAP and continues its goals of reducing health impacts from ozone levels above the state ambient standard and to compliance with the CCAA. The 1994 CAP includes eight new proposed control measures for stationary and mobile sources, in addition to changes in the organization and scheduling some of the control measures from the 1991 CAP. The control measures proposed in the 1994 CAP constitute all feasible ozone reducing measures in the Bay Area. In addition, the 1994 CAP projects pollutant trends and possible control activities beyond 1997.

The BAAQMD adopted the most recent update of the CAP on December 20, 2000. It is the third triennial update of the district's original 1991 CAP. The 2000 CAP includes a review of control strategies to ensure that "all feasible measures" to reduce ozone are incorporated into the CAP. In addition, the 2000 CAP updates the district's emission inventory, provides an estimate of emission reductions resulting from the CAP, and assesses air quality trends within the region. The triennial update to the 2000 CAP is found in the Bay Area 2005 Ozone Strategy, discussed below.

Bay Area 2005 Ozone Strategy

The BAAQMD has finalized BAOS in cooperation with ABAG and MTC. The 2005 Ozone Strategy is a comprehensive document that describes the Bay Area's strategy for compliance with state 1-hour ozone standard planning requirements.

Ozone conditions in the Bay Area have improved significantly; however, there is still need for continued improvement to meet the state 1-hour ozone standard. The Ozone Strategy describes how the Bay Area will fulfill CCAA planning requirements for the state 1-hour ozone standard and transport mitigation requirements through a proposed control strategy. The control strategy includes stationary source, mobile source, and transportation control measures to be implemented through district regulations, incentive programs and transportation programs, respectively.

Many of the strategies designed to achieve the 1-hour standard will also be effective in meeting the 8-hour ozone standard. However, in preparing the 8-hour SIP, the BAAQMD must evaluate the strategies designed to achieve the 1-hour standard to decide if they are adequate to meet the 8-hour standard. The BAAQMD, in preparing the 8-hour SIP, may modify proposed regulations or identify new, additional rules that will be needed to achieve the 8-hour ozone standard.

City of Livermore General Plan

The following General Plan air-quality-related objectives and policies, from the Open Space and Conservation Element, apply to the proposed Project.

Objective OSC-6.1: Minimize air pollution emissions.

Policies:

P1. The City shall require project developers to develop and implement a construction-period air pollution control plan, consistent with dust and emission abatement actions outlined in the CEQA handbook of the Bay Area Air Quality Management District.

P2. The City shall prohibit the location of sensitive receptors (e.g., residential uses, schools, hospitals) in the vicinity of industries that generate toxic emissions; conversely, prohibit the location of industries that generate toxic emissions in the vicinity of sensitive receptors.

P3. The City shall work with local and regional municipalities and agencies to reduce automobile-related vehicle emissions.

P4. All industrial uses within Livermore shall meet regional, State and federal air pollution standards.

P5. The City shall attempt to increase the employment to population ratio to reduce commuting rates and associated vehicle-related pollution emissions. The City shall approve only those development proposals, which are designed and located to minimize energy consumption and adverse impacts on air, land and water resources. High-density, transit-oriented developments shall be strongly encouraged and promoted through the use of specific planning, density transfer, the planned development concept, and zoning designations.

P6. The City shall monitor air quality and shall consider implementing a population cap if air quality declines.

P7. The City shall support programs to encourage the development and maximum use of regional and local mass transit systems. To this end, the City shall actively support: (a) the funding and construction of a BART or light/commuter rail extension to Livermore; (b) the designation of special lanes on I-580 for the exclusive use of commuter buses during peak traffic periods; and (c) close coordination in the operations of local and regional transit systems in order to minimize the travel time between communities and major generating areas served by the regional system.

Impact Analysis

Thresholds of Significance

This impact discussion utilizes the thresholds identified below to determine the level of impacts associated with the proposed Project. Criteria for determining the significance of impacts related to air quality were developed based on the environmental checklist form in Appendix G of the State CEQA Guidelines (14 CCR 15000 et seq.). An impact related to air quality was considered significant if it would:

- conflict with or obstruct implementation of the applicable air quality management plan;
- violate any air quality standard or contribute substantially to an existing or projected air quality violation;
- result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors);
- expose sensitive receptors to substantial pollutant concentrations; or
- create objectionable odors affecting a substantial number of people.

The State CEQA Guidelines further state that the significance criteria established by the applicable air quality management or air pollution control district may be relied on to make the determinations above. Therefore, impacts on air quality were assessed based on information contained in the *BAAQMD CEQA Guidelines—Assessing the Air Quality Impacts of Projects and Plans* (Bay Area Air Quality Management District 1999).

Project Construction

BAAQMD Thresholds for Construction Emissions. The BAAQMD does not have specific thresholds for construction emissions. Instead, the BAAQMD CEQA Guidelines require the implementation of mitigation measures and dust control measures. According to the most recent published BAAQMD CEQA Guidelines, the district has identified a set of feasible PM10 control measures for construction activities. Some measures (Basic Control Measures) should be implemented at all construction sites, regardless of size. Additional measures (Enhanced Control Measures) should be implemented at larger construction sites (greater than 4 acres) where PM10 emissions generally will be higher. Optional Control Measures may be implemented if further emission reductions are deemed necessary by the lead agency (Bay Area Air Quality Management District 1999).

The determination of significance with respect to construction emissions should be based on a consideration of the control measures to be implemented. From

the district's perspective, quantification of construction emissions is not necessary. If all of the control measures (as appropriate, depending on the size of the Project Area) will be implemented, then air pollutant emissions from construction activities would be considered a less-than-significant impact. If all of the appropriate measures will not be implemented, then construction impacts would be considered to be significant.

Project Operation

BAAQMD Thresholds for Operational Emissions. For many types of land use development, such as residential subdivisions, office parks, shopping centers, and other "indirect sources," motor vehicles traveling to and from locations within the Project Area represent the primary source of air pollution. The significance thresholds listed below apply to these indirect source emissions.

Local Carbon Monoxide Concentrations. As required by BAAQMD, the local CO concentrations should be estimated for projects in which:

- vehicle emissions of CO would exceed 550 pounds/day;
- project traffic would impact intersections or roadway links operating at Level of Service (LOS) D, E, or F or would cause LOS to decline to D, E, or F; or
- project traffic would increase traffic volumes on nearby roadways by 10% or more.

Once estimated (having met one of the above triggers), CO concentrations exceeding the California ambient air quality standard of 9 ppm averaged over 8 hours and 20 ppm averaged over 1 hour would be considered a significant impact.

Total Emissions. BAAQMD requires that total emissions from project operations should be compared to the thresholds provided below for four "criteria" pollutants. Total operational emissions evaluated under the following thresholds should include all emissions from motor vehicle use associated with the proposed Project. Projects that emit criteria air pollutants in excess of the levels indicated below would be considered to have a significant air quality impact.

- ROG: 80 pounds/day, 36 kilograms/day, 15 tons/year.
- NO_x: 80 pounds/day, 36 kilograms/day, 15 tons/year.
- Fine particulate matter (PM10): 80 pounds/day, 36 kilograms/day, 15 tons/year
- CO: 550 pounds/day (see local CO emissions thresholds identified above)

Implementation of the El Charro Specific Plan also would result in a significant impact on air quality if it would:

- expose sensitive receptors to substantial pollutant concentrations; or
- create objectionable odors affecting a substantial number of people.

Cumulative Impacts Thresholds. Any proposed project that individually would have a significant air quality impact also would be considered to have a significant cumulative air quality impact. For any project that does not individually have a significant operational cumulative air quality impact, the determination of whether the impact is nonetheless a cumulatively considerable net increase and therefore a significant cumulative impact should be based on an evaluation of the consistency of the project with local general plans with the regional air quality plan (i.e., the BAAQMD's CAP).

Approach and Methodology

Project Construction

As discussed above, the BAAQMD has not established significance thresholds for construction emissions, nor is quantification of such emissions required. Construction of the proposed Project would result in the temporary generation of emissions of ROG, NO_x, CO, and PM10 that would result in short-term impacts on ambient air quality in the area. Emissions would originate from mobile and stationary construction equipment exhaust, employee vehicle exhaust, dust from clearing the land, exposed soil eroded by wind, and ROG from architectural coatings and asphalt paving. Construction-related emissions would vary substantially depending on the level of activity, the length of the construction period, specific construction operations, types of equipment, the number of personnel, wind and precipitation conditions, and the soil moisture content.

Project Operation

Emissions associated with the operation of the Project can be classified as either a mobile source emission or an area source emission. Area sources include natural emissions, groups of stationary sources (such as dry cleaners and gas stations), and other area-wide diffuse emission sources. Mobile sources typically are associated with transportation-related activities. The primary operational emissions associated with the Project are ozone precursors, CO, and PM10, emitted as vehicle exhaust.

At the Project Area, sources include emissions from natural gas combustion for heating requirements (i.e., water heater and furnace), landscaping activities, consumer products (i.e., automotive products, household cleaners, and personal care products), and periodic paint emissions from facility upkeep.

Area emissions associated with the Project were estimated using the URBEMIS2002 model for the following three scenarios:

- construction of 550,000 square feet of retail space (Prime Outlets Livermore Valley) operational by 2008;
- full project buildout of 1,449,000 square feet of retail space operational by 2008; and
- full project buildout of 1,449,000 square feet of retail space operational by 2030.

At the time of air quality modeling, it assumed that the Prime Outlets Livermore Valley would have 550,000 square feet of retail space. Subsequent to the air quality modeling conducted for the proposed Project, the Prime Outlets project has been identified as a retail center with a gross floor area of approximately 450,000 square feet. Mobile sources emissions were determined based on estimations of Project Area vehicle miles traveled (VMT), in conjunction with the EMFAC emission factor model, for the following scenarios:

- 2008 no project—baseline,
- 2008 plus Prime Outlets Livermore Valley project,
- 2008 full project buildout with the Jack London Boulevard Extension option,
- 2008 full project buildout with the Airway Boulevard Extension option,
- 2030 no project,
- 2030 full project buildout with the Jack London Boulevard Extension option, and
- 2030 full project buildout with the Airway Boulevard Extension option.

The assumptions, models, and methodology used to estimate mobile and area emissions for various project configurations are presented in detail in Appendix B. Table B-8 from the appendix is reproduced here as Table 3.3-4, which summarizes the regional emissions associated with the proposed Project.

Carbon Monoxide Hot Spot Emissions

An evaluation to determine whether CO hot spots would occur at roadway intersections in the vicinity of the proposed Project was conducted through CO dispersion modeling. The ambient air quality effects of operation-related CO emissions were evaluated using the CALINE4 dispersion model developed by Caltrans (Benson 1989). CALINE4 treats each segment of a roadway as a separate emission source producing a plume of pollutants that disperses downwind. Pollutant concentrations at any specific location are calculated using the total contribution from overlapping pollution plumes originating from the sequence of roadway segments.

The methodology and results of the CO hot spot analysis are listed in detail in Appendix B. Based on this analysis, it can be concluded that the El Charro

Project will have no significant deleterious impact on CO concentrations near roadway intersections within the project area.

Impacts and Mitigation Measures

Impact AQ-1: Generation of Significant Levels of Emissions from Project Construction—Less than Significant with Mitigation

As indicated above, the BAAQMD does not require quantification of construction emissions, as air pollutant emissions from construction activities are considered less than significant if all fugitive dust control measures listed in Table 3.3-5 are implemented (as appropriate, depending on the size of the Project Area). Consequently, this impact is considered less than significant with the implementation of Mitigation Measure AQ-1a.

Mitigation Measure AQ-1a: Implement Required Bay Area Air Quality Management District Control Measures for Construction Emissions of Fugitive Dust

To control the generation of construction-related fugitive dust emissions, the project applicants will require the construction contractor to implement all applicable and feasible control measures required by the BAAQMD, as summarized in Table 3.3-5.

Table 3.3-4: Daily Emissions of Criteria Pollutants and Their Precursors from Transportation Activities and Area Sources Associated with the Proposed Project.

Scenario	Transportation				Area Sources from Commercial				Total Emissions				Total Emissions			
	Daily Emissions (pounds)				Daily Emissions (pounds)				Daily Emissions (pounds)				Daily Emissions above Baseline (pounds)			
	CO	ROG	NO_x	PM10	CO	ROG	NO_x	PM10	CO	ROG	NO_x	PM10	CO	ROG	NO_x	PM10
2008 No Project—Baseline	59,889	3,388	17,658	653	0.0	0.0	0.0	0.0	59,889	3,388	17,658	653	-	-	-	-
2008 Phase I Project	60,214	3,407	17,754	656	5.3	8.2	5.3	0.0	60,219	3,415	17,759	656	331	27	101	4
2008 Full Project w/ Jack London Boulevard Extension	60,666	3,432	17,887	661	12.6	21.5	14.0	0.0	60,679	3,454	17,901	661	790	65	243	9
2008 Full Project w/ Airway Boulevard Extension	60,727	3,436	17,905	662	12.6	21.5	14.0	0.0	60,739	3,457	17,919	662	851	69	261	9
2030 No Project—Baseline	17,435	878	4,480	806	0.0	0.0	0.0	0.0	17,435	878	4,480	806	-	-	-	-
2030 Full Project w/ Jack London Boulevard Extension	17,675	890	4,541	817	12.6	21.5	14.0	0.0	17,688	912	4,555	817	253	34	76	11
2030 Full Project w/ Airway Boulevard Extension	17,646	889	4,534	816	12.6	21.5	14.0	0.0	17,658	910	4,548	816	223	32	68	10

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Table 3.3-5. BAAQMD Feasible Control Measures for Construction Emissions of PM10

Basic Control Measures. The following controls should be implemented at all construction sites.

- Water all active construction areas at least twice daily.
- Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least 2 feet of freeboard.
- Pave, apply water three times daily, or apply (nontoxic) soil stabilizers on all unpaved access roads, parking areas, and staging areas at construction sites.
- Sweep daily (with water sweepers) all paved access roads, parking areas, and staging areas at construction sites.
- Sweep streets daily (with water sweepers) if visible soil material is carried onto adjacent public streets.

Enhanced Control Measures. The following measures should be implemented at construction sites greater than 4 acres in area.

- Hydroseed or apply (nontoxic) soil stabilizers to inactive construction areas (i.e., previously graded areas inactive for 10 days or more).
- Enclose, cover, water twice daily, or apply (nontoxic) soil binders to exposed stockpiles (e.g., dirt and sand).
- Limit traffic speeds on unpaved roads to 15 mph.
- Install sandbags or other erosion control measures to prevent silt runoff to public roadways.
- Replant vegetation in disturbed areas as quickly as possible.

Optional Control Measures. The following control measures are strongly encouraged at construction sites that are large in area, located near sensitive receptors, or for any other reason may warrant additional emissions reductions, but the project applicant is not required to implement them.

- Install wheel washers for all exiting trucks or wash off the tires or tracks of all trucks and equipment leaving the site.
- Install windbreaks or plant trees or vegetative wind breaks at windward side(s) of construction areas.
- Suspend excavation and grading activity when winds (instantaneous gusts) exceed 25 mph.
- Limit the area subject to excavation, grading, and other construction activity at any one time.

Source: Bay Area Air Quality Management District 1999.

Impact AQ-2: Exposure of Sensitive Receptors to Substantial Concentrations of Carbon Monoxide—Less than Significant

CO modeling following Caltrans' CO Protocol (Garza et al. 1997) was conducted to evaluate whether the Project would cause or contribute to localized CO hot spots or violations of the state or federal ambient standard in the project vicinity. CO concentrations at sensitive receptors near congested roadways and

intersections were estimated using CALINE4 dispersion modeling. As discussed in Appendix B, no violations of the state or federal 1- or 8-hour CO standards are anticipated in the Project Area for baseline or future year conditions for all project scenarios. Therefore, the impact of proposed Project traffic conditions on ambient CO levels in the Project Area is considered less than significant, and no mitigation is required.

Impact AQ-3: Generation of Significant Levels of NO_x Emissions from Project Operations—Significant and Unavoidable

The estimated emissions of area and mobile source criteria pollutants from project operations were evaluated using the URBEMIS2002 and EMFAC computer models based on projected VMT for various project scenarios. A comparison of Project emission rates, in excess of the appropriate 2008 or 2030 baseline emission rates, are shown in Table 3.3-6 and compared to ROG, NO_x, and PM10 BAAQMD thresholds.

Table 3.3-6: Comparison of Daily Emissions of Criteria Pollutants above the Appropriate Baseline to Significance Thresholds[1]

	Daily Emissions Above Baseline			Emissions in Excess of BAAQMD Thresholds		
Scenario	ROG	NO_x	PM10	ROG	NO_x	PM10
2008 plus Prime Outlets Livermore Valley project	27	101	4	-	21	-
2008 Full Project with Jack London Boulevard Extension Option	65	243	9	-	163	-
2008 Full Project with Airway Boulevard Extension Option	69	261	9	-	181	-
2030 Full Project with Jack London Boulevard Extension Option [2]	34	76	11	-	-	-
2030 Full Project with Airway Boulevard Extension Option[2]	32	68	10	-	-	-

Notes:

[1] All units are pounds/day.

[2] Fleet efficiency and emissions are anticipated to improve by 2030.

The ROG and PM10 emission threshold of 80 pounds a day will not be exceeded for any project scenario or time period. The NO_x threshold will be exceeded in 2008 by 21, 163, and 181 pounds a day in the plus Prime Outlets Livermore Valley project, full project with Jack London Boulevard Extension option, and full project with Airway Boulevard Extension option scenarios, respectively. There are no expected criteria pollutant emission exceedances for the 2030 scenarios because of transportation improvements and reduced fleet emissions.

NO_x emission rates in excess of BAAQMD thresholds for the 2008 project scenarios are significant and unavoidable. Although no quantitative mitigation measures have been identified to reduce NO_x emissions below BAAQMD thresholds, the following mitigation measure is recommended to offset, in part, the increase in NO_x emissions associated with the proposed Project.

Mitigation Measure AQ-3: Reduce Vehicle Trips through Transportation Demand Management Program

Consistent with General Plan Circulation Element goals and policies, the City will require development applicants to obtain approval of a Transportation Demand Management program from the City for proposed development that reduces peak hour project traffic. Successful implementation of the program could reduce employee trips by as much as 10%–15%. The program will provide for trip-reducing features such as bus services to the Pleasanton/Dublin Bay Area Rapid Transit (BART) station and employee incentives or subsidies to encourage the use of public transportation. In addition, the plan will encourage the use of and provide employees with information for car pooling, bicycling, ride sharing, and alternative transportation and will encourage participation in guaranteed ride home programs. The program will include the requirement for preparation and delivery of annual monitoring results to the City to demonstrate ongoing compliance with the intent of the program.

The mitigation measure above could reduce trips by 5% or more but would not provide the reduction in NO_x emissions needed to reduce this impact to a less-than-significant level. Therefore, this impact would remain significant and unavoidable.

Impact AQ-4: Generation of Odors during Construction or Operation that Would Affect a Substantial Number of People—Less than Significant

The BAAQMD recommends setback distances from land uses that have the potential to generate substantial odor impacts, such as wastewater treatment plants, refineries, and chemical plants. The proposed Project is not listed by the BAAQMD as a land use that generates significant odors. Project construction and operation would generate emissions of diesel exhaust. These emissions may be detectable in certain situations. During construction, these emissions would be temporary and would be of sufficient distance to prevent odor complaints. During project operation, the number of diesel trucks would be relatively minor and would generate odors considered to be less than significant. Consequently, the Project's odor impacts would be less than significant.

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3.4 Biological Resources

This section provides information on biological resources located in the Project Area. A discussion of federal, state, and local laws, policies, and regulations that influence biological resources is also presented in this chapter. Impacts on biological resources that may result from the Project are identified, and mitigation measures to avoid, minimize, and compensate for potential significant impacts on biological resources are described.

Environmental Setting

Study Area Defined

For the purposes of this environmental document, the biological study area was defined based on the project boundaries (construction area) and includes an additional 100 feet beyond the project boundaries. The construction area includes the Specific Plan area, the locations of the road and other infrastructure improvements, and the area of golf course redesign. The 100-feet buffer was included to ensure that resources directly adjacent to project construction were also included in this assessment. Biological resources within the study area were identified and mapped onto aerial photographs. In addition, special-status species sightings identified outside the study area were mapped to address potential indirect effects on these sensitive resources.

Methodology

The methods used to identify biological resources in the study area consisted of prefield investigation, coordination with the resource agencies, and field surveys. Each of these elements is described below.

Prefield Investigation and Coordination with Resource Agencies

To prepare for the field surveys, biologists reviewed existing resource information related to the study area and coordinated with resource agencies to evaluate whether special-status species or their habitats could occur in the study area. Pertinent sources reviewed were:

- the California Native Plant Society's (CNPS's) 2001 *Inventory of Rare and Endangered Plants of California*;
- a California Natural Diversity Database (CNDDB)records search for the U.S. Geological Survey (USGS) 7.5-minute Altamont, Byron Hot Springs, Clifton Court Forebay, Diablo, Dublin, Livermore, La Costa Valley, Tassajara,

Midway, Mendenhall Springs, Cedar Mountain, and Niles quadrangles (California Natural Diversity Database 2006) (Appendix C);

- the USFWS list of special-status species (Appendix C);
- the City of Livermore General Plan (adopted in 2004)
- the *Altamont Water Treatment Plant Final EIR* (EIP Associates 2001);
- *California Red-Legged Frog and California Tiger Salamander Site Assessment—El Charro Specific Plan* (Zander Associates 2006);
- *California Red-Legged Frog Survey Report—Freisman Property, Livermore, Alameda County, CA* (WRA Environmental Consultants 2006);
- Rhodes & Jamieson Aggregate Mines, *Application for Rhodes & Jamieson Aggregate Mines, Surface Mining Permits SMP-38, SMP-39, and SMP-40—Draft Environmental Impact Report* (Douglas Herring & Associates 2004);
- *Zone 7 Stream Master Management Plan: Draft Environmental Impact Report* (ESA 2006);
- *Biological Survey, Arroyo Las Positas—Arroyo Mocho Widening and Realignment* (LSA Associates 1993);
- *California Red-Legged Frog Site Assessment, Arroyo Mocho Widening/Arroyo Las Positas Realignment Project Alameda, California,* (Macmillan 2000);
- *Oaks Business Park, Revised Draft Environmental Impact Report* (Pacific Municipal Consultants 2002);
- *Results of Reconnaissance-level Biological Survey, Crosswinds Church Property, Livermore* (LSA Associates 2002);
- *Results of Reconnaissance-level Biological Survey, Freisman Road Property, Livermore* (LSA Associates 1997);
- *I-580 Eastbound HOV Lane Project from East of Greenville Road to Hacienda Drive Environmental Assessment/Initial Study* (Alameda County Congestion Management Agency 2006a); and
- *I-580/Fallon Road Interchange Improvement Project Initial Study/Mitigated Negative Declaration* (City of Dublin 2005).

Field Surveys

Surveys conducted within the study area included floristic surveys, wildlife surveys, and wetland delineations. Surveys were conducted by Jones & Stokes,

Zander Associates, and WRA Environmental Consultants. Table 3.4-1 contains a list of survey dates and descriptions of each survey.

Table 3.4-1. Biological Resource Surveys

Survey Date	Survey Purpose
October 2005–March 2006	Zander Associates (2006) California tiger salamander trapping study
May 3, July 13, August 16, and September 13, 2006	Zander Associates (2006) California red-legged frog and California tiger salamander site assessment
September 2005–July 2006:	WRA Environmental Consultants (2006) California red-legged frog site assessment and surveys in approximately 0.25 miles of the Arroyo Las Positas and Cottonwood Creek on the Freisman Property
April 18 and 27, 2006 May 10 and 15, 2006 July 13, 2006	Jones & Stokes floristic surveys and wetland delineation
May 8 and 9, 2006 July 3, 2006	Jones & Stokes habitat assessment and biological surveys to document biological resources and to determine the occurrence or potential for special-status species to occur in the study area
October 12, 2006 November 10, 2006	Jones & Stokes habitat assessment for California red-legged frogs and California tiger salamanders in the study area
April 6, 2006 July 13, 2006 August 24, 2006 October 4, 2006	Zander Associates (2006) floristic surveys and wetland delineation

The purpose of the biological field surveys was to:

- characterize biological communities and their associated wildlife habitat uses;
- document common and special-status wildlife species;
- identify and characterize habitat for special-status avian wildlife species;
- document special-status plants;
- identify jurisdictional waters of the United States, including wetlands, that are subject to federal regulations; and
- provide biological resource information for use in the project design phase.

Lists of plant species observed in the study area during the 2006 field surveys are provided in Appendix C. Methods and terms used to document special-status species and waters of the United States (including wetlands) are described below.

Special-Status Species

Information used to develop lists of special-status species and other sensitive biological resources that could be present in the region included USFWS species lists, CNDDB data, CNPS data, and selected references (EIP Associates 2001; Zander Associates 2006; WRA Environmental Consultants 2006). Species were included in these lists if they were known to occur in the project region and if their habitats could be located in the project vicinity.

Special-status species are defined as:

- species listed or proposed for listing as threatened or endangered under the ESA (Title 50, Code of Federal Regulations [CFR], Section 17.12 for listed plants, 50 CFR 17.11 for listed animals, and various notices in the Federal Register [FR] for proposed species);
- species that are candidates for possible future listing as threatened or endangered under the ESA (67 FR 40657, June 13, 2002);
- species that are federal species of concern (i.e., former USFWS C1 or C2 candidates);
- species that are listed or proposed for listing by the State of California as threatened or endangered under the California Endangered Species Act (CESA) (14 California Code of Regulations [CCR] 670.5);
- plants listed as rare under the California Native Plant Protection Act of 1977 (California Fish and Game Code 1900 et seq.);
- plants considered by CNPS to be "rare, threatened, or endangered in California" (California Native Plant Society Lists 1B and 2);
- species that meet the definitions of rare or endangered under the State CEQA Guidelines 15380; and
- animals fully protected in California (California Fish and Game Code 3511 [birds], 4700 [mammals], and 5050 [reptiles and amphibians]).

Special-Status Plant Surveys

The Jones & Stokes botanist conducted botanical surveys in April, May, and July 2006 to locate special-status plants identified as having the potential to occur in the study area (Table 3.4-2). Botanical surveys were conducted according to DFG and CNPS Botanical Survey Guidelines (California Native Plant Society 2001). During the field surveys, all plants were identified to the level necessary to determine whether they qualified as special-status plants or were plant species

Table 3.4-2. Special-Status Plants Known to Occur or that May Occur in the Project Area

Species	Status[a] Federal/State/CNPS	California Distribution	Habitats	Blooming Period	Likelihood to Occur in Project Area[c]
Amsinckia grandiflora Large-flowered fiddleneck	E/E/1B	Foothills of Mount Diablo below 1,200 feet in Alameda, Contra Costa, and San Joaquin Counties; currently known from only three natural occurrences	Open grassy slopes in annual grasslands and cismontane woodlands	April–May	None—no known occurrences within 5 miles of the site; no suitable habitat within study area
Amsinckia lunaris Bent-flowered fiddleneck	–/–/1B	Alameda, Contra Costa, Lake, Marin, Santa Cruz, Shasta, and Siskiyou Counties	Cismontane woodland, valley and foothill grassland, between 160-1,650 feet	March–June	None—no known occurrences within 5 miles of the site; no suitable habitat within study area
Astragalus tener var. *tener* Alkali milk-vetch	–/–/1B	Historically found in western San Joaquin Valley, San Francisco Bay Area, and Monterey County; likely extirpated from all historical occurrences except those in Merced, Solano, and Yolo Counties	Playas and grasslands with adobe clay soils and alkaline vernal pools	March–June	None—no known occurrences within 5 miles of the site; no suitable habitat within study area
Atriplex cordulata Heartscale	–/–/1B	Western Central Valley and valleys of adjacent foothills below 660 feet	Alkali grasslands, alkali meadows, alkali scrublands	May–October	Moderate—closest occurrence within 3 miles east of the site; suitable habitat highly disturbed within study area
Atriplex depressa Brittlescale	–/–/1B	Western Central Valley and valleys in foothills on west side of Central Valley below 660 feet	Alkali grasslands, alkali meadows, alkali scrublands, chenopod scrublands, playas, valley and foothill grasslands; on alkaline or clay soils	May–October	Moderate—closest occurrence within 2 miles northeast of the site; suitable habitat highly disturbed within study area
Atriplex joaquiniana San Joaquin spearscale (saltbush)	–/–/1B	West margin of Central Valley from Glenn to Tulare Counties below 1,000 feet	Alkali grasslands, alkali scrublands, alkali meadows, saltbush scrublands	April–September	Moderate—closest occurrence within 0.5 mile west of the site; suitable habitat highly disturbed within study area

Table 3.4-2. Continued

Species	Status[a] Federal/State/CNPS	California Distribution	Habitats	Blooming Period	Likelihood to Occur in Project Area[c]
Balsamorhiza macrolepis var. *macrolepis* Big-scale balsamroot	–/–/1B	San Francisco Bay Area, Sierra Nevada foothills, Coast Ranges, eastern Cascade Range, and Sacramento Valley, below 4,600 feet	Rocky annual grasslands and fields, foothill woodland hillsides; locally on serpentine soils	March–June	None—no known occurrences within 5 miles of the site; no suitable habitat within study area
Blepharizonia plumosa ssp. *plumosa* Big tarplant	–/–/1B	Interior Coast Range foothills in Alameda, Contra Costa, San Joaquin, Stanislaus[b], and Solano[b] Counties at 50–1,500 feet	Dry hills and plains in annual grasslands	July–October	None—no known occurrences within 5 miles of the site; no suitable habitat within study area
Calochortus pulchellus Mt. Diablo fairy lantern	–/–/1B	Endemic to Contra Costa and Alameda Counties at 650–2,600 feet	Wooded, brushy slopes of chaparral, cismontane woodlands, riparian woodlands, and valley and foothill grasslands	April–June	None—no known occurrences within 5 miles of the site; no suitable habitat within study area
Centromadia parryi ssp. *congdonii* Congdon's tarplant	–/–/1B	Eastern San Francisco Bay Area, Salinas Valley, and Los Osos Valley below 700 feet	Lower slopes, flats, and swales in annual grasslands; locally on alkaline or saline soils	June–November	Moderate—closest occurrence just north across I-580 from the site; suitable habitat highly disturbed within study area
Cordylanthus mollis ssp. *hispidus* Hispid bird's-beak	–/–/1B	Central Valley (Kern, Merced, Placer, and Solano Counties) and Alameda County, at elevations below 500 feet	Meadows, grasslands, and playas; on alkaline soils	June–September	None—closest occurrence within 5 miles northeast of site; no suitable habitat within study area
Cordylanthus palmatus Palmate-bracted bird's-beak	E/E/1B	Known from seven populations in Livermore Valley and Central Valley from Colusa County to Fresno County	Alkali grasslands, alkali meadows, and chenopod scrublands	May–October	None—closest occurrence 3 miles northeast of the site; no suitable habitat within study area

Table 3.4-2. Continued

Species	Status[a] Federal/State/CNPS	California Distribution	Habitats	Blooming Period	Likelihood to Occur in Project Area[c]
Delphinium recurvatum Recurved larkspur	–/–/1B	San Joaquin Valley and interior valleys of the south Coast Ranges, Contra Costa County to Kern County	Subalkaline soils in annual grassland, saltbush scrub, cismontane woodland, vernal pools at 100–2,000 feet	March–May	None—no known occurrences within 5 miles of the site; no suitable habitat within study area
Eschscholzia rhombipetala Diamond-petaled poppy	–/–/1B	Interior foothills of south Coast Ranges from Contra Costa County to Stanislaus County, Carrizo Plain in San Luis Obispo County	Grassland, chenopod scrub, on clay soils, where grass cover is sparse enough to allow growth of low annuals	March–April	None—no known occurrences within 5 miles of the site; no suitable habitat within study area
Plagiobothrys glaber Hairless popcorn-flower	–/–/1A	Coastal valleys from Marin County to San Benito County	Alkaline meadows, coastal salt marsh	April–May	None—closest occurrence 3 miles east of the site; no suitable habitat within study area
Streptanthus albidus ssp. *peramoenus* Most beautiful jewel-flower	–/–/1B	Eastern San Francisco Bay Area; central outer south Coast Ranges; Alameda, Contra Costa, and Santa Clara Counties	Chaparral, annual grassland, on ridges and slopes on serpentinite outcrops, 450–3,200 feet	April–June	None—closest occurrence 3 miles northeast of the site; no suitable habitat within study area
Trifolium depauperatum var. *hydrophilum* Saline clover	–/–/1B	Alameda, Colusa, Monterey, Napa, San Benito, Santa Clara, San Luis Obispo, San Mateo, Solano, and Sonoma Counties	Marshes and swamps, valley and foothill grassland (mesic, alkaline), and vernal pools; 300–900 feet	April–June	Moderate—closest occurrence within 0.5 mile northwest of site; suitable habitat highly disturbed within study area
Tropidocarpum capparideum Caper-fruited tropidocarpum	–/–/1A	Historically known from the northwest San Joaquin Valley and adjacent Coast Range foothills	Grasslands in alkaline hills below 1,500 feet	March–April	None—closest occurrence 3 miles east of the site; no suitable habitat within study area

Species	Status[a] Federal/State/CNPS	California Distribution	Habitats	Blooming Period	Likelihood to Occur in Project Area[c]

Note: CNPS = California Native Plant Society.

[a] Status explanations:

Federal
E = listed as endangered under the ESA
– = no listing

State
E = listed as endangered under the CESA
– = no listing

California Native Plant Society
1A = List 1A species: presumed extinct in California
1B = List 1B species: rare, threatened, or endangered in California and elsewhere
2 = List 2 species: rare, threatened, or endangered in California but more common elsewhere

[b] Populations uncertain or extirpated in the county

[c] Definitions of levels of Occurrence likelihood:

High: Known occurrence of plant in region from CNDDB, or other documents in the vicinity of the project; or suitable habitat conditions and suitable microhabitat conditions are present

Moderate: Known occurrence of plant in region from CNDDB, or other documents in the vicinity of the project; or suitable habitat conditions are present, but suitable microhabitat conditions are not present

Low: Plant not known to occur in the region from the CNDDB, or other documents in the vicinity of the project; or habitat conditions are of poor quality

None: Plant not known to occur in the region from the CNDDB, or other documents in the vicinity of the project; or suitable habitat is not present in any condition

with unusual or significant range extensions. In general, survey intensity varied depending on species richness, habitat type and quality, and the probability of special-status plants occurring in a particular habitat type. The botanist walked meandering transects through all portions of the study area with natural vegetation. More focused surveys were conducted in areas with the greatest potential for special-status plants to grow (e.g., open annual grassland, riparian, and wetland communities). Windshield surveys were conducted in the portion of the study area that was entirely developed or landscaped. Surveys coincided with the identification periods of all of the 18 special-status plants identified in Table 3.4-2 as having suitable habitat within the study area.

Special-Status Wildlife Surveys

Zander Associates (2006) conducted a site assessment for California red-legged frog (CRLF) and California tiger salamander (CTS) in the specific plan area throughout the winter months of 2005 and 2006 and on May 3, July 13, August 16, and September 13, 2006. Zander Associates followed USFWS guidelines for both site assessments (U.S. Fish and Wildlife Service 2003 and 2005). Zander Associates assessed existing conditions and identified potential breeding and upland habitats capable of supporting California tiger salamanders and CRLFs.

In October 2005, a trapping study for CTS was initiated on approximately 50 acres in the northwestern portion of the Specific Plan Area to determine the presence or absence of CTS in the study area. Zander Associates conducted the trapping study under the direction of the USFWS in accordance with the USFWS *Interim Guidance on Site Assessment and Field Surveys for Determining Presence or Negative Finding of California Tiger Salamander* (2003). The trapping study was conducted on the approximately 50-acre El Charro Road property bound generally by Freisman Road to the north, the Arroyo Las Positas to the south, El Charro Road to the west, and undeveloped lands and a golf course to the east (Zander Associates 2006).

WRA Environmental Consultants conducted a CRLF site assessment in fall 2005, followed by USFWS protocol-level surveys in the study area on the Freisman property located at the easternmost end of Freisman Road. In accordance with the *Revised Guidance on Site Assessments and Field Surveys for California Red-Legged Frog* (U.S. Fish and Wildlife Service 2005), two day and four night surveys were conducted during the breeding season (January 1–June 30), and one day survey and one night survey were conducted during the nonbreeding season (July 1–September 30). Day surveys were conducted on September 22, February 2, and March 8, 2006. Night surveys were conducted on February 2, March 7, May 3, May 10, and July 18, 2006. Biologists conducted visual and acoustic surveys in the Arroyo Las Positas and Cottonwood Creek at all accessible locations (WRA Environmental Consultants 2006).

A Jones & Stokes wildlife biologist conducted habitat-based field assessments to determine the presence, distribution, and amount of habitat capable of supporting special-status wildlife species that could occur in the study area (Table 3.4-3).

Surveys were conducted on foot and through windshields. Field surveys were conducted on May 8 and 9, July 3, October 12, and November 10, 2006. General wildlife surveys were conducted on the first three survey days, and site assessments for CRLFs and CTSs were conducted during the October and November 2006 surveys. Biologists assessed golf course ponds (1-9) for their potential to support CRLF and CTS. The surveys included focused searches for nests of raptors and identification of areas suitable for raptor nesting during the spring and summer surveys. A burrowing owl habitat assessment also was conducted and was followed up by protocol burrowing owl surveys conducted during the specified survey window (two hours before dawn to one hour after dawn). Dens identified during protocol burrowing owl surveys also were evaluated for their potential to provide habitat for special-status denning mammals such as the American badger and aestivation habitat for CTSs and CRLFs. The biologist noted each habitat type present and evaluated it for the potential to support special-status species.

Identification of Potentially Jurisdictional Waters of the United States (Including Wetlands)

A wetlands ecologist conducted a formal delineation of wetlands. A verification has not yet been done for this site. A definition of waters of the United States is provided in the "Regulatory Setting" part of this section, below.

Existing Conditions

Biological Communities

The study area supports both common and sensitive biological communities. Sensitive biological communities include habitats with high species diversity, high productivity, unusual nature, limited distribution, declining status, or a combination of these attributes. The CNDDB (2006) contains a current list of rare (i.e., important) natural communities throughout the state. The USFWS considers certain habitats, such as wetlands and riparian communities, important to wildlife. The USACE and the EPA consider wetland habitats important for water quality and wildlife. The biological communities in the study area that meet the criteria for sensitive natural communities are wetlands (including seasonal wetlands and perennial wetlands) and riparian woodland.

Common biological communities are habitats that have low species diversity, are widespread, reestablish naturally following disturbance, or support primarily nonnative species. These communities are generally not protected by agencies unless the specific site is habitat for or supports special-status species (e.g., raptor foraging or nesting habitat, upland habitat within a wetland watershed). Biological communities in the study area are annual grassland, riparian woodland, and agricultural fields.

Table 3.4-3 Special-Status Wildlife Species with Potential to Occur in the Project Region

Scientific and Common Names	Status Federal/State	Geographic Distribution	Habitat Requirements	Potential Occurrence in Study Area
Invertebrates				
Branchinecta conservatio Conservancy fairy shrimp	E/–	Disjunct occurrences in Solano, Merced, Tehama, Ventura, Butte, and Glenn Counties	Large, deep vernal pools in annual grasslands	None—outside of species distribution
Branchinecta longiantenna Longhorn fairy shrimp	E/–	Eastern margin of central Coast Ranges from Contra Costa County to San Luis Obispo County; disjunct population in Madera County	Small, clear pools in sandstone rock outcrops of clear to moderately turbid clay- or grass-bottomed pools	None—suitable habitat (seasonal wetlands in rock outcrops) not present; no CNDDB records for this species within 10 miles
Branchinecta lynchi Vernal pool fairy shrimp	T/–	Central Valley, central and south Coast Ranges from Tehama County to Santa Barbara County; isolated populations also in Riverside County	Common in vernal pools; also found in sandstone rock outcrop pools	Low—potential habitat in seasonal wetlands near El Charro Road, and CNDDB records for this species are within 10 miles
Lepidurus packardi Vernal pool tadople shrimp	T/–	Shasta County south to Merced County	Vernal pools and ephemeral stock ponds	Low—potential habitat in seasonal wetlands near El Charro Road; no CNDDB records for this species are within 10 miles
Amphibians				
Rana aurora draytoni California red-legged frog	T/SSC	Found along the coast and coastal mountain ranges of California from Marin County to San Diego County and in the Sierra Nevada from Tehema County to Fresno County	Permanent and semipermanent aquatic habitats, such as creeks and cold-water ponds, with emergent and submergent vegetation; may estivate in rodent burrows or cracks during dry periods	High—species observed in the Arroyo Las Positas and at numerous locations north of I-580 (CNDDB 2006); suitable aquatic habitat in the Arroyo Las Positas and Cottonwood Creek; suitable upland habitat adjacent to creeks in annual grasslands and fallow fields

Scientific and Common Names	Status Federal/State	Geographic Distribution	Habitat Requirements	Potential Occurrence in Study Area
Ambystoma californiense (=A. tigrinum c.) California tiger salamander	C/SSC	Central Valley, including Sierra Nevada foothills, up to approximately 1,000 feet, and coastal region from Butte County south to northeastern San Luis Obispo County	Small ponds, lakes, or vernal pools in grasslands and oak woodlands for larvae; rodent burrows, rock crevices, or fallen logs for cover for adults and for summer dormancy	Low—one seasonal wetland south of the Arroyo Las Positas may provide suitable breeding habitat; a CNDDB record for this species is located in Cottonwood Creek northeast of the study area and north of I-580.
Scaphiopus hammondii Western spadefoot	–/SSC	Sierra Nevada foothills, Central Valley, Coast Ranges, coastal counties in southern California	Shallow streams with riffles; seasonal wetlands, such as vernal pools in annual grasslands and oak woodlands	None—no suitable habitat and no CNDDB records within 10 miles
Reptiles				
Masticophis lateralis euryxanthus Alameda whipsnake	T/T	Restricted to Alameda and Contra Costa Counties; fragmented into five disjunct populations throughout its range	Valleys, foothills, and low mountains associated with northern coastal scrub or chaparral habitat; requires rock outcrops for cover and foraging	None—no suitable habitat present
Emys marmorata Western pond turtle	–/SSC	Occurs from the Oregon border of Del Norte and Siskiyou Counties south along the coast to San Francisco Bay, inland through the Sacramento Valley, and on the western slope of the Sierra Nevada	Occupies ponds, marshes, rivers, streams, and irrigation canals with muddy or rocky bottoms and with watercress, cattails, water lilies, or other aquatic vegetation in woodlands, grasslands, and open forests	High—individual observed during 2006 survey in study area in the Arroyo Las Positas
Mammals				
Taxidea taxus American badger	–/SSC	In California, badgers occur throughout the state except in humid coastal forests of northwestern California in Del Norte and Humboldt Counties	Badgers occur in a wide variety of open, arid habitats but are most commonly associated with grasslands, savannas, mountain meadows, and open areas of desert scrub; the principal habitat requirements for the species appear to be sufficient food (burrowing rodents), friable soils, and relatively open, uncultivated ground	None—poor suitable habitat occurs in the study area

Table 3.4-3. Continued

Scientific and Common Names	Status Federal/State	Geographic Distribution	Habitat Requirements	Potential Occurrence in Study Area
Vulpes macrotis mutica San Joaquin kit fox	E/T	Principally occurs in the San Joaquin Valley and adjacent open foothills to the west; recent records from 17 counties extending from Kern County north to Contra Costa County	Saltbush scrub, grassland, oak, savanna, and freshwater scrub	None—outside of species' geographic range
Birds				
Haliaeetus leucocephalus Bald eagle	T/E	Nests in Siskiyou, Modoc, Trinity, Shasta, Lassen, Plumas, Butte, Tehama, Lake, and Mendocino Counties and in the Lake Tahoe Basin; reintroduced into central coast; winter range includes the rest of California, except the southeastern deserts, very high altitudes in the Sierra Nevada, and east of the Sierra Nevada south of Mono County	In western North America, nests and roosts in coniferous forests within 1 mile of a lake, reservoir, or stream, or the ocean	Low—potential winter migrant; no suitable nesting habitat is present
Accipiter cooperii Cooper's hawk	–/SSC	Throughout California except at high elevations in the Sierra Nevada; winters in the Central Valley, in the southeastern desert regions, and on the plains east of the Cascade Range; permanent residents occupy the rest of the state	Nests primarily in riparian forests dominated by deciduous species; also nests in densely canopied forests from digger pine-oak woodland to ponderosa pine forest; forages in open woodlands	Low—potential winter migrant; dense riparian and coniferous forest (preferred habitat) is not present in the study area
Buteo regalis Ferruginous hawk	–/SSC	Does not nest in California; winter visitor along the coast from Sonoma County to San Diego County, eastward to the Sierra Nevada foothills and southeastern deserts, the Inyo-White Mountains, the plains east of the Cascade Range, and Siskiyou County	Open terrain in plains and foothills where ground squirrels and other prey are available	Low—potential winter migrant; does not nest in California
Accipiter striatus Sharp-shinned hawk	–/SSC	Permanent resident in the Sierra Nevada, Cascade, Klamath, and north Coast Ranges at mid elevations and along the coast in Marin, San Francisco, San Mateo, Santa Cruz, and Monterey Counties; winters over the rest of the state except at very high elevations	Dense canopy ponderosa pine or mixed-conifer forest and riparian habitats	Low—potential winter migrant; dense canopy ponderosa pine, mixed-conifer or riparian forest is not present in the study area

Scientific and Common Names	Status Federal/State	Geographic Distribution	Habitat Requirements	Potential Occurrence in Study Area
Aquila chrysaetos Golden eagle	–/SSC, FP	Foothills and mountains throughout California; uncommon nonbreeding visitor to lowlands such as the Central Valley	Nests in cliffs and escarpments or tall trees; forages in annual grasslands, chaparral, or oak woodlands that provide abundant medium and large-sized mammals for prey	Low—golden eagle reported in study area; marginal foraging habitat is present within the study area; winter migrant only; CNDDB records located within 10 miles
Circus cyaneus Northern harrier	–/SSC	Throughout lowland California; has been recorded in fall at high elevations	Grasslands, meadows, marshes, and seasonal and agricultural wetlands providing tall cover	Low—could forage in agricultural and disturbed annual grassland in the study area; CNDDB records area located within 10 miles
Elanus leucurus White-tailed kite	–/FP	Lowland areas west of Sierra Nevada from the head of the Sacramento Valley south, including coastal valleys and foothills to western San Diego County at the Mexico border	Low foothills or valley areas with valley or live oaks, riparian areas, and marshes near open grasslands for foraging	High—white-tailed kite observed during survey in 2006; riparian habitat in and adjacent to the study area provides suitable nesting habitat; CNDDB record is within 10 miles
Falco peregrinus anatum American peregrine falcon	–/E	Permanent resident of the north and south Coast Ranges; may summer on the Cascade and Klamath Ranges south through the Sierra Nevada to Madera County; winters in the Central Valley south through the Transverse and Peninsular Ranges and the plains east of the Cascade Range	Nests and roosts on protected ledges of high cliffs, usually adjacent to lakes, rivers, or marshes that support large populations of other bird species	Low—potential winter migrant; no suitable nesting habitat is present
Falco mexicanus Prairie falcon	–/SSC	Found as permanent resident on the south Coast, Transverse, Peninsular, and northern Cascade Ranges, the southeastern deserts, Inyo-White Mountains, Modoc, Lassen, and Plumas Counties, and the foothills surrounding the Central Valley; winters in the Central Valley, along the coast from Santa Barbara County to San Diego County, and in Marin, Sonoma, Humboldt, Del Norte, and Inyo Counties	Cliffs or escarpments for nesting; adjacent dry, open terrain or uplands, marshes, and seasonal marshes for foraging	Low—potential winter migrant; no suitable nesting habitat is present

Table 3.4-3. Continued

Scientific and Common Names	Status Federal/State	Geographic Distribution	Habitat Requirements	Potential Occurrence in Study Area
Athene cunicularia hypugea Western burrowing owl	–/SSC	Lowlands throughout California, including the Central Valley, northeastern plateau, southeastern deserts, and coastal areas; rare along south coast	Level, open, dry, heavily grazed or low stature grassland or desert vegetation with available burrows	High—nesting burrowing owls observed in study area; CNDDB recorded within 0.25 mile of study area
Eremophila alpestris actia California horned lark	–/SSC	Found throughout much of the state, less common in mountainous areas of the north coast and in coniferous or chaparral habitats	Common to abundant resident in a variety of open habitats, usually where large trees and shrubs are absent; grasslands and deserts to dwarf shrub habitats above tree line	Moderate—potential foraging habitat is present, and CNDDB records are located within 10 miles
Lanius ludovicianus Loggerhead shrike	–/SSC	Resident and winter visitor in lowlands and foothills throughout California; rare on coastal slope north of Mendocino County, occurring only in winter	Prefers open habitats with scattered shrubs, trees, posts, fences, utility lines, or other perches	High—suitable nesting habitat is present
Agelaius tricolor Tricolored blackbird	–/SSC	Permanent resident in the Central Valley from Butte County to Kern County; breeds at scattered coastal locations from Marin County south to San Diego County and at scattered locations in Lake, Sonoma, and Solano Counties; rare nester in Siskiyou, Modoc, and Lassen Counties	Nests in dense colonies in emergent marsh vegetation, such as tules and cattails, or upland sites with blackberries, nettles, thistles, and grain fields; habitat must be large enough to support 50 pairs; probably requires water at or near the nesting colony	High—observed perched in golf course pond during fall 2006 field survey; limited foraging and nesting habitat is present in the study area; CNDDB nesting records within 0.25 mile

Scientific and Common Names	Status Federal/State	Geographic Distribution	Habitat Requirements	Potential Occurrence in Study Area

Status explanations:

Federal

E = listed as endangered under the ESA

T = listed as threatened under the ESA

PT = proposed for federal listing as threatened under the ESA

C = species for which USFWS has on file sufficient information on biological vulnerability and threat(s) to support issuance of a proposed rule to list, but issuance of the proposed rule is precluded

SC = species of concern; species for which existing information indicates it may warrant listing but for which substantial biological information to support a proposed rule is lacking

– = no listing

State

E = listed as endangered under CESA

T = listed as threatened under CESA

FP = fully protected under the California Fish and Game Code

SSC = species of special concern in California

– = no listing

Potential Occurrence in the Study Area

High: Known occurrences of the species within the study area, or CNDDB, or other documents, records the occurrence of the species within a 10-mile radius of the study area; suitable habitat is present within the study area

Moderate: CNDDB, or other documents, records the known occurrence of the species within a 10-mile radius of the study area; poor quality suitable habitat is present within the study area

Low: CNDDB, or other documents, does not record the occurrence of the species within a 10-mile radius of the study area; suitable habitat is present within the study area

Land cover types are shown in Figure 3.4-1. Water and wetlands are shown in Figure 3.4-2. The acreage of biological communities located in the study area is listed in Table 3.4-4. Common and scientific names of plant species observed in the study area, and mentioned in the text, are presented in Appendix C.

Table 3.4-4. Biological Communities in the Study Area (Acres)

Biological Community	Acres
Golf course ponds	9.0
Seasonal wetlands	4.4
Emergent marshes	0.3
Riverine wetlands	2.6
Riparian woodland	38.6
Irrigated pastures	26.5
Agricultural areas/disturbed annual grasslands (includes ruderal areas)	326.3
Landscaped areas (golf course and driving range)	205.6
Developed areas (roads and graded road shoulders)	35.5
Total:	648.8

Notes:

The study area includes the 250-acre El Charro Specific Plan Area, the 215-acre

Las Positas Golf Course, the alignment of the expanded El Charro Road, the interim and long-term alignments of the Jack London and Airway extensions, and areas around the airport that may be utilized for golf course redesign and/or are adjacent to project features.

Creeks

The Project Area is located in the Altamont subbasin of the Alameda Creek Watershed, the largest of all local watersheds draining directly into San Francisco Bay (East Bay Regional Park District 2002). The major creek within the study area is the Arroyo Las Positas. In addition to this major creek, Cottonwood Creek, an intermittent stream, crosses under I-580 and merges with Arroyo Las Positas on the northern half of the site. Open water portions of the Arroyo Las Positas and Cottonwood Creek qualify as other waters of the United States in the study area. Smaller drainages in the study area consist primarily of roadside ditches and manmade drainages and are discussed below under seasonal wetlands.

Creeks provide habitat for a variety of wildlife. Emergent marsh and riparian forest growing along the edges of creeks provides nesting habitat for several bird species and foraging and refuge habitat for amphibians, reptiles, and mammals occupying the open water and adjacent grassland habitats. Birds such as herons

(*Ardea herodia* and *Butorides striatus*) and belted kingfishers (*Ceryle alcyon*) forage in these communities, primarily along the water's edge. Many species of insectivorous birds, including white-throated swift (*Aeronautes saxatalis*), barn swallow (*Hirundo rustica*), cliff swallow (*Petrochelidon pyrrhonota*), black phoebe (*Sayornis nigricans*), and ash-throated flycatcher (*Myiarchus cinerascens*), catch their prey over open water. Western pond turtle (*Emys marmorata)*, bullfrog (*Rana catesbeiana*), Pacific tree frogs (*Hyla regilla)*, and an unidentified ranid frog (a possible CRLF) were observed in the Arroyo Las Positas during surveys in 2005 and 2006 (Zander Associates 2006 and WRA Environmental Consultants 2006).

Arroyo Las Positas

The Arroyo Las Positas is the major drainage feature through the Livermore Valley, draining an area of about 11 square miles. Within the study area, the Arroyo Las Positas runs generally south of, and parallel with, I-580, flowing in a westerly direction. There is a section of the Arroyo Las Positas that is not channelized between Airway Boulevard and El Charro Road in Las Positas Golf Course. The section of the Arroyo Las Positas and its floodplain between Airway Boulevard and Isabel Avenue is confined to an earthen channel that is approximately 125 feet wide. A small tributary to the Arroyo Las Positas is Cottonwood Creek, which joins the Arroyo Las Positas just south of I-580 west of the Airway Boulevard exit. Cottonwood Creek flows under I-580 through an approximately 200-foot-long twin (5-foot high by 10-foot wide) box culverts. Vegetation adjacent to the Arroyo Las Positas within the study area consists of riparian woodland, freshwater marsh vegetation, riverine wetland, annual grasslands, and agricultural communities.

Wetlands

There are four distinct wetland types in the Project Area: ponds, seasonal wetlands, riverine wetlands, and emergent marshes.

Ponds

Although not a natural feature, golf course ponds often function as perennial wetlands in eastern Alameda County. They are isolated, manmade pools featured as part of a golf course landscape. There are nine ponds scattered to the south of the Arroyo Las Positas in the golf course.

The golf course ponds are in a contained system that is fed by reclaimed water, which only flows into Arroyo Las Positas if winter storms overtop the creek channel and subsequently flood the ponds. The ponds support emergent vegetation that is managed mechanically to maintain an open water feature and a clear line-of-sight for golf course play. The ponds are approximately 5 to 6 feet deep, have 4:1 side slopes, and are kept full year round. (Ferrero pers. comm.).

The nine golf course ponds undergo specific maintenance activities that may reduce habitat suitability for special-status species including CRLF and western pond turtle. All ponds have been stocked with mosquitofish (*Gambusia affinis)*

Study Area

Land Cover

Ag/Disturbed Annual Grassland

Developed

Emergent Marsh

Irrigated Pasture

Landscaped

Human-Made Ponds

Riparian/Wetland

N

0 500 1,000 2,000 Feet

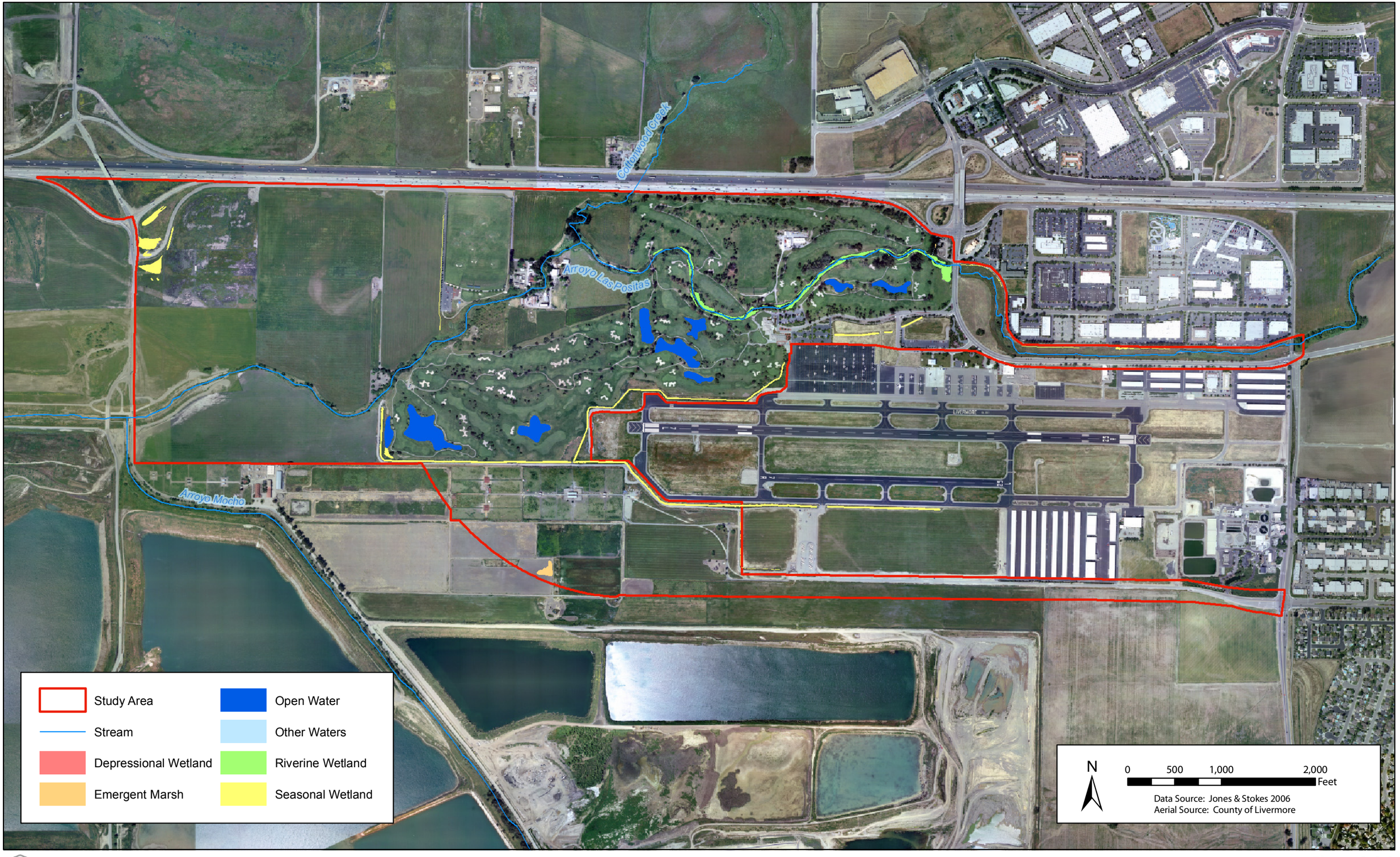
Data Source: Jones & Stokes 2006
Aerial Source: County of Livermore

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Jones & Stokes

Figure 3.4-1
Land Cover Types in the El Charro Specific Plan Study Area

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Jones & Stokes

Figure 3.4-2
Wetlands and Waters in the El Charro Specific Plan Study Area

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in the past for mosquito abatement purposes and continue to contain large numbers of mosquitofish. Most of the ponds also have bullfrogs and limited emergent vegetation. Additionally, commonly used aquatic sprays are used in the ponds to control algae growth and emergent tules and cattails, as needed. Growth regulators are used 2 to 3 feet from pond edges to control turf overgrowth in areas where the lawnmowers cannot reach (Ferrero pers. comm.).

Wildlife species observed during field surveys in the golf course ponds include tricolored blackbirds (*Agelaius tricolor*), red-winged blackbirds (*Agelaius phoeniceus*), American coots (*Fulica americana*), pied-billed grebes (*Podilymbus podiceps*), ruddy ducks (*Oxyura jamaicensis*), American wigeons (*Anas americana*), hooded mergansers (*Lophodytes cucullatus*), and northern shovelers (*Anas clypeata*).

Seasonal Wetlands

Seasonal wetland habitat in the study area occurs along the Arroyo Las Positas between the golf course and Isabel Avenue, along the southern boundaries of the golf course and airport, and in the northwest corner of the Specific Plan area near the intersection of El Charro and Freisman Roads. These features are associated with irrigated areas as well as roadside ditches and other artificial drainage features. Seasonal wetlands in the study area are dominated by Italian wild rye (*Lolium multiflorum*).

Seasonal wetlands support a variety of invertebrates and amphibians that, in turn, provide food for many other wildlife species, such as great blue heron, great egret (*Casmerodius albus*), mallard (*Anas platyrhynchos)*, American avocet (*Recurvirostra americana*), killdeer (*Charadrius vociferus*), and greater yellowlegs (*Tringa melanoleuca*).

Seasonal wetlands along the Arroyo Las Positas in the study area may be considered jurisdictional wetlands by the USACE and the SFBRWQCB. The isolated seasonal wetlands along the golf course and airport margins and near the intersection of El Charro and Freisman Roads are likely not jurisdictional wetlands for the USACE but are regulated by SFBRWQCB.

Riverine Wetlands

Riverine wetlands are associated with the channels of streams and rivers. Riverine wetlands are sustained primarily by direct inflow of surface water, either in channels or as overflow from channels. Some riverine wetlands receive appreciable amounts of water directly from precipitation, overland flow (runoff), or groundwater seepage, but unidirectional channel flow is always the primary source. Riverine wetlands lose surface water by flow returning to the channel after flooding and saturation flow to the channel during prolonged rain or snowmelt. Riverine wetlands lose subsurface water by evapotranspiration, surface or subsurface discharge to the channel, or movement to deeper groundwater. The riverine wetlands in the Project Area are situated adjacent to the Arroyo Las Positas as a narrow floodplain in the golf course. The Arroyo is undoubtedly a significant source of water for the riverine wetlands, but the wetlands also receive a considerable amount of water from irrigation runoff from

the golf course. The riverine wetlands are dominated mainly by nonnative species such as perennial peppergrass (*Lepidium latifolium*) and poison hemlock (*Conium maculatum*). Other species common to riverine wetlands are mugwort (*Artemisia douglasiana*) and soft rush.

Riverine wetlands along the Arroyo Las Positas in the study area may be considered jurisdictional wetlands by the USACE and the SFBRWQCB.

Riverine wetlands provide similar habitat function for wildlife as seasonal wetlands, described above.

Emergent Marshes

Emergent marsh habitat in the study area occurs in isolated patches along the creeks, around the ponds in the golf course, and in an isolated patch where water is constantly discharged from a water tank (on SMP-38 on the Rhodes & Jamieson property). Common plant species in this habitat type include cattails (*Typha* spp.), tules (*Scirpus acutus*), and soft rush (*Juncus effusus*).

Freshwater marshes are among the most productive wildlife habitats. They provide food, cover, and water for many species of amphibians, reptiles, birds, and mammals. Pacific tree frogs, western toads (*Bufo boreas*), common garter snakes (*Thamnophis sirtalis*), raccoons (*Procyon lotor*), and muskrats (*Ondatra zibethicus*) use emergent wetlands for foraging, rearing, or cover. Mallards, wood ducks (*Aix sponsa*), red-winged blackbirds, common yellowthroats (*Geothlypis trichas*), marsh wrens (*Cistothorus palustris*), and song sparrows (*Melospiza melodia*) also use these habitats for foraging and nesting.

This wetland type is recognized as a sensitive natural community by local, state, and federal agencies. The isolated emergent marsh on SMP-38 is likely not considered jurisdictional by the USACE but may be regulated by SFBRWQCB.

Riparian Woodland

Riparian woodland in the Project Area occurs primarily adjacent to the Arroyo Las Positas and Cottonwood Creek. This habitat is dominated by arroyo willow (*Salix lasiolepis*), red willow (*Salix laevigata*), valley oak (*Quercus lobata*), and California black walnut (*Juglans californica*). Patches of riparian woodland along the Arroyo Las Positas are dominated by exotic trees, such as bluegum eucalyptus (*Eucalyptus globulus*) and black locust (*Robinia pseudoacacia*).

Because the vegetation is diverse and well developed, riparian communities provide high-value habitat for many wildlife species. The multilayered riparian community provides escape cover, foraging, and nesting opportunities for wildlife. Common wildlife species observed in riparian habitats in the study area include acorn woodpecker (*Melanerpes formicivorus*), bushtit (*Psaltriparus minimus*), northern mockingbird (*Mimus polyglottus*), black phoebe, and western kingbird (*Tyrannus verticalis*). Riparian trees also provide potential nesting sites for several raptor species, such as red-tailed hawk (*Buteo jamaicensis*), great

horned owl (*Bubo virginianus*), red-shouldered hawk (*Buteo lineatus*), and American kestrel (*Falco sparverius*). An active red-tailed hawk nest was observed in riparian woodland habitat on the Arroyo Las Positas in the study area during spring 2006 field surveys.

Portions of the riparian woodland in the study area would be considered jurisdictional wetland by the USACE and the SFBRWQCB. This habitat type is recognized as a sensitive natural community by local, state, and federal agencies.

Ruderal

This community type consists of narrow ruderal (weedy) areas along the road shoulders and the edges of grasslands and agricultural areas. As the ruderal areas border other habitats and are small in size, this community is discussed with the agricultural areas/disturbed annual grassland habitat and developed areas in this document.

Wildlife species found in ruderal habitat are typically tolerant of human activity because ruderal areas typically occur close to human activities. Wildlife species observed in ruderal and disturbed areas in the study area include western fence lizard (*Sceloporus occidentalis*), Brewer's blackbird (*Euphagus cyanocephalus*), American crow (*Corvus brachyrynchos*), house finch (*Carpodacus mexicanus*), house sparrow (*Passer domesticus*), and mourning dove (*Zenaida macroura*). A dead red fox (*Vulpes vulpes*) was observed along El Charro Road near an Arroyo Las Positas crossing during the November 10, 2006, field survey.

Agricultural Areas/Disturbed Annual Grasslands

Agricultural fields/disturbed annual grasslands are found throughout the study area, with the exception of the landscaped golf course and driving range west of Airway Boulevard. At the time of the 2006 surveys, two fields were either disced or planted with wheat. One agriculture field west of the driving range had recently been disced, and no crops were evident. Another field at the extreme west end of the Project Area south of the Arroyo was planted with wheat. During periods when the fields are fallow, the disturbed annual grassland becomes established. These disturbed annual grasslands are periodically disced for weed control or dryland farming.

Grasslands in the study area were dominated by soft chess brome (*Bromus hordeaceus*), ripgut brome (*Bromus diandrus*), wild oats (*Avena barbata*), Italian wild rye, foxtail barley (*Hordeum murinum* ssp. *leporinum*), and Mediterranean barley (*Hordeum marinum* ssp. *gussoneanum*). Annual grassland in the Project Area is bordered by ruderal habitat with nonnative forbs, such as wild radish (*Raphanus sativus*), yellow star thistle (*Centaurea solstitialis*), cheeseweed (*Malva parviflora*), bristly ox-tongue (*Picris echioides*), Italian thistle (*Carduus pycnocephalus*), common horehound (*Marrubium vulgare*), milk thistle (*Silybum marianum*), and common sow thistle (*Sonchus oleraceus*).

Depending on the crop pattern and the proximity to native habitats, agricultural lands can provide relatively high-value habitat for wildlife, particularly as foraging habitat. Raptors use row and grain crop agricultural lands for foraging because several species of common rodents are found in agricultural fields. A white-tailed kite (*Elanus leucurus*) and a golden eagle (*Aquila chrysaetos*) were observed in the study area during field surveys (WRA Environmental Consultants 2006).

Grasslands support insects, amphibians, reptiles, and small birds and mammals that are preyed on by other wildlife, including red-tailed hawks, red-shouldered hawks, northern harriers (*Circus cyaneus*), American kestrels, great horned owls, California voles (*Microtus californicus*), deer mice (*Peromyscus maniculatus*), western harvest mice (*Reithrodontomys megalotis*), California ground squirrels (*Spermophilus beecheyi*), and coyotes (*Canis latrans*). Grasslands near open water and woodland habitats are used by the most wildlife species (compared with other grasslands) because they provide places for resting, breeding, and escape cover.

Landscaped Areas

Landscaped areas, i.e. the golf course and driving range, comprise a large portion of the study area west of Airway Boulevard. Landscaped portions of these developed areas support a variety of ornamental native and exotic species, such as bluegum eucalyptus, as well as shrubs and turf grasses.

The landscaped areas of the Las Positas Golf Course are managed for wildlife pest species, including gophers (*Thomomys* spp**.)** and California ground squirrels. Biologists observed active ground squirrel burrows on the north side of the golf course during the November 2006 survey. Pest management procedures for gophers include placing Fumatoxin tablets, which create a toxic gas when they become moist, in the burrow cavity. Ground squirrels are controlled using oats treated with the anticoagulant chlorophacinone. A small amount of bait is measured out and then placed directly into the burrow to avoid exposure to other wildlife (Ferrero, pers. comm.).

Landscaped areas in the study area provide a similar habitat function for wildlife as ruderal areas, described above.

Developed Areas

Developed areas consist of the roads and graded road shoulders. Because of regular disturbance for road maintenance purposes, ruderal vegetation commonly occurs as a narrow band along the road shoulders. Nonnative species common to the road shoulders are Italian thistle, ripgut brome, foxtail barley, milk thistle, bristly ox-tongue, and common sow thistle.

Graded road shoulders provide low quality habitat for common wildlife species including California ground squirrel, western fence lizard, and a variety of common migratory birds.

Special-Status Species

Special-Status Plants

Biologists reviewed existing information (including a search of the CNDDB [2006]), the CNPS *Inventory of Rare, Threatened, and Endangered Plants* (2001), species lists obtained from the USFWS, previously prepared environmental documents, and species distribution and habitat requirements. Biologists identified 18 special-status plant species as having the potential to occur in the study area.

Of the 18 special-status plant species listed in Table 3.4-2, it was determined that habitat for 13 of these species is not present in the study area. A brief explanation for the absence of these species and their habitats is provided in Table 3.4-2. The remaining five special-status species were determined to have potential to occur in the study area on the basis of nearby occurrences and the presence of suitable habitat conditions in the study area:

- Congdon's tarplant,
- saline clover,
- San Joaquin spearscale,
- brittlescale, and
- heartscale.

However, none of these five species was found during the 2006 surveys. These species are discussed further below.

Congdon's Tarplant

Congdon's tarplant (also known as Congdon's spikeweed) is on the CNPS's List 1B of species considered rare, threatened, or endangered in California and elsewhere. It is a late summer-blooming annual plant up to 2.3 feet tall. The species is endemic to California's central coast and is found in four distinct areas: northern Monterey County; San Luis Obispo County; southwestern Alameda County and northwestern Santa Clara County; and central Contra Costa County (Preston 1999). Congdon's tarplant occurs in annual grassland and in ruderal areas that were once annual grassland. The primary threat to its survival is habitat loss from agricultural and urban development.

The population closest to the study area is located between Fallon Road and Croak Road, approximately 0.3 mile north of I-580 (California Natural Diversity Database 2006). In addition to the occurrence described above, many occurrences of Congdon's tarplant have been confirmed within 2 miles west of the study area.

Neither Jones & Stokes nor Zander Associates observed Congdon's tarplant during the 2006 surveys. The likelihood for this plant to occur on the site is low due to any suitable habitat in the Project Area being disturbed on a regular basis.

Saline Clover

Saline clover is on the CNPS's List 1B of species considered rare, threatened, or endangered in California and elsewhere. It is a mid- to late-spring–blooming annual that is short in stature. The distribution of the species is Alameda, Colusa, Monterey, Napa, San Benito, Santa Clara, San Luis Obispo, San Mateo, Solano, and Sonoma Counties from 300 to 900 feet in elevation. Saline clover occurs in marshes and swamps, mesic valley and foothill grassland with alkaline soils, and vernal pools. The primary threat to its survival is habitat loss from agricultural and urban development.

There is an occurrence of saline clover 0.5 mile northwest of the study site, east of Fallon Road and north of I-580 (California Natural Diversity Database 2006).

Neither Jones & Stokes biologists nor Zander Associates observed saline clover on the site during the 2006 surveys. The likelihood for this plant to occur on the site is low due to any suitable habitat in the Project Area being disturbed on a regular basis.

San Joaquin Spearscale

San Joaquin spearscale is on the CNPS's List 1B of species considered rare, threatened, or endangered in California and elsewhere. It is a mid- to late-spring–blooming annual plant up to 3.2 feet tall. The species occurs on the west margin of the Central Valley from Glenn to Tulare Counties below 1,000 feet. San Joaquin spearscale occurs in alkali grasslands, alkali scrublands, and alkali meadows. The primary threat to its survival is habitat loss from agricultural and urban development.

Two occurrences of San Joaquin spearscale have been confirmed within 1 mile of the study area (California Natural Diversity Database 2006). One of these locations is 0.5 mile west of the study site on the south side of I-580. An additional occurrence is 1 mile northwest of the study site north of I-580 and west of Fallon Road.

Neither Jones & Stokes biologists nor Zander Associates observed San Joaquin spearscale during the 2006 surveys. The likelihood for this plant to occur on the site is low due to any suitable habitat in the Project Area being disturbed on a regular basis.

Brittlescale

Brittlescale is on the CNPS's List 1B of species considered rare, threatened, or endangered in California and elsewhere. It is a late-spring– to mid-fall–blooming annual plant under 1 foot tall. The species occurs on the western and eastern Central Valley and adjacent foothills on the west side of the Central Valley below 1,050 feet. Brittlescale occurs in alkaline clay soils in playas, wet areas in valley and foothill grassland. The primary threat to its survival is habitat loss from agricultural and urban development.

One occurrence of brittlescale has been confirmed 2 miles northeast of the study area (California Natural Diversity Database 2006).

Neither Jones & Stokes biologists nor Zander Associates observed brittlescale during the 2006 surveys. The likelihood for this plant to occur on the site is low due to any suitable habitat in the Project Area being disturbed on a regular basis.

Heartscale

Heartscale is on the CNPS's List 1B of species considered rare, threatened, or endangered in California and elsewhere. It is a late-spring– to mid-fall–blooming annual plant between 6 inches and 2 feet tall. The species occurs on the west side of the Central Valley in the valleys and foothills below 660 feet. Heartscale occurs in alkali grasslands, alkali scrublands, and in alkali meadows. The primary threat to its survival is habitat loss from agricultural and urban development.

One occurrence of San Joaquin spearscale has been documented 3 miles northeast of the study area (California Natural Diversity Database 2006).

Neither Jones & Stokes biologists nor Zander Associates observed San Joaquin spearscale during the 2006 surveys. The likelihood for this plant to occur on the site is low due to any suitable habitat in the Project Area being disturbed on a regular basis.

Special-Status Wildlife

Biologists reviewed existing information (including a search of the CNDDB [2006]), species lists obtained from the USFWS, previously prepared environmental documents, and species distribution and habitat requirements, and identified 24 special-status wildlife species as having the potential to occur in the study area (Table 3.4-3). Also, non-special-status migratory birds and raptors could nest in the study area. Although these species are not considered special-status wildlife species, their occupied nests and eggs are protected by California Fish and Game Code 3503 and 3503.5 and the federal Migratory Bird Treaty Act (MBTA).

Of the 24 special-status wildlife species listed in Table 3.4-3, six species (conservancy fairy shrimp (*Branchinecta conservatio*), longhorn fairy shrimp (*Branchinecta longiantenna*), western spadefoot (*Spea hammondii*), Alameda

whipsnake (*Masticophis lateralis euryxanthus*), American badger (*Taxidea taxus*), and San Joaquin kit fox (*Vulpes macrotis mutica*)) were eliminated from further consideration either because suitable habitat for these species is not present or because the species range does not extend into the study area. Of the 24 species, there are nine bird species that could forage in the study area but do not breed there and would not be affected by project construction and are thus not discussed further.

There are a total of nine special-status species with potential to be affected by the project. Six special-status wildlife species were documented to occur in the study area: CRLF, western pond turtle, white-tailed kite, tricolored blackbird, loggerhead shrike (*Lanius ludovicianus*), and burrowing owl (*Athene canicularia*). Surveys are pending for three other special-status species that could be present: vernal pool fairy shrimp (*Branchinecta lynchi*) (VPFS), vernal pool tadpole shrimp (*Lepidurus packardi*) (VPTS), and CTS. A description of each of these nine species is provided below. See Figures 3.4-3 and 3.4-4 for locations of special-status wildlife species habitats and observations respective to the Project with the Jack London Boulevard Extension and with the Airway Boulevard Extension, respectively.

The species with potential to occur are discussed further below.

California Red-legged Frog

The CRLF is listed as threatened under the federal ESA and is a California species of special concern. Historically, the CRLF was common from Redding south to Baja California, including the Sierra Nevada and Coast Ranges. Its current range is much reduced, and most remaining populations are found in central California along the coast from Marin County south to Ventura County.

CRLFs breed in lowland and foothill streams and wetlands, including livestock ponds (Jennings and Hayes 1994). CRLFs also may be found in upland habitats near breeding areas and along intermittent drainages connecting wetlands. Adults may take refuge during dry periods in rodent holes or leaf litter in riparian habitats. Although CRLFs typically remain near streams or ponds, recent studies in Santa Cruz suggest that they are capable of moving 1.6 kilometers (1 mile) or more in upland habitat or through ephemeral drainages (Bulger 1999).

Numerous (more than 100) records of CRLF have been documented in the project vicinity (10-mile radius around the study area) (California Natural Diversity Database 2006). Most of these locations are north of I-580. An adult CRLF was reported in a small pool in the Arroyo Las Positas, within 0.5 mile of the study area, in August 1997 (California Natural Diversity Database 2006).

Site assessments conducted by Zander Associates (2006) and WRA Environmental Consultants (2006) identified the portion of the Arroyo Las Positas in the study area as suitable breeding habitat. Golf course ponds were considered to provide low quality breeding habitat based on the presence of bullfrogs and mosquitofish, and limited emergent vegetation. WRA Environmental Consultants found one unidentified ranid (potential CRLF) during

Cottonwood Creek Undercrossing

I-580

Cottonwood Creek

Children's Hospital Property

Johnson-Himsl Property

Roger Johnson Property

Crosswinds Church Property

El Charro Vista LLC Property

Johnson-Himsl Property

Private Parking

City Open Space

Arroyo Las Positas (OH-1)

City Open Space

El Charro Road

Johnson-Himsl Property

Public Parking

Public Parking

Arroyo Las Positas

Airway Blvd.

LIVERMORE

Jack London Blvd.

Isabel Ave.

Arroyo Mocho

S:\GIS\PROJECTS\LIVERMORE\06137_06\ARCMAP\FIGURE_3_4_3_BIO_RESOURCES_LONDON_11X17_20061222.MXD (12-22-06)

Project Area

Jack London Blvd. Widening and Extension

Planned Development

Setbacks

Proposed Bridge Location

Golf Course Modifications

Creek

California Red-Legged Frog Aquatic Habitat

California Red-Legged Frog Upland Habitat

California Tiger Salamander Potential Breeding Habitat

California Tiger Salamander Potential Upland Habitat

Vernal Pool Invertebrate Potential Habitat

Burrowing Owl Habitat

Red Tailed Hawk Nest

Flood Protection Features

Channel

Detention Basin

Fill

Water Quality Basin

0 1,000 2,000 3,000 4,000 Feet

N W E S

Dublin

580

Livermore

680

Pleasanton

84

Data Sources: Jones & Stokes 2006, Zander Associates 2006.
Aerial Source: City of Livermore, 2005

Jones & Stokes

Figure 3.4-3

Sensitive Wildlife Species Habitat in the El Charro Specific Plan Study Area, Jack London Boulevard Extension Option

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Cottonwood Creek Undercrossing
I-580
Cottonwood Creek
Children's Hospital Property
Johnson-Himsl Property
Roger Johnson Property
Crosswinds Church Property
El Charro Vista LLC Property
Johnson-Himsl Property
Private Parking
City Open Space
Arroyo Las Positas (OH-1)
El Charro Road
Johnson-Himsl Property
Public Parking
Public Parking
City Open Space
Airway Blvd.
Arroyo Las Positas
LIVERMORE
Isabel Ave.
Jack London Blvd.
Arroyo Mocho
1
2
3
4
5
6
7
8
9

Project Area
Airway Blvd. Widening and Extension
Planned Development
New SS Force Main
Golf Course Modifications
Creek
Setbacks
Proposed Bridge Location
California Red-Legged Frog Aquatic Habitat
California Red-Legged Frog Upland Habitat
California Tiger Salamander Potential Breeding Habitat
California Tiger Salamander Potential Upland Habitat
Vernal Pool Invertebrate Potential Habitat
Burrowing Owl Habitat
Red Tailed Hawk Nest

Flood Protection Features
Channel
Detention Basin
Fill
Water Quality Basin

0 1,000 2,000 3,000 4,000 Feet

N W E S

Data Sources: Jones & Stokes 2006, Zander Associates 2006.
Aerial Source: City of Livermore, 2005

Dublin
580
Livermore
680
Pleasanton
84

S:\GIS\PROJECTS\LIVERMORE\06137_06\ARCMAP\FIGURE_3_4_4_BIO_RESOURCES_AIRBASE_11X17_20061222.MXD (12-22-06)

Jones & Stokes

Figure 3.4-4
Sensitive Wildlife Species Habitat in the El Charro Specific Plan Study Area, Airway Boulevard Extension Option

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its 2006 surveys in the Arroyo Las Positas and Cottonwood Creek. They identified several factors that may reduce the habitat suitability for CRLF, including increased predation and competition from bullfrogs, mosquitofish, and potentially introduced centrarchids (WRA Environmental Consultants 2006).

Riparian woodland, annual grasslands, and fallow fields provide suitable upland habitat for the CRLF in the study area.

California Tiger Salamander

The Central California distinct population segment of the CTS is listed as threatened under the ESA (69 FR 47217 and 47248, August 4, 2004). CTS is endemic to the San Joaquin–Sacramento River valleys, bordering foothills, and coastal valleys of central California (Barry and Shaffer 1994). The species occurs from Sonoma County and the Colusa–Yolo County line south to Santa Barbara County in the Coast Ranges and from southern Sacramento County south to Tulare County in the Central Valley (Jennings and Hayes 1994).

CTS is a lowland species restricted to grasslands and low foothill regions where its breeding habitat (long-lasting rain pools and stock ponds) occurs. Permanent aquatic sites are unlikely to be used successfully for breeding unless they lack fish predators (Jennings and Hayes 1994). Adult CTS moves from subterranean burrow sites to breeding pools from November to February after warm winter and spring rains (Jennings and Hayes 1994). Adult CTS may migrate up to 1 mile from upland sites to a breeding pond (68 FR 28647, May 23, 2003). CTS eggs hatch in 10–14 days, and larvae generally metamorphose in 3–6 months (68 FR 28647, May 23, 2003). This species also requires dry-season refuge sites in uplands in the vicinity of breeding sites. Dry-season refuge sites include ground squirrel burrows, other rodent burrows, or crevices in the soil (Loredo et al. 1996).

Numerous (more than 100) records of CTS have been documented in the project vicinity (10-mile radius around the study area) (California Natural Diversity Database 2006). The nearest CTS record is approximately 0.05 mile from the study area on the north side of I-580 (California Natural Diversity Database 2006).

Zander Associates (2006) concluded that there was no suitable breeding habitat on the north side of the Arroyo Las Positas in the study area. The Arroyo Las Positas and Cottonwood Creek support fish and have high water flows that would preclude suitable breeding habitat for CTS. Additionally, Zander Associates noted that although farmed fields and fallow areas in the study area provide suitable aestivation habitat for this species, individuals would have to move from suitable areas north of I-580, through the 200-foot-long culvert under the freeway during the time of year when there would be high and fast winter flows in Cottonwood Creek. Zander Associates (2006) concluded that this could provide a substantial barrier to CTS. Jones & Stokes biologists identified a potential breeding site for CTS in a seasonal wetland in a drainage immediately west of Pond 1 that is south of the Arroyo Las Positas. This wetland will be monitored during winter 2006 and spring 2007 to determine whether it provides suitable

breeding habitat for CTS. If this area is determined to be suitable breeding habitat, it is possible that high flows and steep banks in the Arroyo Las Positas may inhibit potential migration from areas south of the creek to north of the creek.

Although areas south of I-580 and north of the Arroyo Las Positas are unlikely to be suitable aestivation habitat for the reasons noted above, these areas are considered low potential upland habitat for this EIR, pending completion of trapping studies in this area and consultation with the USFWS.

The USFWS agreed to a 2-year trapping study that began in winter 2005 and will be completed in 2007 (Zander pers. comm.). The area trapped is approximately 50 acres and is at the northwest edge of the study area. The study is being conducted because of the proximity of suitable upland and the nearby CTS records north of I-580. The first year has been completed, and no CTS were found (Zander Associates 2006). A trapping study commenced in fall 2006 on the Staples Ranch property to the west of the project area.

Western Pond Turtle

The western pond turtle is designated as a state species of special concern that occurs from the vicinity of the American River in California north to the lower Columbia River in Oregon and Washington (Jennings et al. 1992).

The western pond turtle is thoroughly aquatic, preferring the quiet waters of ponds, reservoirs, and sluggish streams (Stebbins 1985). The species occurs in a wide range of both permanent and intermittent aquatic environments (Jennings et al. 1992). Western pond turtles spend a considerable amount of time basking on rocks, logs, emergent vegetation, mud or sand banks, or human-generated debris. Western pond turtles move to upland areas adjacent to watercourses to deposit eggs and overwinter (Jennings and Hayes 1994). Pond turtles have been observed overwintering several hundred meters from watercourses. In the Central Valley and northward, western pond turtles typically become active in March and return to overwintering sites by October or November (Jennings et al. 1992).

A western pond turtle was observed during the September 2006 CRLF protocol survey in the southeastern part of the Arroyo Las Positas (WRA Environmental Consultants 2006).

Vernal Pool Fairy and Tadpole Shrimps

Vernal pool fairy shrimp—VPFS is listed as threatened under ESA (59 FR 48136, September 19, 1994). The shrimp is found at scattered locations throughout California's Central Valley and adjacent areas. It ranges from the Millville Plains and Stillwater Plains in Shasta County south through most of the length of the Central Valley and to the eastern margins of the Coast Ranges, from San Benito County south to Ventura County.

VPFS inhabits clear to turbid water in earth sumps and grass- or mud-bottom vernal pools and swales in unplowed grasslands and basalt-flow vernal pools

(Eng et al. 1990). The species also has been observed in rock outcrop pools, roadside ditches, road ruts, bulldozer scrapes, and backhoe pits (Helm 1998). VPFS produce cysts (eggs) that lie dormant in the soil over summer and hatch during the winter rainy season, when favorable environmental conditions prevail: When pools are inundated, the water temperature is cool, and high oxygen concentration is present (Eriksen and Belk 1999).

Within the project vicinity (10-mile radius around the study area), the nearest known VPFS occurrence is at the Springtown Alkali Sink approximately 5 miles northeast of the study area (California Natural Diversity Database 2006). In the study area, suitable habitat for VPFS occurs in manmade seasonal wetlands along El Charro Road and the eastbound onramp to I-580. The study area does not occur within designated VPFS critical habitat (68 FR 46683, August 6, 2003). Protocol-level VPFS surveys are being conducted in the study area. The dry season survey did not identify VPFS in the seasonal wetlands; the wet season survey is still underway with results expected in spring 2007.

Vernal pool tadpole shrimp—VPTS is listed as endangered under ESA (59 FR 48136, September 19, 1994). The species is found in scattered locations throughout the Sacramento and San Joaquin Valleys. This species also has been reported from the Sacramento River Delta to the east side of San Francisco Bay and from a few scattered localities in the San Joaquin Valley from San Joaquin County to Madera County (Rogers 2001).

The VPTS has been found in grassland pools with clear to highly turbid water, low conductivity, low alkalinity, and low total dissolved solids (King 1996). It also has been observed in stock ponds, pools in old alluvial soil, grass bottom swales, and other seasonal wetlands (Helm 1998). The life history of the VPTS is similar to that of the VPFS described above, except the VPTS is longer lived, usually persisting well into the early spring. When the rains first inundate the habitat, these crustaceans hatch, maturing to adult in 20–30 days, mating, shedding their cysts (eggs), and dying. The resting cysts lie in the soil crust through summer, hatching with the next seasons' rains. The cysts may lie dormant for decades before hatching.

The closest CNDDB (2006) record for VPTS occurs approximately 20 miles southwest from the study area. In the study area, suitable habitat for VPTS occurs in the same seasonal wetlands described above for VPFS. The study area does not occur within designated VPTS critical habitat (68 FR 46683, August 6, 2003). The protocol dry season survey did not identify VPTS in the seasonal wetlands; the wet season survey is still underway with results expected in spring 2007.

White-Tailed Kite

White-tailed kite is a fully protected species under California Fish and Game Code 3511. The species has a restricted distribution in the United States, occurring only in California and western Oregon and along the Texas coast (American Ornithologists' Union 1983). The species is fairly common in California's Central Valley lowlands. White-tailed kites nest in riparian and oak

woodlands and forage in nearby grasslands, pastures, agricultural fields, and wetlands. White-tailed kites use nearby treetops for perching and nesting sites. Voles and mice are common prey species.

One CNDDB record for white-tailed kite is located in the project vicinity (10-mile radius around the study area) (California Natural Diversity Database 2006).

A white-tailed kite was observed in March 2006 in the study area during the CRLF surveys (WRA Environmental Consultants 2006). Trees in the riparian woodland provide suitable nesting habitat, and adjacent agricultural and grassland habitats provide suitable foraging habitat.

Western Burrowing Owl

The western burrowing owl (burrowing owl) is a federal species of concern and a state species of special concern and is protected during its nesting season under the MBTA and California Fish and Game Code 3503.5. The burrowing owl is found throughout much of California in annual and perennial grassland, desert, and arid scrubland (Department of Fish and Game 1995). The presence of burrows is the critical requirement for burrowing owl habitat.

Throughout their range, burrowing owls rely on burrows excavated by fossorial mammals or reptiles, including, ground squirrels (*Spermophilus* spp.), American badgers, skunks (*Spilogale gracilis*, *Mephitis mephitis*), red foxes, coyotes, (Karalus and Eckert 1987). Where the number and availability of natural burrows is limited (for example, where burrows have been destroyed, or ground squirrels eradicated), burrowing owls will occupy drainage culverts, cavities under piles of rubble, discarded pipe, and other tunnel-like structures (Haug and Oliphant 1990). Its breeding season extends from March through August, peaking in April and May (Zeiner et al. 1990).

Numerous (more than 100) records of burrowing owl have been documented in the project vicinity (10 mile radius around the study area) (California Natural Diversity Database 2006).

A pair of breeding burrowing owls was observed in March 2006 along Jack London Boulevard. No other burrowing owls, recent or historic burrowing owl sign, or burrows were detected during any of the surveys. The agricultural fields/disturbed annual grasslands found throughout much of the study area provide suitable nesting and foraging habitat for burrowing owls.

Loggerhead Shrike

The loggerhead shrike is designated as a state species of special concern. It is a common year-round resident throughout the lowlands and foothills of California. Loggerhead shrikes prefer open habitats with shrubs, fences, utility line poles, or other perches. They tend to avoid urbanized areas but often frequent open croplands. Nests are usually hidden in densely foliaged shrubs or trees. The breeding season is from March through August (Zeiner et al. 1990).

No loggerhead shrikes were observed during field surveys; however, they are a common species in the project vicinity and could nest in riparian woodland and shrub habitat in the study area.

Tricolored Blackbird

The tricolored blackbird is designated as a state species of special concern. Tricolored blackbird breeding colonies have been observed in all Central Valley counties. The vast preponderance of the population occurs in central California, with additional populations in coastal and inland southern California locations, as well as scattered sites in Oregon, western Nevada, and western coastal Baja California (Beedy and Hamilton 1997, 1999; Hamilton 2000). Tricolored blackbirds have three basic requirements for selecting their breeding colony sites: (1) open accessible water; (2) a protected nesting substrate, including either flooded, thorny or spiny vegetation; and (3) a suitable foraging space providing adequate insect prey within a few miles of the nesting colony (Hamilton et al. 1995; Beedy and Hamilton 1997, 1999). Nesting substrate used by tricolored blackbirds includes freshwater marsh dominated by tules and cattails, willows, blackberries, thistles, and nettles.

CNDDB records for tricolored blackbirds occur in quarry ponds approximately 0.25 mile south of the study site.

Approximately 30 tricolored blackbirds were observed perched in Pond 1 on the golf course during the October 12, 2006, survey. Pond 1 provides suitable nesting habitat, and agricultural and annual grassland habitats provide suitable foraging habitat.

Other Non-Special-Status Migratory Birds, including Raptors

Several non-special-status migratory birds, including raptors, could nest in and adjacent to the study area based on the presence of suitable nesting habitat (riparian woodlands, emergent marsh, and annual grasslands). The breeding season for most birds is generally from March 1 to August 15. The occupied nests and eggs of these birds are protected by federal and state laws, including the MBTA and California Fish and Game Code 3503 and 3503.5. DFG is responsible for overseeing compliance with the codes and makes recommendations on nesting bird and raptor protection.

A focused nest survey was not conducted during the 2006 field surveys. Common migratory birds and raptors could nest in the study area. However, during the burrowing owl survey, an active red-tailed hawk nest was found along the Arroyo Las Positas at the extreme west end of the Las Positas Golf Course. Two adults were observed feeding three downy chicks.

Special-Status Fish

There is no potential for steelhead (*Oncorhynchus mykiss***)** to presently occur in the Arroyo Las Positas because of downstream barriers (such as the BART weir in Fremont) to migration from San Francisco Bay to the Project Area. Steelhead habitat has been assessed as part of studies considering potential removal of downstream barriers and restoration of steelhead to the Alameda Creek watershed. The Alameda Creek Fisheries Restoration Workgroup identified the Arroyo Las Positas as non-viable habitat for steelhead (Gunther et al. 2000). Synthesis of historic information by Robert Leidy included no reports of steelhead or resident trout inhabiting the Arroyo Las Positas (Leidy 1984). Further, in an assessment of habitat conditions for Zone 7 Water Agency, Chuck Hansen, a noted local fisheries biologist, also found that the Arroyo Las Positas watershed does not provide habitat for anadromous steelhead (Hansen 2003). Thus, even if steelhead are ultimately restored to Alameda Creek, the Project Area ultimately would not provide suitable habitat for this species. Because it is not present now, and habitat is not suited, steelhead are not considered further in this EIR.

There have been reports of several warm-water species historically in the Arroyo Las Positas including hitch (*Lavinia exilicauda*), mosquitofish, and three-spine stickleback (*Gasterosteus aculeatus*), but these species are common, extremely, tolerant, non-migratory, resident species endemic to most low elevation watersheds in northern California (Hansen 2003).

Thus, there is no suitable habitat for special-status fish in the Arroyo Las Positas adjacent to the Project, and they are not considered further in this EIR.

Regulatory Framework

Federal Regulations

Endangered Species Act

ESA protects fish and wildlife species, and their habitats, that have been identified by the USFWS as threatened or endangered. *Endangered* refers to species, subspecies, or distinct population segments that are in danger of extinction through all or a significant portion of their range; *threatened* refers to those likely to become endangered in the near future.

The ESA is administered by the USFWS. Provisions of Sections 7 and 9 of the ESA are relevant to this Project and are summarized below.

Section 7: Endangered Species Act Authorization Process for Federal Actions

Section 7 provides a means for authorizing take of threatened and endangered species by federal agencies. It applies to actions that are conducted, permitted, or funded by a federal agency. Under Section 7, the federal agency conducting,

funding, or permitting an action (the federal lead agency) must consult with the USFWS, as appropriate, to ensure that the proposed action will not jeopardize endangered or threatened species or destroy or adversely modify designated critical habitat. If a proposed action "may affect" a listed species or designated critical habitat, the lead agency is required to prepare a biological assessment evaluating the nature and severity of the expected effect. In response, the USFWS issues a biological opinion, with a determination that the proposed action either:

- may jeopardize the continued existence of one or more listed species (jeopardy finding) or result in the destruction or adverse modification of critical habitat (adverse modification finding); or
- will not jeopardize the continued existence of any listed species (no jeopardy finding) or result in adverse modification of critical habitat (no adverse modification finding).

The biological opinion may stipulate discretionary "reasonable and prudent" alternatives. If the proposed action would not jeopardize a listed species, the USFWS issues an incidental take statement to authorize the proposed Project.

Since the proposed Project would result in potential adverse effects on CRLF (and possibly other federally-listed species), the City will be required to submit a biological assessment to the federal lead agency for transmittal to the USFWS, in compliance with Section 7 (16 U.S. Government Code [USC] 1536).

Section 9: Endangered Species Act Prohibitions

Section 9 prohibits the unauthorized take of any wildlife species federally listed as endangered. In the absence of regulations specifically addressing species listed as threatened, this prohibition also applies to threatened species. *Take*, as defined by ESA, means "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." *Harm* is defined as "any act that kills or injures the species, including significant habitat modification." In addition, Section 9 prohibits removing, digging up, cutting, and maliciously damaging or destroying federally listed plants on sites under federal jurisdiction. If the Project may result in take prohibited by Section 9, this take would need to be authorized through ESA Section 7 or 10 (providing for the issuance of "incidental take" permits).

Migratory Bird Treaty Act

The MBTA (16 USC 703) enacts the provisions of treaties between the United States, Great Britain, Mexico, Japan, and the Soviet Union and authorizes the U.S. Secretary of the Interior to protect and regulate the taking of migratory birds. It establishes seasons and bag limits for hunted species and protects migratory birds, their occupied nests, and their eggs (16 USC 703; 50 CFR 10, 21). Most actions that result in taking or in permanent or temporary possession of a protected species constitute violations of the MBTA. Examples of permitted actions that do not violate the MBTA are the possession of a hunting license to pursue specific game birds, legitimate research activities, display in zoological

gardens, bird-banding, and other similar activities. The USFWS is responsible for overseeing compliance with the MBTA, and the U.S. Department of Agriculture's Animal Damage Control Officer makes recommendations on related animal protection issues.

Clean Water Act

The federal CWA was enacted as an amendment to the federal Water Pollution Control Act of 1972, which outlined the basic structure for regulating discharges of pollutants to waters of the United States. The CWA serves as the primary federal law protecting the quality of the nation's surface waters, including lakes, rivers, and coastal wetlands. The following discussion gives background information as relevant to biological resources; additional discussion of the CWA is provided in section 3.8, "Hydrology and Water Quality."

Waters of the United States are areas subject to federal jurisdiction pursuant to Section 404 of the CWA. *Waters of the United States* are typically divided into two types: *wetlands* and *other waters of the United States*.

Wetlands are "areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 CFR § 328.3[b]; 40 CFR § 230.3). To be considered subject to federal jurisdiction, a wetland normally must support hydrophytic vegetation, hydric soils, and wetland hydrology (Environmental Laboratory 1987).

Other waters of the United States are seasonal or perennial water bodies, including lakes, stream channels, drainages, ponds, and other surface water features, that exhibit an ordinary high water mark but lack positive indicators for the three wetland parameters (33 CFR 328.4).

Permits for Fill Placement in Waters and Wetlands (Section 404)

CWA 404 regulates the discharge of dredged and fill materials into waters of the United States.

Applicants must obtain a permit from the USACE for all discharges of dredged or fill material into waters of the United States, including wetlands, before proceeding with a proposed activity. The USACE may issue either an individual permit evaluated on a case-by-case basis or a general permit evaluated at a program level for a series of related activities. General permits are preauthorized and are issued to cover multiple instances of similar activities expected to cause only minimal adverse environmental effects. Nationwide permits (NWPs) are a type of general permit issued to cover particular fill activities. Each NWP specifies particular conditions that must be met for the NWP to apply to a particular project. Waters of the United States in the Project Area are under the jurisdiction of the Sacramento District of the USACE.

Compliance with CWA 404 requires compliance with several other environmental laws and regulations. The USACE cannot issue an individual

permit or verify the use of a general permit until the requirements of the National Environmental Policy Act (NEPA), ESA, and the National Historic Preservation Act (NHPA) have been met. In addition, the USACE cannot issue or verify any permit until a water quality certification or a waiver of certification has been issued pursuant to CWA 401.

Water Quality Certification (Section 401)

Under CWA 401, applicants for a federal license or permit to conduct activities that may result in the discharge of a pollutant into waters of the United States must obtain certification from the state in which the discharge would originate or, if appropriate, from the interstate water pollution control agency with jurisdiction over affected waters at the point where the discharge would originate. Therefore, all projects that have a federal component and may affect state water quality (including projects that require federal agency approval, such as issuance of a Section 404 permit) also must comply with CWA 401.

State Regulations

California Fish and Game Code

Fully Protected Species

The California Fish and Game Code provides protection from take for a variety of species, referred to as *fully protected species*. Section 5050 lists protected amphibians and reptiles. Section 3515 prohibits take of fully protected fish species. Eggs and nests of all birds are protected under Section 3503; nesting birds (including raptors and passerines), under Sections 3503.5 and 3513; birds of prey, under Section 3503.5; and fully protected birds, under Section 3511. Migratory non-game birds are protected under Section 3800. Mammals are protected under Section 4700. The California Fish and Game Code defines *take* as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." Except for take related to scientific research, all take of fully protected species is prohibited. White-tailed kite is the only fully protected species that is known to occur in the Project Area.

Streambed Alteration Agreements (Section 1602 et seq.)

DFG has jurisdictional authority over wetland resources associated with rivers, streams, and lakes under California Fish and Game Code 1602. DFG has the authority to regulate all work under the jurisdiction of California that would substantially divert, obstruct, or change the natural flow of a river, stream, or lake; substantially change the bed, channel, or bank of a river, stream, or lake; or use material from a streambed.

In practice, DFG marks its jurisdictional limit at the top of the stream or lake bank or the outer edge of the riparian vegetation, where present, and sometimes extends its jurisdiction to the edge of the 100-year floodplain. Because riparian habitats do not always support wetland hydrology or hydric soils, wetland boundaries, as defined by CWA 404, sometimes include only portions of the

riparian habitat adjacent to a river, stream, or lake. Therefore, jurisdictional boundaries under Section 1600 may encompass a greater area than those regulated under CWA 404.

DFG enters into a Streambed Alteration Agreement (SAA) with an applicant and can request conditions to ensure that no net loss of wetland values or acreage will be incurred. The streambed or lakebed alteration agreement is not a permit but, rather, a mutual agreement between DFG and the applicant.

Sections 3503 and 3503.5

Section 3503 of the California Fish and Game Code prohibits the killing of birds or the destruction of bird nests. Section 3503.5 prohibits the killing of raptor species and the destruction of raptor nests. Known or expected nesting birds that occur in the study area include red-tailed hawk, loggerhead shrike, and burrowing owl.

Local Regulations

This section summarizes City and County General Plan policies that pertain to biological resources that could affect or be affected by the proposed Project.

Alameda County General Plan

The proposed Project is located within an area included in the Alameda County's East County Area Plan (ECAP) (adopted 1994, updated 2002), which is a portion of the Alameda County General Plan. The goal of the ECAP as it pertains to biological resources is: "To preserve a variety of plant communities and wildlife habitat."

Policies:

P118B. Where site-specific impacts on biological resources resulting from a proposed land use outside the Urban Growth Boundary are identified, the County shall encourage that mitigation is complementary to the goals and objectives of the ECAP. To that end, the County shall recommend that mitigation efforts occur in areas designated as "Resource Management" or on lands adjacent to or otherwise contiguous with these lands in order to establish a continuous open space system in East County and to provide for long-term protection of biological resources.

P120. The County shall encourage preservation of areas known to support special status species.

P120A. The County shall encourage no net loss of riparian and seasonal wetlands.

P122. The County shall protect existing riparian woodland habitat present along Arroyo Mocho, Arroyo Del Valle, Arroyo Las Positas, Arroyo de la Laguna; and Alamo, Tassajara, and Alameda Creeks.

City of Livermore General Plan

The goal of the Open Space and Conservation Element of the Livermore General Plan (City of Livermore 2004a) is to ensure the comprehensive and long-range preservation and management of open space land for the protection of natural resources, for economic uses, for outdoor recreation, and as a scenic resource.

Objective OSC-1.1: Maintain biodiversity within the Planning Area with special emphasis on species that are sensitive, rare, declining, unique or represent valuable biological resources.

Polices:

P1. Priority shall be given to land acquisition efforts that would result in the creation and expansion of linkages between existing protected natural resource areas.

P4. The City shall require all projects that impact a federal or State listed threatened or endangered species, federal or State listed candidate species, State species of special concern, or State designated sensitive habitats, to mitigate for identified impacts in a way consistent with mitigation and avoidance measures published and distributed by the federal and/or State resource agencies at the time of the specific plan or project-level review. Monitoring requirements also shall be consistent with published requirements for each species or habitat. For listed or candidate species, species of special concern, or sensitive habitats for which no mitigation or avoidance measures have been published, the City shall require evidence of coordination with the responsible agencies prior to acceptance of mitigation or avoidance measures or monitoring requirements.

Objective OSC-1.2: Minimize impacts to sensitive natural habitats including alkali sinks, riparian vegetation, wetlands and woodland forest.

Policies:

P1. Habitats of rare or endangered species shall be preserved.

P2. Use and development of riparian areas should enhance the appearance of the creek side environment and protect and enhance native vegetation.

P3. Require appropriate setbacks, to be determined in coordination with resource agencies, LARPD, EBRPD, and other responsible agencies, adjacent to natural streams to provide adequate buffer areas that ensure the protection of plant and animal communities.

P4. Riparian woodlands and freshwater marshes shall be preserved. Developers shall be required to mitigate possible adverse impacts upon these resource areas.

P5. Grading and excavation in woodland areas shall avoid disturbances to subsurface soil, water or rooting patterns for natural vegetation.

P6. The City shall require all development to comply with State and federal regulations to preserve and protect the habitats of rare and endangered species.

P7. The City shall require project proponents to identify and map sensitive biological and wetland resources on each development parcel and identify the measures necessary to avoid and/or minimize impacts on sensitive biological and wetland resources prior to approving the development. Mitigation for impacts to sensitive biological and wetland resources shall replace the functions and values of the resources as well as gross acreage.

P8. The City shall require development to avoid take of species listed as threatened, endangered, or candidate under federal and state endangered species acts by implementing measures determined in consultation with the U.S. Fish and Wildlife Service and the California Department of Fish and Game.

Objective OSC-1.3: Conserve Livermore's native trees and vegetation, which are important biological resources within the Planning Area.

Policy:

P1. Require new developments to incorporate native vegetation into their landscape plans, and prohibit the use of invasive non-native plant species. Propagules (seeds or plants) of native plants shall be from native sources.

County and City Native and Heritage Tree Ordinances

The Alameda County Tree Ordinance applies to trees within County road rights of way. There are no trees along El Charro Road, which is only County road right of way within the project area.

The City of Livermore requires that permits be obtained prior to the removal of street trees and trees designated as "ancestral trees" by the Livermore beautification committee. Ancestral trees are designated because they have special value to the community due to their age, size, location, or species. A tree inventory has not been conducted of the project site to date. No ancestral trees have been designated in the project area.

Impact Analysis

Methodology

This impact analysis is based on preliminary design drawings and site-specific information gathered during field surveys. To the extent possible, the mitigation measures described for potential impacts on sensitive biological resources were developed through coordination with resource agencies.

Impact Assumptions

Construction activities associated with the proposed Project could result in temporary or permanent impacts on biological resources in the construction area and short-term or long-term indirect impacts on biological resources located

adjacent to the construction area. In assessing the magnitude of possible effects, the following assumptions were made regarding construction-related impacts on biological resources.

- Road construction activities would occur within a maximum 150-foot-wide corridor (actual width would vary by location).
- The project would include construction of up to five bridges that could affect riparian woodland and CRLFs and nesting birds (four bridges on the Children's Hospital site to support development and either a bridge over Arroyo Las Positas with the Jack London Extension or a bridge over Cottonwood Creek with the Airway Blvd. Extension). The four bridges on the Children's Hospital would replace four existing bridges and one existing culvert on the two creeks today.
- All fallow fields, disturbed annual grasslands, riparian woodlands within 100 feet of the Arroyo Las Positas and Cottonwood Creek are considered upland habitat for CRLF.
- All agricultural and disturbed annual grassland habitats within 2,200 feet of potentially suitable breeding habitat for CTS are considered upland habitat. This assumption is pending results of 2006–2007 protocol surveys and would be altered if no salamanders are found.
- All construction activities, including staging areas and access roads, would occur within the construction corridor. If any staging areas are identified outside this construction corridor, they will be located within previously graded, paved, or otherwise disturbed areas that do not support any sensitive biological resources. Off-site staging areas would need to be evaluated and approved by a qualified biological monitor and the City of Livermore prior to the contractor's use of the site.
- Project effects on agricultural areas/disturbed annual grassland and landscaped habitats are considered to be less than significant because they are not sensitive vegetation communities. These habitats are dominated by nonnative plant species and lack species diversity. However, these habitats provide valuable wildlife habitat and are discussed under the "Impact Analysis" section when discussing wildlife issues.
- Project effects on golf course ponds are considered to be less than significant because human-made ponds used for landscape purposes with an artificial water source are not regulated by the USACE or the state. The ponds are not considered a sensitive natural community. However, ponds may provide some value to wildlife and are discussed under the "Impact Analysis" section when discussing wildlife issues.

The number of biological communities that would be removed during construction activities was estimated using the most current project information provided by the project engineers. A biological monitor will be present during construction activities that occur within or near any sensitive biological resources.

No creeks that provide habitat for special-status fish are in the study area; therefore, impacts on special-status fish are not discussed in this analysis.

Impact Mechanisms

The following types of activities could cause impacts on biological resources. These impact mechanisms were used to assess project-related impacts on biological resources in the study area:

- grading, excavating/trenching, and paving activities during infrastructure (roads, utilities, etc.) construction;
- temporary stockpiling and sidecasting of soil, construction materials, or other construction wastes;
- soil compaction, dust, and water runoff from the construction site;
- short-term construction-related noise (from equipment);
- degradation of water quality in creeks and seasonal and perennial wetlands, resulting from construction runoff containing petroleum products; and
- alteration of surface or subsurface hydrology in the Project Area, resulting in changes in water supply or water quality to creeks and wetlands (see section 3.8, "Hydrology and Water Quality").

Thresholds of Significance

The State CEQA Guidelines and professional standards were used to determine whether the proposed Project would have a significant impact on biological resources. A project would have a significant impact on biological resources if it would:

- result in a substantial reduction in the number of, a restriction in the range for, or a loss of habitat for a population of any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations or by DFG or the USFWS;
- have a substantial adverse effect by diminishing the area or quality of any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by DFG or the USFWS;
- have a substantial adverse effect on federally protected wetlands, as defined by Section 404 of the CWA, through direct removal, filling, hydrological interruption, or other means;
- substantially interfere with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites; or
- conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state

policies protecting biological resources, including the City's ancestral tree ordinance.

Environmental Impacts—Proposed Project

The impacts of the El Charro Specific Plan and associated development and infrastructure on biological resources are discussed below. As described in Chapter 2, "Project Description," there are two options for the east-west road extension: the Jack London Boulevard Extension and the Airway Boulevard Extension. As appropriate, differences in impacts on biological resources for these two options are noted in the text below.

On a general basis, the project impacts on biological communities are as shown in Table 3.4-5.

Table 3.4-5. Biological Community Impacts in the Study Area, Permanent and Temporary (Acres)

Biological Community	Jack London option	Airway option
Seasonal and Depressional Wetlands	1.5	1.5
Ponds	3.2	1.3
Riparian wetlands	0.0	0.5
Emergent marshes	0.1	0.0
Irrigated pastures	16.0	26.4
Agricultural areas/Disturbed annual grasslands	229.0	215.0
Landscaped areas (golf course and driving range)	45.0	59.8
Developed areas (roads and graded road shoulders)	8.5	12.2
Total:	303.3	316.7

Impact BIO-1: Loss or Disturbance of Special-Status Plants—Less than Significant

Construction activities associated with the proposed Project could result in the disturbance or loss of special-status plants. Five special-status plants have been identified as having the potential to occur in the Project Area, but none were found during floristic surveys. This impact is considered less than significant.

Impact BIO-2: Potential Direct Loss of, and Indirect Impacts on, Potential Habitat for Vernal Pool Fairy Shrimp and Vernal Pool Tadpole Shrimp—Less than Significant with Mitigation

VPFS and VPTS habitat (1.5 acres of isolated seasonal wetlands near El Charro Road and the I-580 eastbound onramp) is found within the area proposed for the El Charro road improvements, the Prime Outlets Livermore Valley, and the I-580 interchange eastbound ramp improvements.

Given the location of the seasonal wetlands, avoidance of the potential habitat and the adjacent areas would make it infeasible to expand El Charro Road and improve the I-580 El Charro interchange eastbound ramps and would substantially reduce the potentially developable land for the proposed Project. Thus, avoidance or minimization of impacts is considered infeasible, and fill of the potential habitat would be necessary to achieve the project objectives.

As noted above, protocol surveys for these species are currently under way. If no listed shrimp are found on-site, then the Project would have no effect on the species. However, if listed shrimp are found on-site, then the Project would result in loss of the individuals present and the associated 1.5 acres of seasonal wetland habitat. Loss of individuals or habitat for the federally listed VPFS and VPTS are considered potentially significant but would be reduced to a less-than-significant level by implementation of the following mitigation measures.

Mitigation Measure BIO-2a: Complete Protocol Surveys for Vernal Pool Fairy Shrimp and Vernal Pool Tadpole Shrimp

A qualified biologist with authorization from the USFWS will complete protocol-level surveys to determine whether VPFS or VPTS are present in the identified suitable seasonal wetland habitat. If a listed species is found, Mitigation Measure BIO-2b will be required.

Alternately, the City and Prime Outlets Livermore Valley may choose to assume that the relevant water bodies are occupied by VPFS or VPTS.

Mitigation Measure BIO-2b: Compensate for the Impacts on Vernal Pool Fairy Shrimp and Vernal Pool Tadpole Shrimp

If Mitigation Measure BIO-2a results in a determination that the proposed Project would have direct impacts on VPFS or VPTS habitat, to compensate for these impacts on potential habitat, the City or Prime Outlets Livermore Valley will preserve and create additional habitat for these species using USFWS-approved compensation ratios as described below.

The City or Prime Outlets Livermore Valley will preserve suitable VPFS and VPTS habitat at a ratio of 2:1 (2 acres preserved for every 1 acre of habitat directly or indirectly affected) and will create suitable VPFS and VPTS habitat at a ratio of 1:1 (1 acre created for every acre lost). Preservation credits must be acquired from a USFWS-approved mitigation bank or conservation area (if any are approved between now

and project construction; none are presently approved in Alameda County). This mitigation may involve one of the following options:

- purchasing vernal pool preservation or creation credits at an existing mitigation bank if approved by the USFWS;
- establishing a vernal pool habitat preserve or creating vernal pool habitat at an existing conservation area (assuming that conservation area has been approved by the USFWS as suitable VPFS and VPTS habitat);
- establishing a new vernal pool habitat preserve and preserving or creating vernal pool habitat at that location (the creation of a new preserve would require preparation of a management plan and approval by the USFWS); or
- paying sufficient funds into a USFWS-approved species fund to support habitat preservation and restoration for these species.

Final compensation requirements and mitigation ratios for the proposed Project will be determined through consultation with the USFWS. The exact cost to purchase preservation and creation credits for project-related impacts will be determined at the time of purchase. Mitigation credits will be purchased, or a conservation area and management plan will be established, prior to any ground disturbing activities, including grading, in the Project Area.

Impact BIO-3: Loss of California Red-Legged Frogs and Degradation of Aquatic and Upland Habitat—Less than Significant with Mitigation

CRLF aquatic breeding habitat is present in the study area in the Arroyo Las Positas and Cottonwood Creek. In addition, the golf course ponds provide low quality breeding habitat. The species has been observed in the Arroyo Las Positas and occurs in several ponds north of I-580 (California Natural Diversity Database 2006). Riparian woodland, annual grasslands, and fallow fields occur within 100 feet of suitable CRLF breeding habitat and could be used as refuge sites and for dispersing by CRLF. If CRLFs are present in aquatic and upland habitats in the construction area, construction activities (i.e., staging, grading, and excavation) could result in direct impacts (i.e., loss of adult frogs). Impacts on habitat are shown in Table 3.4-6a and 3.4-6b.

Table 3.4-6a. El Charro Specific Plan, Estimated Impacts on California Red-Legged Frog, Jack London Boulevard Extension Option (acres)

Impact Cause	Impact	Aquatic Habitat	Associated Upland Habitat	Total
Prime Outlets	perm	0.03	–	0.03
Prime Outlets	temp	0.10	0.03	0.13
Children's Hospital Overflow Channels	perm	0.05	0.24	0.29
Children's Hospital Property Development	perm	–	0.27	0.27
Children's Hospital Property Bridges	perm	–	0.34	0.34
Children's Hospital Property Bridges	temp	0.21	–	0.21
North Overbank Channel/Water Quality Basin	perm	0.03	0.55	0.58
North Overbank Channel/Water Quality Basin	temp	0.10	0.03	0.13
Detention Basin	perm	0.03	–	0.03
Detention Basin	temp	0.10	0.03	0.13
Jack London Boulevard Extension	perm	1.01	0.69	1.70
Jack London Boulevard Extension	temp	0.20	0.11	0.31
Golf course Redesign	perm	*2.27*	-	*2.27*
Subtotal	*perm*	*3.42*	*2.09*	*5.51*
Subtotal	*temp*	*0.69*	*0.20*	*0.89*
Total:		**4.11**	**2.29**	**6.40**

Note:

Associated upland habitat is defined as fallow grassland and annual grassland adjacent to the Arroyo Las Positas and Cottonwood Creek within 100 feet of the creek. Areas of golf course turf, development, and disced agricultural fields are not included in areas considered associated upland habitat. Golf Course redesign is assumed to work around and not disturb existing water hazards.

Table 3.4-6b. El Charro Specific Plan, Estimated Impacts on California-Red-Legged Frog, Airway Boulevard Extension Option (acres)

Impact Cause	Impact	Aquatic Habitat	Associated Upland Habitat	Total
Prime Outlets	perm	0.03	0.00	0.03
Prime Outlets	temp	0.10	0.03	0.13
Children's Hospital Overflow Channels	perm	0.05	0.24	0.29
Children's Hospital Property Development	perm	–	0.27	0.27
Children's Hospital Property Bridges	perm	–	0.34	0.34
Children's Hospital Property Bridges	temp	0.21	–	0.21
North Overbank Channel/Water Quality Basin	perm	0.03	0.58	0.61
North Overbank Channel/Water Quality Basin	temp	0.10	0.03	0.13
Detention Basin/Golf Course Redesign	perm	0.03	–	0.03
Detention Basin/Golf Course Redesign	temp	0.10	0.03	0.13
Airway Boulevard Extension	perm	0.57	2.58	3.15
Airway Boulevard Extension	temp	0.26	0.65	0.91
Golf Course Redesign (outside of basin area)	perm	1.61	0.06	1.67
Golf Course Redesign (outside of basin area)	temp	0.25	–	0.25
Subtotal	*perm*	*2.32*	*4.07*	*6.39*
Subtotal	*temp*	*1.01*	*0.73*	*1.75*
Total:		**3.33**	**4.80**	**8.13**

Note:

Associated upland habitat is defined as fallow grassland and annual grassland adjacent to the Arroyo Las Positas and Cottonwood Creek within 100 feet of the creek. Areas of golf course turf, development, and disced agricultural fields are not included in areas considered associated upland habitat. Golf Course redesign is assumed to work around and not disturb existing water hazards.

Depending on the east-west road option, implementation of the proposed Project could permanently remove and temporarily disturb approximately 2 to 5 acres of CRLF upland habitat and approximately 3 to 4 acres of CRLF aquatic habitat (the bulk of which consists of golf course ponds). These estimates may change somewhat as specific road and development proposal designs are advanced, but they would not be expected to substantially change, as the Specific Plan will mandate 100-foot setbacks from the Arroyo Las Positas and Cottonwood Creek for most development (excepting roads and utility crossings), with the exception of the setback on the Children's Hospital northwest parcel, which has a reduced setback of 50 feet in an area of existing development. These setbacks would prevent further encroachment into frog habitat, which is centered on the creeks.

During construction in aquatic and upland areas, CRLFs could be crushed by construction equipment. Trenches or pits left open during the night could trap CRLFs moving through the construction area.

CRLF is listed as a federally threatened species. Any project activities that could result in "take" of CRLF, as defined under the ESA, would require formal consultation with the USFWS. This is considered a significant impact. The following measures should be implemented to minimize and compensate for project impacts on CRLF and reduce this impact to less than significant.

Mitigation Measure BIO-3a: Restrict All Site Grading within California Red-Legged Frog Upland Habitat to the Dry Season (May 1 to October 15) or Use Exclusion Fencing for Construction that Continues outside the Dry Season

To minimize disturbance of dispersing CRLFs, all grading activity within CRLF upland habitat (within 100 feet of aquatic habitat) shall be conducted during the dry season, between May 1 and October 15, or before the onset of the rainy season, whichever occurs first unless exclusion fencing is utilized. Construction that commences in the dry season may continue into the rainy season is exclusion fencing is placed between the construction sites and the Arroyo Las Positas and Cottonwood Creek to keep CRLF from entering the construction area. Grading within upland habitat shall not commence during the rainy season unless exclusion fencing is placed before the rainy season.

Mitigation Measure BIO-3b: Minimize Ground-Disturbing Activities in California Red-Legged Frog Upland Habitat

To minimize disturbance and mortality of CRLFs in suitable upland habitat (riparian woodland, annual grassland, and fallow fields), the project proponents will minimize the extent of ground-disturbing activities by minimizing the project footprint and limiting the work area to the minimum area necessary for construction.

A 100-foot setback from the top of the bank of the Arroyo Las Positas and Cottonwood Creek will be mandatory for all new development and the water quality and detention basins, with the following exceptions: (1) setbacks on the northwest parcel of the Children's Hospital property may be 50 feet from the top of the bank, provided that the setback for new development on the opposite bank is 150 feet; (2) setbacks do not apply to roads and utilities that must cross the creeks; and (3) setbacks do not apply to new outfalls or inlet channels necessary for water quality and flood control improvements.

Mitigation Measure BIO-3c: Conduct a Preconstruction Survey for California Red-Legged Frog

To avoid and minimize impacts on CRLFs, the project proponents will retain a qualified wildlife biologist to conduct preconstruction clearance surveys for CRLFs no more than 48 hours before ground disturbance in aquatic and upland habitats. If a CRLF is encountered during any project

activities, construction will cease until the frog is removed by a USFWS-approved biologist and relocated to nearby suitable aquatic habitat. The USFWS and DFG will be notified within five working days of any CRLF relocation.

Mitigation Measure BIO-3d: Enhance California-Red Legged Frog Aquatic and Upland Habitat On-Site

To compensate for the loss and disturbance of CRLF aquatic habitat, the project proponents shall prepare and implement a habitat enhancement program that includes the following:

- the removal of five existing bridges on the Children's Hospital property and restoration of the creek and riparian vegetation at these locations as called for in Mitigation Measure BIO-7a (the Arroyo Las Positas Habitat Enhancement Plan) below;
- the restoration of riparian and adjacent grassland habitat along the Arroyo Las Positas and Cottonwood Creek as called for in Mitigation Measure BIO-7a (the Arroyo Las Positas Habitat Enhancement Plan) below; and
- bullfrog control in the Arroyo Las Positas and Cottonwood Creek.

Mitigation Measure BIO-3e: Compensate for the Loss and Disturbance of California Red-Legged Frog Aquatic and Upland Habitat

Project proponents will preserve or create additional habitat for the CRLF using the minimum compensation ratios as described below.

The project proponents will preserve suitable CRLF habitat at a ratio of 1:1 for all impacts on golf course ponds, 3:1 for permanent impacts on other aquatic and upland habitat, and 1:1 for temporary impacts on other aquatic and upland habitat. To the extent that Mitigation Measure BIO-7a results in an increase in aquatic or upland habitat above existing conditions, that increase may be used to offset part (or all) of the need for off-site mitigation.

This mitigation may involve one of the following options:

- purchasing mitigation credits at an existing mitigation bank if approved by the USFWS (the Ohlone Preserve Conservation Bank in Sunol has CRLF mitigation credits presently available);
- establishing a CRLF habitat preserve or creating vernal pool habitat at an existing conservation area (assuming that conservation area has been approved by the USFWS as suitable CRLF habitat);
- establishing a new CRLF habitat preserve and preserving or creating CRLF habitat at that location (the creation of a new preserve would require preparation of a management plan and approval by the USFWS); or

- paying sufficient funds into a USFWS-approved species fund to support habitat preservation and restoration for this species.

Cottonwood Creek will not be realigned to facilitate development, but would be allowed for the Airway Blvd. Extension, if this road option is selected. If the creek is realigned to support road construction, then the realigned creek shall be designed in such as way that the realigned section has equivalent functions and values (including CRLF aquatic habitat) to that existing at present. The City shall also provide off-site compensation for all temporarily affected waters/wetlands and CRLF habitat at a minimum 1:1 ratio (1 acre preserved to one acre temporary affected).

Final compensation requirements and mitigation ratios for the proposed Project will be determined through consultation with the USFWS. The exact cost to purchase preservation and creation credits for project-related impacts will be determined at the time of purchase. Mitigation credits will be purchased, or a conservation area and management plan will be established, prior to any ground disturbing activities, including grading, in the Project Area.

Mitigation Measure BIO-7a: Design, Fund, and Implement the Arroyo Las Positas Habitat Enhancement Plan to Enhance, Re-create, or Restore Riparian Forest and Grassland Habitat along Portions of the Arroyo Las Positas and Cottonwood Creek

The full text of this measure is included below.

Impact BIO-4: Loss or Disturbance of California Tiger Salamander Aquatic and Upland Habitat and Potential Loss of California Tiger Salamander Adults, Larvae, or Eggs—Less than Significant with Mitigation

As noted above, the project site north of Arroyo Las Positas does not contain suitable aquatic breeding habitat for CTS and the only potential breeding habitat south of Arroyo Las Positas in the project area is a seasonal wetland in a drainage ditch draining the airport that has yet to be confirmed as having ponding of sufficient duration to support breeding. Given these features, the lack of documented occurrences on or adjacent to the project area south of I-580, the existence of I-580 as a substantive barrier to migration, and the migration-limiting factors concerning the culvert on Cottonwood Creek under I-580, the project area appear unlikely to support CTS breeding and/or upland aestivation.

Protocol surveys are underway on the project area and at the adjacent Staples Ranch. Despite the low potential for CTS to occur, in the event that CTS are found on the project area or in the immediate vicinity south of I-580, the project could affect this species.

Construction activities associated with the proposed Project could result in the disturbance or loss of aquatic and upland habitat and potentially kill CTS. CTS

occurs just north of I-580 near Cottonwood Creek (California Natural Diversity Database 2006). With known occurrences of the special-status species in the project vicinity, there is potential for these species to occur within the Project Area. Activities associated with road construction could result in the loss of upland and breeding habitat if the species is found in the Project Area.

If CTS is not found in the surveys south of I-580, given the degraded quality of upland habitat in the Project Area and the difficulty of substantive migration from north of I-580 to the Project Area, then the site would not be considered to support CTS, and project impacts on this species would be considered less than significant.

However, if CTS is found in any of the surveys being conducted on the Prime Outlets Livermore Valley site, the adjacent Staples Ranch, or the upcoming surveys south of the Arroyo Las Positas, then the Project Area would be considered to support the species, and the potential upland habitat north and south of the Arroyo Las Positas would be considered occupied. In this case, the Project would have a significant impact on this species.

As shown in Table 3.4-7a and Table 3.4-7b, depending on the east-west road extension option and the results of CTS surveys, implementation of the proposed Project could potentially permanently remove and temporarily disturb up to approximately 240 acres of CTS upland habitat and approximately 0.2 acres of potentially suitable aquatic habitat. During construction in upland areas, burrows containing salamanders could be crushed by construction equipment, or salamanders could be displaced from burrows, exposing them to predators and desiccation. Trenches or pits left open during the night could trap salamanders moving through the construction area.

Table 3.4-7a. El Charro Specific Plan, Potential Impacts on California Tiger Salamander Habitat, Jack London Boulevard Extension Option

Impact Cause	impact	Suitable Breeding Habitat	North Upland Potential Habitat	South Upland Potential Habitat	Total
Johnson-Himsl Property Development	perm	–	53.51	–	53.51
Roger Johnson Property Development	perm	–	15.07	–	15.07
Crosswinds Church Property Development	perm	–	22.81	–	22.81
Sywest Property Development	perm	–	0.08	–	0.08
Children's Hospital Property Development	perm	–	12.98	–	12.98
Children's Hospital Property Bridges	perm	–	0.65	0.15	0.80
Children's Hospital Overflow Channel	perm	–	–	0.77	0.77
Children's Hospital Property Fill	perm	–	–	4.67	4.67
Private Parking	perm	–	2.88	–	2.88
El Charro Road Widening	perm	–	3.68	–	3.68
North Overbank Channel	perm	–	1.93	–	1.93
Water Quality Basin	perm	–	8.68	–	8.68
Detention Basin	perm	–	–	37.03	37.03
Golf Course Modifications	perm	0.17		15.30	15.47
City Open Space	perm		14.26	9.78	24.04
Public Parking	perm		3.51		3.51
Jack London Boulevard Extension and Internal Roads	perm	–	17.34	12.27	29.61
Jack London Boulevard Extension and Internal Roads	temp	–	1.51	2.80	4.31
Subtotal	*perm*	*0.17*	*157.38*	*79.97*	*237.52*
Subtotal Temporary	*temp*	*0.00*	*1.51*	*2.80*	*4.31*
Grand Total:		0.17	158.89	82.77	241.83

Notes:

1. CTS surveys to date on the Johnson-Himsl property have been negative. Suitable breeding habitat is a seasonal wetland in a ditch west of the golf course that has not yet been confirmed as suitable because of a lack of data on ponding duration at this time. If the seasonal wetland is determined not to be suitable habitat, then the upland areas identified above would not be considered as CTS upland habitat.

2. Potential upland habitat includes fallow fields, grassland, and disced agricultural fields that are heavily disturbed, but it does not include developed areas or golf course turf. Migration from potential suitable habitat in seasonal wetlands south of the Arroyo Las Positas may be impeded by flows and steep creek banks. Migration from north of I-580 to the Project Area may be impeded by existing culverts, creek flows, and steep creek banks.

Table 3.4-7b. El Charro Specific Plan, Potential Impacts on California Tiger Salamander Habitat, Airway Boulevard Extension Option

Impact Cause	Impact	Suitable Breeding Habitat	North Upland Potential Habitat	South Upland Potential Habitat	Total
Johnson-Himsl Property Development	perm	–	55.12	–	55.12
Roger Johnson Property Development	perm	–	15.07	–	15.07
Crosswinds Church Property Development	perm	–	23.30	–	23.30
Sywest Property Development	perm	–	0.23	–	0.23
Children's Hospital Property Development	perm	–	11.00	–	11.00
Children's Hospital Property Bridges	perm	–	0.35	0.15	0.50
Children's Hospital Overflow Channel	perm	–	–	0.77	0.77
Children's Hospital Property Fill	perm	–	–	4.67	4.67
Private Parking	perm	–	2.83	–	2.83
El Charro Road Widening	perm	–	3.68	–	3.68
North Overbank Channel	perm	–	2.09	–	2.09
Water Quality Basin	perm	–	12.55	–	12.55
Detention Basin/Golf Course Modification	perm	–	–	37.03	37.03
Golf Course Modifications	perm	0.17		28.80	28.97
New Sewer Main	temp			1.02	1.02
City Open Space	Perm		11.30	9.85	21.16
Public Parking	perm		3.60		3.60
Airway Boulevard Extension and Internal Roads	perm	–	17.65	–	17.65
Airway Boulevard Extension and Internal Roads	temp	–	2.44	–	2.44
Subtotal	*perm*	*0.17*	*158.77*	*81.27*	*240.21*
Subtotal	*temp*	*0.00*	*2.44*	*1.02*	*3.46*
Total:		0.17	161.21	82.29	243.67

Notes:

1. CTS surveys to date on the Johnson-Himsl property have been negative. Suitable breeding habitat is a seasonal wetland in a ditch west of the golf course that has not yet been confirmed as suitable because of a lack of data on ponding duration at this time. If the seasonal wetland is determined not to be suitable habitat, then the upland areas identified above would not be considered as CTS upland habitat.

2: Potential upland habitat includes fallow fields, grassland, and disced agricultural fields that are heavily disturbed, but it does not include developed areas or golf course turf. Migration from potential suitable habitat in seasonal wetlands south of the Arroyo Las Positas may be impeded by flows and steep creek banks. Migration from north of I-580 to the Project Area may be impeded by existing culverts, creek flows, and steep creek banks.

CTS is listed as a federally threatened species. Any project activities that could result in "take" of CTS, as defined under the ESA, would require formal consultation with the USFWS. This impact is considered potentially significant. The following measures should be implemented to minimize and compensate for project impacts on CTS and reduce this impact to less than significant.

Mitigation Measure BIO-4a: Complete Protocol Surveys for California Tiger Salamander

A qualified biologist with authorization from the USFWS will complete protocol-level surveys to determine whether CTS is present in the identified suitable seasonal wetland habitat or in potential upland habitat outside the areas already surveyed. If CTS is found, Mitigation Measure BIO-4a will be required.

Alternately, project proponents may choose to assume that the relevant water bodies and upland habitat are occupied by CTS. In this case, protocol-level surveys would not be required, but consultation with the USFWS and Mitigation Measure BIO-4b would be required to ensure that the Project would not significantly affect this species.

Mitigation Measure BIO-4b: Compensate for the Loss and Disturbance of California Tiger Salamander Habitat

Given the location of the seasonal wetland suitable habitat and the level of proposed and adjacent development, avoidance of the potential aquatic and upland habitat would make it infeasible to implement development of the Specific Plan Area. Thus, avoidance or minimization of impacts is considered infeasible, and conversion of the potential habitat would be necessary to achieve the project objectives.

Where CTS is determined or presumed to be present in the Project Area, project proponents will preserve and create additional habitat for the CTS using the minimum compensation ratios as described below. If CTS are not found or determined to be present, then compensation will not be required.

For impacts on upland habitat, the project proponents will preserve suitable upland habitat at a ratio of 1:1 for both permanent and temporary impacts due to the degraded nature of the upland habitat.

This mitigation may involve one of the following options:

- purchasing mitigation credits at an existing mitigation bank if approved by the USFWS (the Ohlone Preserve Conservation Bank in Sunol has CTS mitigation credits presently available);
- establishing a CTS habitat preserve or creating vernal pool habitat at an existing conservation area (assuming that conservation area has been approved by the USFWS as suitable CTS habitat);

- establishing a new CTS habitat preserve and preserving or creating CTS habitat at that location (the creation of a new preserve would require preparation of a management plan and approval by the USFWS); or
- paying sufficient funds into a USFWS-approved species fund to support habitat preservation and restoration for this species.

Final compensation requirements and mitigation ratios for the proposed project will be determined through consultation with the USFWS. The exact cost to purchase preservation and creation credits for project-related impacts will be determined at the time of purchase. Mitigation credits will be purchased, or a conservation area and management plan will be established, prior to any ground disturbing activities, including grading, in the Project Area.

This mitigation may be combined with mitigation for CRLF, provided that the full ratios for compensation are achieved.

Mitigation Measure BIO-4c: Monitor Construction Activities within California Tiger Salamander Habitat and, if Found, Cease Construction Activities until the Salamander Has Been Removed

The project proponents shall retain a qualified wildlife biologist to monitor all construction activities within CTS upland habitat. The biologist will look for CTS during grading, excavation, and vegetation removal activities. If CTS is discovered, construction activities shall cease until the salamander has been removed from the construction area and released near a suitable burrow at least 300 feet away from the construction area.

Impact BIO-5: Potential Loss or Disturbance of Western Pond Turtles—Less than Significant with Mitigation

Construction activities associated with the proposed Project could result in the disturbance to or loss of western pond turtles. A western pond turtle was observed at the Arroyo Las Positas in the Project Area. Activities associated with road and bridge construction could result in the loss or disturbance of western pond turtles and their habitat. This impact is considered potentially significant but would be reduced to a less-than-significant level by implementation of the following mitigation measures.

Mitigation Measure BIO-5: Conduct a Preconstruction Survey for Western Pond Turtles

To avoid and minimize impacts on western pond turtles, the project proponents shall retain a qualified wildlife biologist to conduct preconstruction clearance surveys for western pond turtles no more than 48 hours before ground disturbance in aquatic habitats. If a western pond turtle is encountered during any project activities, construction will cease until the turtle leaves the area or is removed by a qualified biologist and relocated to nearby suitable aquatic habitat. If the

construction site will be dewatered, an exclusion fence would be installed at both the upstream and downstream end to keep turtles from moving through the construction area.

Mitigation Measure BIO-7a: Design, Fund, and Implement the Arroyo Las Positas Habitat Enhancement Plan to Enhance, Re-create, or Restore Riparian Forest and Grassland Habitat along Portions of the Arroyo Las Positas and Cottonwood Creek

The full text of this measure is included below.

Impact BIO-6: Potential Loss or Disturbance of Breeding or Wintering Burrowing Owl—Less than Significant with Mitigation

Project construction would result in the disturbance or loss of annual grasslands and alkali grasslands, which provide burrowing owl nesting and foraging habitat. Active burrowing owl burrows were found along Jack London Boulevard west of Isabel Avenue. Construction activities could result in the removal of an occupied burrowing owl breeding or wintering burrow site and the loss of burrowing owl adults, young, or eggs. If burrowing owls are nesting within the construction area, grading and excavation activities could result in the removal of an occupied burrowing owl breeding or wintering burrow site and the loss of burrowing owl adults, young, or eggs. As stated in the *Staff Report on Burrowing Owl Mitigation*, published by DFG (1995), a site is considered to be occupied if at least one burrowing owl has been observed occupying a burrow within the last 3 years.

Currently, there appear to be no burrowing owls occupying the northern portion of the study area (along the Airway Boulevard Extension alignment), but there are burrowing owls occupying the southern portion of the study area (along the Jack London Boulevard Extension alignment). Because burrowing owls have been documented within the study area, there is potential for burrowing owls to occupy the study area within and adjacent to the Airway Boulevard alignment prior to project construction.

Because burrowing owls have experienced large population declines throughout their range, the loss of burrowing owls and their young or eggs is considered significant, but it would be reduced to a less-than-significant level by implementation of the following mitigation measure. This measure also would ensure compliance with the MBTA.

Mitigation Measure BIO-6: Conduct Preconstruction Surveys for Active Burrowing Owl Burrows and Implement the California Department of Fish and Game Guidelines for Burrowing Owl Mitigation, if Burrows Are Detected in the Survey Area

The *Staff Report on Burrowing Owl Mitigation*, published by DFG (1995), recommends that preconstruction surveys be conducted to locate active Burrowing Owl burrows in the construction area and in a 250-foot-wide buffer zone around the construction area. A qualified wildlife

biologist conducted protocol burrowing owl surveys and found active burrows in the Project Area. Because active burrows were detected, the following measures will be implemented.

Occupied burrows will not be disturbed during the nesting season (February 1–August 31). Whenever avoidance is feasible, no disturbance should occur within 160 feet of occupied burrows during the nonbreeding season (September 1–January 31) or within 250 feet during the breeding season (February 1–August 31).

When destruction of occupied burrows is unavoidable during the non-nesting season (September 1–January 31), unsuitable burrows will be enhanced (enlarged or cleared of debris), or new burrows created (by installing artificial burrows), at a ratio of 2:1 on nearby protected lands approved by DFG. Newly created burrows will follow guidelines established by DFG.

If owls must be moved away from the construction area, passive relocation techniques (e.g., installing one-way doors at burrow entrances) will be used instead of trapping. At least 1 week will be necessary to accomplish passive relocation and allow owls to acclimate to alternate burrows.

If owls must be moved away from the construction area, the project proponents will either purchase mitigation credits at a DFG-approved bank (such as the Haera Mitigation Bank east of Livermore) or coordinate with DFG to acquire and permanently protect the specified amount of foraging habitat per occupied burrow identified in the construction area (as identified in the *Staff Report*). The protected lands should be located adjacent to the occupied burrowing owl habitat in the study area or at another occupied site near the study area, as determined by DFG. The project proponents also will prepare a monitoring plan and provide long-term management and monitoring of the protected lands. The monitoring plan will specify success criteria, identify remedial measures, and require an annual report to be submitted to DFG.

Impact BIO-7: Potential Disturbance or Loss of Riparian Habitat—Less than Significant with Mitigation

Construction activities associated with the proposed Project could result in the temporary and permanent disturbance or loss of up to 1 to 2 acres of open water and riparian habitat that is located along the Arroyo Las Positas and Cottonwood Creek in the study area with either east-west road option. An additional one-third of an acre would be disturbed if Cottonwood Creek were realigned to facilitate the Airway Boulevard Extension. Riparian trees and shrubs could be removed during construction of the roadway. The loss or degradation of riparian habitat would result in degradation of sensitive plant communities, fragmentation or isolation of important wildlife habitats, or disruption of natural wildlife movement corridors. Because of its rarity, biological importance, and sensitivity to disturbance, any impacts are typically considered significant. This impact is

considered significant but would be reduced to a less-than-significant level by implementation of the following mitigation measures.

Mitigation Measure BIO-7a: Design, Fund, and Implement the Arroyo Las Positas Habitat Enhancement Plan to Enhance, Re-create, or Restore Riparian Forest and Grassland Habitat along Portions of the Arroyo Las Positas and Cottonwood Creek

Project proponents will compensate for the permanent and temporary loss of riparian forest habitat and upland grassland habitat along the Arroyo Las Positas and Cottonwood Creek through on-site restoration/creation of forested riparian habitat. Compensation will be provided at a minimum ratio of 1:1 (1 linear foot restored or created for every linear foot removed). Restoration activities will occur after construction.

This mitigation also is designed to partially mitigate for project impacts on CRLF, western pond turtle, riparian birds, and wildlife migration. At this time, it is estimated that this mitigation may result in the restoration of approximately 1,000 linear feet along Arroyo Las Positas between the western end of the golf course and the fish ladder, restoration of areas on the Children's Hospital site where existing bridges and a culvert are removed, and perhaps up to 500 feet of restored vegetation along a realigned portion of Cottonwood Creek (with the Airway Boulevard Extension option only).

The City will retain a qualified restoration ecologist to develop a conceptual restoration and monitoring plan that describes how riparian habitat will be enhanced or re-created and monitored over a minimum period of time. The conceptual plan will be designed such that it will meet the success criteria given below.

The revegetation/restoration plan for riparian habitats will be considered successful when the following criteria are met.

- The four existing bridges and culvert on the Children's Hospital property are removed, and riparian habitat is restored where the new bridges do not occur at the same locations.
- Arroyo Las Positas between the fish ladder and the westernmost extent of the existing golf course is restored per the requirements below.
- If Cottonwood Creek is realigned to support road construction, then the realigned creek shall be designed in such as way that the realigned section has equivalent functions and values (including CRLF aquatic habitat) to that existing at present.
- The upland area within the mandated 100-foot setback (most areas), 50-foot setback (northwest parcel on Children's Hospital property), and 150-foot setback (opposite the 50-foot setback) will be restored

to annual grassland or native scrub/shrub habitat in accordance with the overall restoration plan.

- The restored site is composed of a mix of species similar to that removed during the construction activity and/or appropriate reference sites along the two creeks.
- The restored sites have at least 75% of the absolute cover of native vegetation present in areas adjacent to the construction corridor or otherwise considered appropriate reference sites.
- Plantings are self-sustaining without human support (e.g., weed control, rodent and deer control, and irrigation).
- Functions and values of the restored habitat are comparable to those of adjacent undisturbed riparian habitat.
- Riparian cover along the project reach is equal to or greater than that extant at present.

After restoration and revegetation are completed, monitoring will be conducted for a minimum of 5 years to ensure that the success criteria identified below are met and to identify any necessary remedial actions. The City will be responsible for ensuring that the restoration and monitoring plan is implemented. Remedial action will be required if any of the above criteria are not met during the monitoring period. The purpose of the remedial action is to ensure that the above criteria are met.

Mitigation Measure BIO-7b: Maintain Riparian Habitat along the Arroyo Las Positas within Las Positas Golf Course during Course Redesign

During the redesign of the golf course, the City will maintain the overall existing amount of riparian cover along the Arroyo Las Positas by replacing any disturbed riparian vegetation on a 1:1 basis along the golf course reach onsite if possible and offsite if onsite restoration is not possible. As feasible with the need for golf course access, a 100-foot buffer between the banks of the Arroyo Las Positas and the nearest redesigned fairway, tee, green or access road shall be maintained for all new holes and construction.

Impact BIO-8: Potential Disturbance or Loss of Waters of the United States (Including Wetlands) and Nonjurisdictional Waters—Less than Significant with Mitigation

Construction activities associated with the proposed Project could result in the disturbance or loss of jurisdictional waters of the United States and nonjurisdictional waters regulated by the SFBRWQCB. Impacts on waters are summarized in Table 3.4-8.

Depending on the east-west road option and golf course redesign, between 0.7 acre and 2 acres of seasonal wetland swales (wetlands), riverine wetlands (wetlands), and creeks (other waters) could be potentially impacted and are potentially subject to the jurisdiction of the USACE. Depending on the east-west

road option and golf course redesign, between 1.5 and 2 acres of seasonal wetlands and emergent wetlands potentially could be impacted and potentially are subject to the jurisdiction of the SFBRWQCB.

Though approximately 1 to 3 acres of golf course ponds could be removed by the Project, the removal of these ponds as ponds alone is considered a less-than-significant impact because of the limited habitat value of these ponds to other species. However, as noted above under the discussion of impacts to CRLF, the golf course ponds are considered low quality aquatic habitat for CRLF and thus for their species impact, removal of these ponds is considered a significant impact and mitigation for CRLF impacts is required as discussed above.

Wetlands and waters provide important habitat functions. Impacts on wetlands resulting from the implementation of construction activities may include the removal or filling of wetlands. Impacts on other waters may include the deposition of fill into the creek or riprap along the stream banks. The loss or degradation of wetland habitat would result in the degradation of sensitive plant communities, the fragmentation or isolation of important wildlife habitats, or the disruption of natural wildlife movement corridors. Because of its rarity, biological importance, and sensitivity to disturbance, any impacts are typically considered significant. This impact is considered significant but would be reduced to a less-than-significant level by the implementation of the following mitigation measure:

Mitigation Measure BIO-7a: Design, Fund, and Implement the Arroyo Las Positas Habitat Enhancement Plan to Enhance, Re-create, or Restore Riparian Forest and Grassland Habitat along Portions of the Arroyo Las Positas and Cottonwood Creek

The full text of this measure is included above.

Mitigation Measure BIO-7b: Maintain Riparian Habitat along the Arroyo Las Positas within Las Positas Golf Course during Course Redesign

The full text of this measure is included above.

Mitigation Measure BIO-8a: Avoid and Minimize the Disturbance of Waters of the United States

To the extent possible, the City and project proponents will minimize impacts on waters of the United States by implementing all of the following measures:

- Construction activities in saturated or ponded waters during the wet season (spring and winter) will be avoided to the maximum extent possible.
- During construction, trees, shrubs, debris, or soils that are inadvertently deposited will be removed in a manner that minimizes disturbance to the creek and wetlands.

Table 3.4-8. El Charro Specific Plan Impacts on Jurisdicitional and Nonjurisdictional Waters and Wetlands

		Nonjurisdictional (acres)				Jurisdictional (acres)				
Impact Cause	Type	Seasonal Wetland	Emergent Marsh	Open Water	Subtotal	Other Waters	Riverine Wetland	Seasonal Wetland	Subtotal	Total (acres)
Prime Outlets Project	perm	1.24	–	–	1.24	–	–	–	0.00	1.24
Prime Outlets Outlet to the Arroyo	perm	–	–	–	0.00	0.01	–	–	0.01	0.01
Prime Outlets Outlet to the Arroyo	temp	–	–	–	0.00	0.08	–	–	0.08	0.08
Development on Crosswinds Church Property	perm	0.02	–	–	0.02	–	–	–	0.00	0.02
Children's Hospital Site Potential Bridges	perm	–	–	–	0.00	–	–	–	0.00	0.00
Children's Hospital Site Potential Bridges	temp	–	–	–	0.00	0.21	–	–	0.21	0.21
Children's Hospital Overflow Channel	perm	–	–	–	0.00	0.05	–	–	0.05	0.05
North Bank Overflow/Water Quality Basin	perm	0.04	–	–	0.04	0.03	–	–	0.03	0.07
North Bank Overflow/Water Quality Basin	temp	–	–	–	0.00	0.10	–	–	0.10	0.10
Detention Basin—Permanent	perm	–	–	–	0.00	0.03	–	–	0.03	0.03
Detention Basin—Temporary	temp	–	–	–	0.00	0.10	–	–	0.10	0.10
El Charro Road Widening	perm	0.28	–	–	0.28	–	–	–	0.00	0.28
Jack London Boulevard Extension Option										
Jack London Boulevard and Internal Roads	perm	0.20	0.12	0.81	1.12	0.09	–	–	0.09	1.21
Jack London Boulevard and Internal Roads	temp	0.01	0.02	0.16	0.19	0.01	–	–	0.01	0.20
Jack London Golf Course Modifications	perm	*0.01*		*2.27*	*2.28*					*2.28*
Permanent	perm	*1.79*	*0.12*	*3.08*	*4.98*	*0.21*	*0.00*	*0.00*	*0.21*	*5.20*
Temporary	temp	*0.01*	*0.02*	*0.16*	*0.19*	*0.49*	*0.00*	*0.00*	*0.49*	*0.68*
All		**1.80**	**0.14**	**3.24**	**5.18**	**0.70**	**0.00**	**0.00**	**0.70**	**5.88**
Airway Boulevard Extension Option										
Airway Boulevard and Internal Roads	perm	0.04	–	–	0.04	0.41	0.17	0.00	0.57	0.61
Airway Boulevard and Internal Roads	temp	0.01	–	–	0.01	0.25	0.01	–	0.26	0.27
Golf Course Modifications	perm			*1.27*	*1.27*	*0.25*	*0.34*		*0.59*	*1.86*
Permanent	perm	*1.62*	*0.00*	*1.27*	*2.89*	*0.78*	*0.51*	*0.00*	*1.29*	*4.18*
Temporary	temp	*0.01*	*0.00*	*0.00*	*0.01*	*0.73*	*0.01*	*0.00*	*0.74*	*0.75*
All		**1.63**	**0.00**	**1.27**	**2.90**	**1.51**	**0.52**	**0.00**	**2.03**	**4.93**

Note:

"Jurisdictional" refers to whether the USACE likely would have jurisdiction under Section 404 of the CWA. Nonjurisdictional wetlands are under the separate state jurisdiction of the SFBRWQCB. Open water areas consist of golf course ponds, which are unlikely to be under regulatory jurisdiction, though this has yet to be confirmed.

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- All construction-related activities will be completed promptly to minimize their duration and resulting impacts.
- Construction inspectors will routinely inspect protected areas to ensure that protective measures are in place and effective.
- All protective measures will remain in place until all construction activities near the resource have been completed and will be removed immediately following construction activities.
- All new bridges will be free span (with the exception of the Airway Boulevard Extension as discussed below) and will avoid placement of permanent fill within the banks of the Arroyo Las Positas and Cottonwood Creek.
- Cottonwood Creek will not be realigned to facilitate development, but may be allowed for the Airway Blvd. Extension, if this road option is selected. If the creek is realigned to support road construction, then the realigned creek shall be designed in such as way that the realigned section has equivalent functions and values (including CRLF aquatic habitat) to that existing at present. The City shall also provide off-site compensation for all temporarily affected waters/wetlands and CRLF habitat at a minimum 1:1 ratio (1 acre preserved to one acre temporary affected).

Mitigation Measure BIO-8b: Implement Resource Protection/Impact Minimization Measures Identified in Federal, State, and Local Permits

Before any construction activities are initiated and designs are finalized, the City and/or project proponents will obtain the following permits:

- CWA 404 NWP from the USACE;
- CWA 401 water quality certification from the regional water quality control board (RWQCB) (all Section 404 permits require Section 401 water quality certification);
- CWA 402/National Pollutant Discharge Elimination System (NPDES) permit from California State Water Resources Control Board (SWRCB), requiring preparation of a stormwater pollution prevention plan (SWPPP)—only if greater than 1 acre of disturbance;
- report of waste discharge to obtain waste discharge requirements (WDRs), depending on RWQCB requirements (to be applied with the 401);
- California Fish and Game Code 1602 streambed alteration agreement from DFG; and
- a biological opinion or letter of concurrence from the USFWS through ESA Section 7 with the USACE as the federal lead agency, if it is determined that there could be adverse effects on federally threatened or endangered species.

Copies of these permits will be provided to the contractor with the construction specifications. The City and/or project proponents will be responsible for ensuring compliance with the conditions set forth in these permits.

Mitigation Measure BIO-8c: Compensate for the Loss of Waters of the United States

The City and/or project proponents will compensate for permanent impacts on waters of the United States and waters of the state, as determined by the USACE and SFBRWQCB (respectively), to ensure no net loss of habitat functions and values. The compensation will be provided at a minimum ratio of 1:1 (1 acre restored or created for every 1 acre filled), but final compensation ratios will be based on site-specific information and determined through coordination with federal and state agencies as part of the permitting process for the Project. Compensation may be a combination of on-site restoration and creation, off-site restoration, or mitigation credits. Compensation may be combined with mitigation for CRLF and CTS as noted above. Mitigation Measure BIO-7a may be used to fulfill this requirement partially or completely for wetlands and waters associated with the Arroyo Las Positas and Cottonwood Creek, as allowed by the USACE.

Impact BIO-9: Potential Loss or Disturbance of Tree, Shrub, and Ground Nesting Migratory Birds and Raptors—Less than Significant with Mitigation

The Project would result in the disturbance or removal of riparian woodland and annual grassland in the study area. Trees and shrubs in these areas provide potential nesting habitat for special-status birds and raptors, such as loggerhead shrike, tricolored blackbird, and state fully protected white-tailed kite. Trees and shrubs in the study area also can provide nesting habitat for a number of common migratory birds and raptors, including western bluebird (*Sialia Mexicana*), lesser goldfinch (*Carduelis psaltria*), American goldfinch (*Carduelis tristis*), tree swallow (*Tachycineta bicolor*), acorn woodpecker, American kestrel, red-shouldered hawk, red-tailed hawk, and great horned owl.

If construction occurs during the breeding season (generally between March 1 and August 15), construction activities (e.g., tree and shrub removal, excavation, and grading) that occur within the study area could disturb or remove occupied nests of listed and non-listed migratory birds and raptors. This disturbance could cause nest abandonment and subsequent loss of eggs or developing young at active nests located in or near the study area. All migratory birds and raptors are protected under the MBTA and California Fish and Game Code 3503 and 3503.5.

This impact is considered potentially significant if the Project could result in the loss of a special-status species. Removal of an active nest and loss of eggs or young of a migratory bird also would violate the MBTA and California Fish and Game Code. Implementation of the following mitigation measures would reduce this impact to a less-than-significant level and avoid violating the MBTA and California Fish and Game Code.

Mitigation Measure BIO-7a: Design, Fund, and Implement the Arroyo Las Positas Habitat Enhancement Plan to Enhance, Re-create, or Restore Riparian Forest and Grassland Habitat along Portions of the Arroyo Las Positas and Cottonwood Creek

The full text of this measure is included above.

Mitigation Measure BIO-7b: Maintain Riparian Habitat along the Arroyo Las Positas within Las Positas Golf Course during Course Redesign

The full text of this measure is included above.

Mitigation Measure BIO-9: Avoid Disturbance of Tree-, Shrub-, and Ground-Nesting Migratory Birds and Raptors

Causing the abandonment or removing active nests (with eggs or young) of loggerhead shrike, tricolored blackbird, and state fully protected white-tailed kite, and non-special-status migratory birds and raptors violates the California Fish and Game Code and the federal MBTA. To avoid this impact, one or more of the following options will be implemented as part of the proposed Project.

- If construction activities are scheduled to occur during the breeding season for these species (generally between March 1 and August 15), a qualified wildlife biologist will be retained to conduct the following focused nesting surveys within the appropriate habitat.
  - Tree and shrub nesting surveys will be conducted in riparian and woodland habitats within or adjacent to the construction work area to look for white-tailed kite, loggerhead shrike, tricolored blackbird and other non-listed migratory birds and raptors.
  - Ground-nesting surveys will be conducted in annual grasslands and alkali grasslands within and adjacent to the construction work area to look for non-listed migratory birds.

  The surveys should be conducted within 1 week prior to initiation of construction activities and at any time between March 1 and August 15. If no active nests are detected during surveys, then no additional mitigation is required.

- If construction activities are scheduled to occur during the breeding season (generally between March 1 and August 15) and if surveys indicate that migratory bird or raptor nests are found in any areas that would be directly affected by construction activities, a no-disturbance buffer will be established around the site to avoid disturbance or destruction of the nest site until after the breeding season or after a wildlife biologist determines that the young have fledged (usually late-June to mid-July). The extent of these buffers will be determined by a wildlife biologist and will depend on the level of noise or construction disturbance, line of sight between the

nest and the disturbance, ambient levels of noise and other disturbances, and other topographical or artificial barriers. These factors should be analyzed in order to make an appropriate decision on buffer distances.

- If construction activities begin prior to the breeding season (i.e., if construction activity begins between August 16 and February 28), then construction can proceed until it is determined that an active migratory bird or raptor nest is subject to abandonment as a result of construction activities. Construction activities should be in full force, including, at a minimum, grading of the site and development of infrastructure. A minor activity that initiates construction but does not involve the full force of construction activities will not qualify as "pre-existing construction." Optimally, all necessary vegetation removal should be conducted prior to the breeding season (generally between March 1 and August 15) so that there is no potential for nesting birds or raptors to occur in the construction area. If any birds or raptors nest in the vicinity of the Project under this pre-existing construction condition, then it is assumed that they are habituating or will habituate to the construction activities. Under this scenario, the preconstruction survey still should be conducted on or after March 1 to identify any active nests in the vicinity, and active sites should be monitored by a wildlife biologist periodically until after the breeding season or after the young have fledged (usually late-June to mid-July). If active nests are identified in or immediately adjacent to the Project Area, then all nonessential construction activities (e.g., equipment storage, meetings, etc.) should be avoided in the immediate vicinity of the nest site; however, construction activities can proceed.

Impact BIO-10: Potential Disturbance or Loss of Wildlife Movement Corridors—Less than Significant with Mitigation

Construction activities associated with the proposed Project could result in the temporary disturbance or loss of up to 1 to 2 acres of riparian habitat that is located along the Arroyo Las Positas and Cottonwood Creek in the study area. Riparian trees and shrubs could be removed during construction of the roadway. The loss or degradation of riparian habitat would result in the degradation of sensitive plant communities, the fragmentation or isolation of important wildlife habitats, or the disruption of natural wildlife movement corridors. Because of its rarity, biological importance, and sensitivity to disturbance, any impacts are typically considered significant. This impact is considered significant but would be reduced to a less-than-significant level by implementation of the following mitigation measures.

Mitigation Measure BIO-7a: Design, Fund, and Implement the Arroyo Las Positas Habitat Enhancement Plan to Enhance, Re-create, or Restore Riparian Forest and Grassland Habitat along Portions of the Arroyo Las Positas and Cottonwood Creek

The full text of this measure is included above.

Mitigation Measure BIO-7b: Maintain Riparian Habitat along the Arroyo Las Positas within Las Positas Golf Course during Course Redesign

The full text of this measure is included above.

Impact BIO-11: Potential Disturbance or Loss of Protected Trees—Less than Significant with Mitigation

Construction activities associated with the proposed Project potentially could result in the disturbance or loss of individual protected trees. Protected trees could be removed or affected during staging, trimming for equipment access, and other construction-related activities. The loss of trees could conflict with City and County tree ordinances. This impact is considered potentially significant but would be reduced to a less-than-significant level by implementation of the following mitigation measures.

Mitigation Measure BIO-7a: Design, Fund, and Implement the Arroyo Las Positas Habitat Enhancement Plan to Enhance, Re-create, or Restore Riparian Forest and Grassland Habitat along Portions of the Arroyo Las Positas and Cottonwood Creek

The full text of this measure is included above.

Mitigation Measure BIO-7b: Maintain Riparian Habitat along the Arroyo Las Positas within Las Positas Golf Course during Course Redesign

The full text of this measure is included above.

Mitigation Measure BIO-11: Redesign Project or Compensate for Removal of Protected Trees

To the maximum extent feasible, the project design will avoid the loss of any street tree or designated ancestral tree within the city or any tree outside the city that is within the County right of way that is part of a large group of healthy, mature trees or is of considerable size and age.

As part of the project design, the City and/or project proponents will retain a certified arborist to conduct a tree survey of the proposed project corridor, including potential contractor laydown areas, and identify and evaluate trees, including any ancestral trees as identified by the City, that will be removed. If the arborist's survey does not identify any protected trees or known ancestral or specimen trees that would be removed or damaged as a result of the proposed Project, no further mitigation is necessary.

For any street tree or designated ancestral tree within the city, and any tree outside the city that is within the County right-of-way, that is part of a large group of healthy, mature trees or is of considerable size and age and will be removed as a result of the proposed Project, the City will ensure that replacement trees are planted in the proposed project corridor. At a minimum, each removed tree that is at least 4 inches in

diameter at breast height will be replaced with either: (1) one replacement tree of 24-inch box size, or (2) three replacement trees of 15-gallon size. Replacement trees will belong to a native species such as valley oak (*Quercus lobata*) or other appropriate species native to the Livermore area. Trees will be planted in close proximity to removal sites, in locations suitable for the replacement species. The selection of replacement sites and the installation of replacement plantings will be supervised by a qualified botanist. Newly planted trees will be monitored by a qualified botanist at least once a year for 5 years. Each year, any trees that do not survive will be replaced. Any trees planted as remediation for failed plantings will be planted as stipulated here for original plantings and will be monitored for a period of 5 years following installation. Tree replacement will occur after project completion.

Impact BIO-12: Conflicts with Applicable Habitat Conservation Plan or Natural Community Conservation Plan—No Impact

The Specific Plan Area is not located within habitat conservation plan or natural community conservation plan areas. Therefore, there would not be a potential conflict with such conservation plans, and there would be no impact.

Impact BIO-13: Potential Golf Course Redesign Impacts on Biological Resources—Mitigable to Less than Significant

The implementation of one of the two east-west roadway extensions will require the permanent use of active parts of the existing Las Positas Golf Course. Depending on the redesign layout of the golf course, it is possible that there will be additional impacts on biological resources in the existing golf course area and/or in new areas of the golf course.

The existing golf course fairways, tees, and greens provide limited habitat for sensitive biological species. However, the Arroyo Las Positas provides habitat for CRLF, western pond turtle, and riparian-associated bird species. In addition, though degraded, golf course ponds provide aquatic habitat for CRLF and tricolored blackbird, where emergent vegetation is present. Raptors and other bird species may nest in mature trees throughout the golf course.

With the Jack London Extension, new golf course holes would be located on City-owned property south of the golf course and west of the airport. With the Airway Blvd. Extension, new golf course holes would be located in the same area and also in land to the west of the golf course south of Arroyo Las Positas. These lands provide suitable upland habitat for burrowing owl, small areas of suitable upland habitat along the Arroyo Las Positas for CRLF, and potential upland habitat for CTS (depending on the results of protocol surveys). These lands, based on surveys conducted for this EIR, are unlikely to support special-status plant species.

The redesign of the golf course with the Airway Blvd. Extension would be more extensive than with the Jack London Extension and would also require relocation of two holes, a water hazard, and the driving range within the existing golf course itself (see Chapter 2, “Project Description”). Grading and vegetation removal

would affect additional riparian vegetation along Arroyo Las Positas and removal of landscape trees within the golf course.

Thus, construction of a redesigned golf course could have significant impacts on CRLF, CTS, western pond turtle, tricolored blackbird, burrowing owl, and nesting birds. The level of impacts will depend on the actual areas of construction and new golf course holes. These impacts can be mitigated to a less-than-significant level through the application of the relevant mitigation measures described above for the project.

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3.5 Cultural Resources

This section discusses the potential for the proposed Project to affect cultural resources. It summarizes the history of the project region; describes the findings and conclusions of previous studies relevant to the proposed Project; identifies the effects of the proposed Project on cultural resources; and identifies mitigation measures available to reduce effects on significant cultural resources.

Cultural resource is the term used to describe several different types of properties: prehistoric and historical archaeological sites, and locations of importance to Native Americans, as well as architectural properties, such as buildings, bridges, and infrastructure.

Historical resource is a CEQA term that includes buildings, sites, structures, objects, or districts that may have historical, prehistoric, architectural, archaeological, cultural, or scientific importance and are eligible for listing or are listed in the California Register of Historical Resources (CRHR).

Environmental Setting

Cultural Setting

The following brief discussions are condensed from the technical report (Jones & Stokes 2006b) prepared for the proposed Project. The study area for cultural resources is equivalent to the Project Area as shown in Figure 2-2.

Prehistoric Setting

Investigations at sites throughout the Livermore Valley show that archaeological remains often are buried deep under alluvium. Several investigations in the Amador-Livermore Valley area in the past 20 years serve as the basis for the local archaeological sequence, including CA-Ala-13 (Wiberg 1988), CA-Ala-483 (Bard et al. 1992; Wiberg et al. 1997), CA-Ala-555 (Wiberg 1995), CA-Ala-42 (Wiberg et al. 1997), and CA-Ala-46 (Fong et al. 1991; Ambro 1993).

Investigations at CA-Ala-483 provide the earliest evidence for occupation in the area, with radiocarbon dates of 3370 BC to 1320 BC (Middle Archaic Period/Early Horizon). Obsidian hydration studies conducted by Basin Research Associates revealed a date of 2650 BC (Bard et al. 1992). Data gathered at CA-Ala-483 from faunal remains of mammals, birds, and fish, in addition to the presence of shaped mortars and pestles, suggests a concentration on acorn processing (Wiberg et al. 1998). No shell bead or ornaments were identified, and flaked stone tools were made primarily from local materials such as chert, while the recovered obsidian originated from Napa Valley sources (Wiberg et al. 1998).

Subsequent investigations in the area around CA-Ala-483 and the data from Basin Research Associates (Bard et al. 1992) reveal that the early occupation of CA-Ala-483 was characterized by a wetlands and upland hunting-collecting subsistence pattern, lacking marine or freshwater shellfish remains (Wiberg et al. 1998).

The Middle Period of the Amador-Livermore Valley is represented by sites such as CA-Ala-394. Research at this site recovered an artifact assemblage including stone and bone tools, and dorsally extended burials, which indicate a relationship with the Windmiller Pattern of the lower Sacramento Valley/Delta region (Wiberg et al. 1998). An upper component of another site, CA-Ala-413, appears to characterize the Meganos Aspect and indicate that the population was involved in complex trade networks and social life during this period, as implied by the presence of charmstones, ceremonial chert and obsidian points, and bone artifacts (Wiberg et al. 1998).

Sites from the Late or Emergent Period (1200–1777 AD) in the Amador-Livermore Valley generally reveal a greater diversity and intensification of resource exploitation (Wiberg et al. 1998). Sites from this period produced evidence of reliance on seeds, deer, rodents, rabbits, and birds, with obsidian as the primary material used for flaked stone tools, which tend to be smaller than those associated with earlier period sites.

Ethnographic Setting

The study area is located within the ancestral territory of the Ohlone. Historically, the Ohlone were called the Costanoan Indians. Costanoan is the name assigned to the group by the Spanish and is derived from the word *costaños* ("people of the coast"). The term *Ohlone* is preferred by the present-day members of the group.

The Ohlone are believed to have inhabited the area since 500 AD or earlier. Their territory extended along the coast from San Francisco Bay in the north to just beyond Carmel in the south and as much as 60 miles inland. The Ohlone are a linguistically defined group speaking eight different but related languages and comprising several autonomous tribelets. The Ohlone languages, together with Miwok, comprise the Utian language family of the Penutian stock (Levy 1978).

The study area was inhabited by the Pelnen tribe of the Ohlone, whose territory included the western Livermore Valley and present-day Pleasanton, extending south to the canyon leading to Sunol Valley and no farther north than Dublin. Another small group, the Caburans, was perhaps a subsidiary village of the Pelnen group (Milliken 1994). The members of both groups were forced to join Mission San Jose between 1798 and 1805.

Historic Setting

The City of Livermore and Livermore Valley (including the proposed Project Area) are located in Alameda County. The County, formed by state officials in 1853, incorporated the western and southern sections of Contra Costa County and part of Santa Clara County. Alvarado served as the original county seat until officials relocated it to San Leandro in 1856 and Oakland in 1873 (the seat remains there) (Hoover et al. 1990).

As early as 1769, Spanish explorer José Francisco Ortega led an expedition through present-day Alameda County. Seven years later, Juan Bautista de Anza and Pedro Font traveled through the region. In the early 1800s, Spain established the Misión del Gloriosísimo Patriarca Señor San José, currently referred to as Mission San Jose, 15 miles northeast of present-day San Jose. Under the direction of Father Fermín Lasuen, Mission San Jose prospered as an agricultural and educational center for the surrounding rural area (Hoover et al. 1990).

Following its establishment in 1796, Mission San Jose used the land now known as the Livermore Valley as grazing land for sheep and cattle. In 1822, Mexico gained independence from Spain. During the 1830s, the missions became secularized, and the Mexican government began allowing its citizens land grants throughout Alta California. In general, Rancho San Ramon, Rancho Santa Rita, Rancho El Valle de San Jose, and Rancho Las Positas make up the Livermore Valley. In 1848, the United States defeated Mexico in the Mexican-American War, and Mexico surrendered Alta California through the Treaty of Guadalupe Hidalgo. That same year, the Gold Rush brought hundreds of immigrants to Alameda County on their way to the gold fields in California. Attracted by the fertile land and mild climate of the East Bay, many chose to stay to start a new life. The area quickly became one of the leading agricultural hubs of California, with agriculture, dairy farming, and livestock grazing serving as the principal industries of the period (Livermore Heritage Guild 2000).

Study Area

A portion of the study area (roughly south of I-580) is located on lands that were originally part of Rancho Santa Rita (directly west of Rancho de Las Positas). Rancho Santa Rita, located on the western edge of the broad Livermore Valley, was granted to José Dolores Pacheco in 1839 and included more than 8,800 acres of excellent grazing land. By 1854, Samuel and J. West Martin purchased roughly 5,000 acres of Rancho Santa Rita. By the 1870s, the Rancho Santa Rita land was further subdivided into smaller portions; as Livermore expanded, the surrounding area grew as well (Alameda County Supervisors 1874; Tribune Publishing Company 1880; Nussbaumer and Boardman 1889; Nussbaumer and Boardman 1900; Hoover et al. 1990).

Subdividing lands continued into the 20th century, and smaller parcels suitable for farming or ranching were created. Popular crops in the region included wheat and barley, and later fruit orchards and grapes. Dairying also became an important industry in the region during the early part of the century. In 1910, Walter Freisman, who had a dairy in Ferndale, moved to the Livermore Valley

area. Freisman shipped his 30 milk cows by steamboat and started a dairy on the land he purchased in the Project Area. During the 1920s, the dairy was known as the Shady Brook Dairy Farm. In 1921, Freisman established a dairy route in Livermore. He died 10 years later, and his sons Ray and Hugh took over dairy operations, renaming the dairy Freisman Brothers Dairy (generally referred to as "Freisman Dairy" in this report). The dairy complex included a creamery, which enabled the company to complete all aspects of milk production, including milking cows, pasteurizing, bottling, and delivering milk to customers. During the 1930s, the business grew steadily. In 1937, the Freismans purchased Eyherabide Dairy, a local operation, and began to supply milk to a larger regional market.

The peak of the dairy industry in the area was between 1940 and 1960. During this period, the Freisman Dairy had five routes in Livermore, Pleasanton, and Dublin, where it delivered milk to homes and schools and sold it in local stores. The dairy complex comprised several buildings, including six residences for workers, four barns, a milk barn, a loading dock, six sheds, two shelter sheds for cattle, and two garages. The dairy had 300 milk cows and roughly 18 employees at its height between 1950 and 1960. The Freisman Dairy became the second-largest in the Livermore area (Holdner's Dairy was the largest). By the 1960s, its milk was distributed to Foremost Dairy and sold in Lucy stores. The dairy's decline began in 1964, when Ray Freisman died. By 1970, Hugh Freisman shut down the creamery. Two years later, he sold the cattle on the farm and stopped bottling and delivering milk. Following the closure of the dairy, Hugh Freisman left the complex and began to rent the worker residences. Over the years, the Freisman Dairy had acquired roughly 97 acres. Although the Freisman family still owns the land on which the dairy complex still stands, most of the pasture land was sold during the 1980s (Haviland 1907; Haviland 1917; *Livermore Herald* 1921, 1932, 1935; Lane and Lane 1988; Schofield pers. comm.; Drummond pers. comm.).

During the 1960s, the City began a large redevelopment project on the eastern edge of the study area, which included the simultaneous construction of Livermore Municipal Airport, Las Positas Golf Course, and the Water Reclamation Plant. The facilities complement each other; the airport and golf course both use water from the reclamation plant. In spite of the growth during the 1960s, throughout most of the 20th century, most of the proposed Project Area remained sparsely settled and maintained a primarily rural character (McCann and Hinkel 1937; U.S. Geological Survey 1961, 1968; Lee 1982).

Regulatory Setting

CEQA requires that public or private projects financed or approved by public agencies assess the effects of the project on historic resources. Historic resources are defined in the State CEQA Guidelines as buildings, sites, structures, objects, or districts that may have historical, architectural, archaeological, cultural, or scientific significance. CEQA states that if a proposed project would cause a substantial adverse change in the significance of a historic resource, alternative

plans or mitigation measures must be considered. However, only significant historical resources need to be addressed.

Historical resources are those eligible for listing or listed in the CRHR (PRC 5020.1[k], 5024.1, and 5024.1[g]). A cultural resource may be eligible for inclusion in the CRHR if it:

- is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
- is associated with the lives of persons important in our past;
- embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
- has yielded, or may be likely to yield, information important in prehistory or history.

Properties that are listed in or eligible for listing in the National Register of Historic Places (NRHP) are considered eligible for listing in the CRHR (PRC 5024.1[d][1]). Generally, properties that are less than 50 years old are not considered eligible for listing in the CRHR. However, because the CRHR regulations do not specify guidance for determining the significance of such properties, the guidance offered for NRHP evaluation typically is applied.

Archaeological resources also may be eligible for listing in the CRHR if they are *unique archaeological resources*. CEQA (PRC 21083.2) states that a unique archaeological resource is an archaeological artifact, object, or site about which it can be clearly demonstrated that, beyond merely adding to the current body of knowledge, there is a high probability that it:

- contains information needed to answer important scientific research questions, and there is a demonstrable public interest in that information;
- has a special and particular quality such as being the oldest of its type or the best available example of its type; or
- is directly associated with a scientifically recognized important prehistoric or historic event or person.

Livermore Planning and Zoning Code

Demolition of any structure(s) over 50 years old requires an evaluation and Certification of Appropriateness per Livermore's zoning codes.

California Senate Bill 18 (Government Code 65352.3)

California Senate Bill (SB) 18 states that prior to the adoption or amendment of a city or county's general plan, the city or county shall consult with California Native American tribes that are on the contact list maintained by the Native American Heritage Commission (NAHC). The intent of SB 18 is to preserve or mitigate impacts on places, features, and objects as defined in PRC 5097.9 and 5097.993 that are located within the city or county's jurisdiction. The bill also states that the city or county shall protect the confidentiality of information concerning the specific identity, location, character, and use of those places, features, and objects identified by Native American consultation. SB 18 applies to all general and specific plans and amendments proposed after March 1, 2005. According to SB18, the City must conduct consultation directly with the NAHC and local Native American representatives and not through a hired consultant. SB 18 consultation is ongoing between the City and local Native American representatives.

Existing Conditions

Methodology

Efforts to locate cultural resources within the study area consisted of conducting a records search and archival research, contacting the NAHC and Native American representatives, and conducting archaeological and architectural inventories.

A records search was conducted on April 6, 2006, for the study area and a half-mile radius around the study area at the Northwest Information Center of the California Historical Resources Information System at Sonoma State University in Rohnert Park. The records search indicated that two previously recorded cultural resources (C-669 and P-01-010526) were located within the study area. Further research indicated that another resource (AM-2) was located in the western portion of the study area. One historic adobe residence that was recommended eligible for listing in the CRHR was located within a half-mile radius of the Project Area (Douglas Herring & Associates 2004).

On May 6, 2006, Jones & Stokes cultural resources specialists contacted the NAHC and requested that they consult their sacred lands file and provide a list of potentially interested Native American representatives in compliance with SB 18. The City must initiate consultation with the Native American groups.

An inventory of the study area was conducted by Jones & Stokes archaeologists and architectural historians in April 2006. During this field inventory, all buildings and structures 50 years old or older were inspected, photographed, and documented using written notes. One property located contained buildings and structures that were more than 50 years old. Located at 1660 Freisman Road, the Freisman Dairy was constructed and began operation in the early 1900s. The

complex consists of 23 structures, including six residences, four barns, a milk barn, a loading dock and other outbuildings. All residential buildings on the property have been altered by the replacement of windows and shed roof additions, and the agricultural buildings have suffered neglect.

The study area was examined for archaeological resources using systematic transects spaced 15 meters apart, and attempts were made to relocate the previously recorded archaeological sites in the area. No previously unrecorded archaeological resources were located as a result of the inventory. Though attempts were made to locate all three previously recorded archaeological sites to assess their condition, only one site (P-01-010526) was located. Site AM-2 is a subsurface site and therefore was not visible on the ground surface. The mapped location of site C-669 was obscured by vegetation, and it was not possible to relocate it. It is possible that sites are located within the study area but lack surficial components. The area is prone to deposition during flood events, and therefore many sites are likely covered by feet of alluvial material.

Known Resources

There are three recorded archaeological sites and one historic architectural resource within the study area.

Architectural Resources

The Freisman Dairy complex located at 1660 Freisman Road (this location is also referred to as the Children's Hospital site in this document) consists of 23 buildings and structures, some of which are more than 50 years old. The earliest structures are the main residence, a large garage, and a barn. This resource is located within the Specific Plan Area. It was evaluated and does not appear to meet the criteria for listing in the CRHR because it lacks integrity necessary to convey significance (Jones & Stokes 2006b).

Archaeological Resources

Three recorded archaeological sites (C-669, P-01-010526, and AM-2) are located within the study area. None of these sites have been evaluated for listing in the CRHR. If it is determined that the proposed Project will impact any of these sites, evaluation will be necessary.

Site C-669 is a prehistoric site located within the Specific Plan Area along the Arroyo Las Positas that was observed in the cutbank and recorded in 1985. Attempts to locate and examine the site during this field inventory were unsuccessful, probably due to heavy vegetation. However, because the vicinity of the mapped location of the site has not been developed, it is likely that the site is still present and intact with surficial evidence obscured by dense vegetation.

Site P-01-010526 is located adjacent to the Jack London Boulevard extension alignment and consists of both prehistoric and historic components. It consists of the remains of a historic farmstead and a prehistoric lithic scatter. The site was

first recorded in 2002 and was located and reexamined on April 26, 2006. The site appears to be intact.

Site AM-2 is a prehistoric site located in the Specific Plan Area. It was discovered during construction activities to realign the Arroyo and excavated in 2004. The site included one human interment, one associated groundstone feature and associated stone tools. Radiocarbon indicated that the interment dated to the Late or Emergent Period (1200–1777 AD). This site is entirely subsurface. Portions of the site may remain in the area but are not visible on the ground surface.

Based upon the distribution of known resources in the study area, the meander of the creek, and the depositional environment of the Project Area, it was determined that a 1,000-foot buffer around the Arroyo Las Positas is highly sensitive for archaeological resources. This highly sensitive area, the Arroyo Las Positas Archaeological Buffer Zone, encompasses most of the study area and includes most of the golf course and portions of the airport. This buffer is an arbitrary delineation and does not imply that areas outside the buffer are not sensitive for archaeological resources. The buffer zone defines an area where there is a high likelihood of disturbing unknown sites during ground-disturbing activities. Areas outside the buffer zone also have potential for disturbance of unknown sites but not as high.

Impact Analysis

Thresholds of Significance

According to CEQA, a project with an effect that may cause a substantial adverse change in the significance of a historical resource is a project that may have a significant effect on the environment (State CEQA Guidelines 15064.5[b]).

The proposed Project would have a significant effect on cultural resources if it would:

- cause a substantial adverse change in the significance of an archaeological resource pursuant to the CCR 15064.5;
- cause a substantial adverse change in the significance of a historical resource as defined in CCR 15064.5; or
- disturb any human remains, including those interred outside of formal cemeteries.

Significance of Impacts and Treatment

CEQA states that a substantial adverse change in the significance of a resource means the physical demolition, destruction, relocation, or alteration of the

resource or its immediate surroundings such that the significance of a historical resource would be materially impaired. Actions that would materially impair the significance of a historic resource are any that would demolish or adversely alter those physical characteristics of a historical resource that convey its historical significance and qualify it for inclusion in the CRHR or in a local register or survey that meets the requirements of PRC 5020.1(k) and 5024.1(g).

When a project will affect an archaeological site, CEQA provides guidelines for determining the significance of impacts and appropriate treatment for the resource (State CEQA Guidelines 15064[c]). If an archaeological site is a historical resource, the site shall be treated according to the provisions of PRC 21084.1 and State CEQA Guidelines 15064.5. In this case, the limits provided in PRC 21083.2 do not apply. If an archaeological site is not a historical resource under CEQA but meets the criteria for a unique archaeological resource (PRC 21083.2), the site shall be treated in accordance with provisions outlined in PRC 21083.2. Time and cost limitations outlined in PRC 21083.2 do not apply to inventories or site evaluation activities designed to determine if unique archaeological resources are present within the study area. If an archaeological resource is neither a historic resource nor a unique archaeological site, any effects to the resource are not considered significant.

Impacts and Mitigation Measures

Impact CR-1: Disturbance or Destruction of Known and Undiscovered Archaeological Resources within the Arroyo Las Positas Archaeological Buffer Zone—Less than Significant with Mitigation

The area around the Arroyo Las Positas is sensitive for buried cultural resources. This determination is based upon the depositional environment of the area and upon the presence of known archaeological sites in the area. The area historically has been subjected to repeated flooding, which has resulted in the deposition of silts potentially rendering many archaeological sites adjacent to the drainage invisible upon surface examination. Additionally, two of the three archaeological sites known to exist within the Project Area are located along the drainage. Site C-669 will be directly impacted by the construction of the multi-use trail along the Arroyo Las Positas and potentially by detention basin grading. Site AM-2 could be disturbed by stormwater outfall installation, road construction, or other project development. Site AM-2 has been excavated and resulted in the discovery of a human interment. It is uncommon for a burial to be isolated. Typically, prehistoric interments are found in groups ranging from 10 to 100 individuals. Therefore, it is likely that other burials are present nearby.

Based on the sensitive nature of the area, any ground disturbing activity within 500 to 1,000 feet of the Arroyo Las Positas original alignment has the potential to disturb significant archaeological deposits. The Jack London Boulevard/Airway Boulevard Extension options, the El Charro Road improvement, and other roadway improvements fall within the buffer zone, as do the bicycle path and some proposed utility improvements and development. Ground disturbing

activity in the Arroyo Las Positas Archaeological Buffer Zone (500 to 1,000 feet from creek) may result in the disturbance or destruction of buried archaeological sites with intact deposits. This would be considered a significant impact that can be reduced to a less-than-significant level by implementing Mitigation Measure CR-1.

Mitigation Measure CR-1: Develop and Implement a Treatment Plan for the Arroyo Las Positas Archaeological Buffer Zone

Prior to any construction within the Arroyo Las Positas Archaeological Buffer Zone, a formal archaeological treatment plan should be developed and implemented. The treatment plan will be designed to reduce the potential impacts on known and undiscovered archaeological resources and will be based on state and federal regulations regarding cultural resources and human remains. The treatment plan will include a detailed methodology for preconstruction attempts to identify undiscovered archaeological resources in areas where ground disturbance is planned. These efforts may include the excavation of a series of mechanically excavated trenches, hand excavations, or remote sensing, as applicable. A formal evaluation of any identified cultural resource will be conducted, and avoidance measures will be developed when possible. If it is not possible to avoid significant resources, mitigation measures will be developed and implemented. These mitigation measures may include data recovery, further documentation, interpretive displays or other treatment. Other topics to be addressed include a detailed prehistoric and historic context, further map and archival research, field and laboratory methods, research themes, significance criteria, and the disposition of any human remains or artifacts recovered. The treatment plan also will include procedures for working with the local Native American community, contact information for the Most Likely Descendant as determined by the NAHC, and procedures for archaeological and Native American monitoring of any excavation.

Impact CR-2: Inadvertent Disturbance to or Destruction of Site P-01-010526 as a result of Ground-Disturbing Activities Associated with Construction of the Jack London Boulevard Extension—Less than Significant with Mitigation

Site P-01-010526 is located in the vicinity of the proposed alignment of the extension of Jack London Boulevard. The site has not been evaluated for eligibility for listing in the CRHR. Though the project alternative as currently designed will not directly impact the site, activity associated with construction may result in inadvertent disturbance to P-01-010526. If P-01-010526 is eligible for listing in the CRHR, any disturbance to the site will be considered a significant impact. This impact can be reduced to a less-than-significant level by implementing Mitigation Measure CR-2.

Mitigation Measure CR-2: Delineate Site Boundary of P-01-010526 and Fence if Necessary

Prior to construction, a qualified archaeologist will closely examine P-01-010526 and delineate the boundaries of the site, using surface

examination and surface scrapes. The boundary will be delineated using a Global Positioning System unit, in order to retain information for future use. If the boundaries of the site are within 100 feet of the proposed construction corridor, the site and a 50-foot buffer will be surrounded with ESA fencing during construction to avoid potential impacts on the site. Should project design be altered to include any portion of the site, it would be necessary to evaluate the site for eligibility for listing in the CRHR.

Impact CR-3: Disturbance or Destruction of Undiscovered Buried Resources during Ground-Disturbing Activities—Less than Significant with Mitigation

The Project Area, outside the Arroyo Las Positas Archaeological Buffer Zone, while not as sensitive as the buffer area, still may contain buried archaeological deposits. Though the area has been examined for cultural resources, it is not possible to determine what lies beneath the ground surface. It is possible that previously undiscovered intact subsurface archaeological remains are located within the Project Area outside the Arroyo Las Positas Archaeological Buffer Zone. The disturbance or destruction of these resources would be considered a significant impact. The implementation of Mitigation Measure CR-3 would reduce this impact to a less-than-significant level.

Mitigation Measure CR-3: Implement Archaeological and Native American Monitoring Plan

A cultural resources monitoring plan will be developed and implemented for all ground disturbing activities within the Project Area. The monitoring plan will provide for both a Native American monitor and an archaeological monitor to be present during all ground disturbing activities as determined necessary by a qualified cultural resources professional and define procedures to follow in case of discovery of cultural resources or human remains. The procedures will be guided by state and federal regulations regarding cultural resources and human remains. The monitoring plan will further define the roles and responsibilities of the monitors and other personnel and provide contact information in case of a discovery. After the completion of construction, a monitoring report will be produced. Should construction take place as discrete projects, separate monitoring reports may be produced, but the monitoring plan will apply to all construction within the Project Area outside the Arroyo Las Positas Archaeological Buffer Zone.

Impact CR-4: Potential Impacts on Buried or Unknown Archaeological Resources—Less than Significant with Mitigation

The potential always exists for accidental damage to buried cultural deposits or human remains that may be discovered during construction of various elements of the proposed Project. Buried deposits may be eligible for listing in the CRHR. This impact is considered potentially significant but would be reduced to a less-than-significant level by implementing Mitigation Measure CR-4.

Mitigation Measure CR-4: Stop Work if Buried Cultural Deposits are Encountered during Construction Activities

If buried cultural resources, such as chipped or ground stone, historic debris, building foundations, or human bone, are inadvertently discovered during ground disturbing activities, work will stop in that area and within 100 feet of the find until a qualified archaeologist can assess the significance of the find and, if necessary, develop appropriate treatment measures in consultation with the City and other appropriate agencies.

If human remains of Native American origin are discovered during project construction, it will be necessary to comply with state laws relating to the disposition of Native American burials, which fall within the jurisdiction of the NAHC (PRC 5097). If any human remains are discovered or recognized in any location other than a dedicated cemetery, there will be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until:

- the County coroner has been informed and has determined that no investigation of the cause of death is required; and
- if the remains are of Native American origin:
  - the descendants of the deceased Native Americans have made a recommendation to the landowner or the person responsible for the excavation work for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in PRC 5097.98, or
  - the NAHC was unable to identify a descendant or the descendant failed to make a recommendation within 24 hours after being notified by the NAHC.

According to the California Health and Safety Code (CHSC), six or more human burials at one location constitute a cemetery (CHSC 8100), and disturbance of Native American cemeteries is a felony (CHSC 7052). CHSC 7050.5 requires that construction or excavation be stopped in the vicinity of discovered human remains until the coroner can determine whether the remains are those of a Native American. If the remains are determined to be Native American, the coroner must contact the California NAHC.

3.6 Geology, Soils, and Paleontology

This section assesses the proposed Project's potential impacts related to the existing geological and soils conditions on the site, concentrating particularly on any potential hazards that could result from construction in the Project Area. This section also addresses the Project's potential impacts on paleontological resources. For the purposes of this analysis, *paleontological resources* are defined as including fossilized remains of vertebrate and invertebrate organisms, fossil tracks and trackways, and plant fossils. This analysis focuses on developing a strategy to: (1) assess risks to nonrenewable paleontological resources; and (2) avoid and minimize impacts. Key information used in the preparation of this section was derived from published geologic literature and maps and from guidelines published by the Society of Vertebrate Paleontology (SVP). Specific reference information is provided in the text.

Environmental Setting

Existing Conditions

Geology and Topography

This section addresses the regional and Project Area geology and topography. Quaternary sediments and geologic hazards pertaining to the Project Area are emphasized. The Project Area is located near the westernmost edge of the Great Valley geomorphic province but is within the Coast Ranges geomorphic province. The Coast Ranges geomorphic province is discussed below.

Regional Geology and Topography (Coast Ranges Geomorphic Province)

The Coast Ranges geomorphic province includes many separate ranges; coalescing mountain masses; and several major structural valleys of sedimentary, igneous, and metamorphic origin. The northern Coast Range extends from the California/Oregon border south to the San Francisco Bay Area. On average, it extends from the coastline to 50–75 miles inland. The southern Coast Range extends from the San Francisco Bay Area south to the northern edge of the Transverse Ranges geomorphic province. On average, the southern Coast Range extends from the coastline to 50–75 miles inland. Both the northern and southern Coast Ranges parallel the Great Valley geomorphic province throughout their length, except for the northernmost end of California where the northern Coast Range is adjacent to the Klamath Mountains geomorphic province.

The Coast Ranges geomorphic province includes many separate ranges, coalescing mountain masses, and several major structural valleys. Typical tectonic, sedimentary, and igneous processes of the Circum-Pacific orogenic belt have influenced the evolution of the Coast Ranges. The Coast Ranges

geomorphic province is characterized by the presence of two entirely different core complexes, one being a Jurassic-Cretaceous eugeosynclinal assemblage (the Franciscan rocks) and the other consisting of early Cretaceous granitic intrusives and older metamorphic rocks. The two unrelated, incompatible core complexes lie side by side, separated from each other by faults. A large sequence of Cretaceous and Cenozoic clastic deposits cover large parts of the province. The rocks in the province are characterized by many folds, thrust faults, reverse faults, and strike-slip faults that have developed as a consequence of Cenozoic deformation (Page 1966).

Geology and Topography of the Project Area

The Project Area is located within the Livermore Valley on relatively flat ground. The geology of the Project Area consists entirely of alluvium, which generally is composed of unconsolidated stream and basin clay to boulder-sized deposits (Wagner et al. 1990). Elevations range from about 350 feet to 400 feet above mean sea level (msl).

Seismicity

Seismic hazards are earthquake fault ground rupture and ground shaking (primary hazards) and liquefaction and earthquake-induced slope failure (secondary hazards). Ground shaking and liquefaction are the most significant seismic hazards in the Project Area.

Alameda County, as well as the San Francisco Bay Area as a whole, is located in one of the most seismically active regions in the United States. Major earthquakes have occurred in the vicinity of the Project Area in the past and can be expected to occur again in the near future. The 2002 Working Group on California Earthquake Probabilities estimated that there is a 62% probability of at least one magnitude 6.7 or greater earthquake to occur on one of the major faults within the San Francisco Bay region before 2030 (Working Group On California Earthquake Probabilities 2003). Furthermore, in a previous study, it determined that there is a 30% chance of one or more magnitude 6.7 or greater earthquakes occurring somewhere along the Calaveras, Concord, Green Valley, Mount Diablo Thrust, or Greenville faults before 2030, faults very close to the Project Area (Working Group On California Earthquake Probabilities 1999).

Surface Rupture and Faulting

The purpose of the Alquist-Priolo Earthquake Fault Zoning Act (Alquist-Priolo Act) is to regulate development near active faults to mitigate the hazard of surface rupture. Faults in an Alquist-Priolo Earthquake Fault Zone are typically active faults. As defined under the Alquist-Priolo Act, an active fault is one that has had surface displacement within Holocene time (about the last 11,000 years). An early Quaternary fault is one that has had surface displacement during Quaternary time (the last 1.6 million years). A pre-Quaternary fault is one that has had surface displacement before the Quaternary period. Only faults officially recognized by the State of California under the Alquist-Priolo Act or faults

recognized by the Uniform Building Code (UBC) are subject to mitigation (Hart and Bryant 1997).

The Project Area is subject to seismic hazards because of its proximity to the San Andreas fault system and other faults, fault systems, and fault complexes. Some of the officially recognized (e.g., by the State of California or UBC) active faults associated with the San Andreas fault system are located within a 20-mile radius of the Project Area (others, such as the San Andreas fault zone and the Ortigalita fault zone are located outside of a 20-mile radius of the Project Area). Active faults within a 20-mile radius of the Project Area include the Concord and Green Valley faults (often referred to as the Concord-Green Valley fault) and the Calaveras, Hayward, and Greenville faults (Hart and Bryant 1997; International Conference of Building Officials 1994; Jennings 1994). All of these faults are in Alquist-Priolo Earthquake Fault Zones (Hart and Bryant 1997).

Other Quaternary faults within a 20-mile radius of the Project Area include the Clayton, Marsh Creek, San Joaquin, Crosley, Williams, Las Positas, Pleasanton, Midway, Black Butte, Silver Creek, Mission, Vernalis, Stockton, Midland, Antioch (sometimes referred to as the Antioch-Davis fault), Verona, Livermore, and San Antonio Valley faults (Jennings 1994; Wagner et al. 1990). None of these faults are in Alquist-Priolo Earthquake Fault Zones (Hart and Bryant 1997). Various unnamed pre-Quaternary faults are also present in an approximately 20-mile radius. None of these faults are in Alquist-Priolo Earthquake Fault Zones (Hart and Bryant 1997). Of all faults described above, the Las Positas and Livermore faults are closest to the Project Area, located within a few miles of it.

Furthermore, buried thrust faults and inferred faults are located near the Project Area. These faults are not officially recognized yet by the State of California or the UBC, but they are potential seismic sources. For example, recent research suggests that the Mount Diablo fault system (referred to as the Mount Diablo Thrust) is a complex active thrust system with some blind strands and likely poses a substantial seismic hazard (Sawyer 1999; Unruh 2000; Sawyer and Unruh 2004). Accordingly, the seismic hazards for the Project Area are affected by both the San Andreas fault system and these buried thrust faults and inferred faults. The buried thrust faults and inferred thrust faults are not listed in Alquist-Priolo Earthquake Fault Zones because they do not have surface ruptures and are not officially recognized.

Based on existing published data on officially recognized faults, the risk of surface rupture and faulting in the Project Area is high because of its proximity to active faults described above.

Ground-Shaking Hazard

The Project Area is located in UBC Seismic Hazard Zone 4. Structures must be designed to meet the regulations and standards associated with Zone 4 hazards. Furthermore, the Project Area is located in a region of California characterized by locally moderate to very high historical seismic activity. The UBC recognizes active seismic sources in the Project Area vicinity (International Conference of Building Officials 1994), including the Calaveras and Hayward faults (Type A

seismic sources) and the Greenville, Concord, and Green Valley faults (Type B seismic sources). Outside of a 20-mile radius of the Project Area, the Ortigalita fault (Type B seismic source) and the San Andreas fault zone (Type A seismic source) faults present the greatest hazards.

As described above, the risk of surface rupture in the Project Area is generally high because of its proximity to active faults. Earthquake-induced ground shaking poses a similar hazard. Most of the seismic activity in the vicinity of the Project Area (and therefore most of the seismic ground-shaking hazard) is associated with the historically active San Andreas fault zone and other nearby faults, fault zones, and fault complexes.

The measurement of the energy released at the point of origin, or epicenter, of an earthquake is referred to as the magnitude, which is generally expressed in the Richter Magnitude Scale or as moment magnitude. The scale used in the Richter Magnitude Scale is logarithmic so that each successively higher Richter magnitude reflects an increase in the energy of an earthquake of about 31.5 times. Moment magnitude is the estimation of an earthquake magnitude by using seismic moment, which is a measure of an earthquake size utilizing rock rigidity, amount of slip, and area of rupture.

The greater the energy released from the fault rupture, the higher the magnitude of the earthquake. Earthquake energy is most intense at the fault epicenter; the farther an area from an earthquake epicenter, the less likely that ground shaking will occur there. Geologic and soil units comprising unconsolidated, clay-free sands and silts can reach unstable conditions during ground shaking, which can result in extensive damage to structures built on them (see "Liquefaction and Related Hazards" below).

Ground shaking is described by two methods: ground acceleration as a fraction of the acceleration of gravity (g) or the Modified Mercalli scale, which is a more descriptive method involving 12 levels of intensity denoted by Roman numerals. Modified Mercalli intensities range from I (shaking that is not felt) to XII (total damage).

The intensity of ground shaking that would occur in the Project Area as a result of an earthquake in the Bay Area is partly related to the size of the earthquake, its distance from the Project Area, and the response of the geologic materials within the Project Area. As a rule, the earthquake magnitude and the closer the fault rupture to the site, the greater the intensity of ground shaking. When various earthquake scenarios are considered, ground-shaking intensities will reflect both the effects of strong ground accelerations and the consequences of ground failure.

Estimates of Earthquake Shaking

The Project Area is located in a region of California characterized by a moderate ground-shaking hazard. Based on a probabilistic seismic hazard map that depicts the peak horizontal ground acceleration values exceeded at a 10% probability in 50 years (Cao et al. 2003; California Geological Survey 2006), the probabilistic

peak horizontal ground acceleration values in the Project Area range from 0.4 to 0.5*g*, where one *g* equals the force of gravity, thus indicating that the ground-shaking hazard in the Project Area is moderate. Furthermore, based on shaking intensity maps and information from the Association of Bay Area Governments, ground-shaking hazard in the Project Area is moderate (Association of Bay Area Governments 2003). Farther to the west, the ground-shaking hazard increases even more, coinciding with the increase in abundance of associated faults and fault complexes (Cao et al. 2003; California Geological Survey 2006).

Liquefaction and Related Hazards

Liquefaction is a phenomenon in which the strength and stiffness of unconsolidated sediments are reduced by earthquake shaking or other rapid loading. Poorly consolidated, water-saturated fine sands and silts having low plasticity and located within 50 feet of the ground surface are typically considered to be the most susceptible to liquefaction. Soils and sediments that are not water-saturated and that consist of coarser or finer materials are generally less susceptible to liquefaction (California Division of Mines and Geology 1997). Based on the sedimentological characteristics of the soils and the relatively shallow depth to groundwater, liquefaction hazard is expected to be moderate to high for the Project Area.

Liquefaction susceptibility maps compiled by the USGS verify that Livermore is moderately to highly susceptible to liquefaction (Wentworth et al. 2000). Furthermore, liquefaction susceptibility maps produced by the ABAG (2005) and the City of Livermore (2004a) show that the Project Area is moderately to highly susceptible to liquefaction.

Two potential ground failure types associated with liquefaction in the region are lateral spreading and differential settlement (Association of Bay Area Governments 2001). Lateral spreading involves a layer of ground at the surface being carried on an underlying layer of liquefied material over a gently sloping surface toward a river channel or other open face. Lateral spreading is common in the region and poses a moderate to significant hazard (Association of Bay Area Governments 2001).

Another common hazard in the region is differential settlement (also called ground settlement and, in extreme cases, ground collapse) as soil compacts and consolidates after the ground shaking ceases. Differential settlement occurs when the layers that liquefy are not of uniform thickness, a common problem when the liquefaction occurs in artificial fills. Settlement can range from 1% to 5%, depending on the cohesiveness of the sediments (Tokimatsu and Seed 1984). In the Project Area, differential settlement is expected to be a moderate hazard.

No examinations of test borings in the Project Area have been conducted to date. Test borings are typically important indicators of the presence of poorly consolidated materials and thus liquefaction susceptibility. See the “Impact Analysis” part of this section for further information.

Soils

The soils in the Project Area have been mapped by the U.S. Department of Agriculture, Soil Conservation Service (now called the Natural Resources Conservation Service) and are described in the Soil Survey of Alameda Area (Welch et al. 1966). The following soil associations occur in the Project Area (Table 3.6-1): the Clear Lake-Sunnyvale (covering the northern portion of the Project Area) and the Yolo-Pleasanton soil association (covering the southern portion of the Project Area).

Table 3.6-1. Soil Associations of the Project Area

Soil Association	Soil Description
Clear Lake-Sunnyvale	Nearly level to sloping, dark-gray, very deep, well-drained to imperfectly drained soils on floodplains and basins
Yolo-Pleasanton	Nearly level to sloping, grayish-brown, very deep soils on floodplains and low terraces

Source: Welch et al. 1966

According to the soil survey, soils in the Project Area predominantly comprise clays, clay loams, silt loams, and gravelly loams. Table 3.6-2 summarizes soil characteristics for the Project Area. The soils generally have a very slow to slow runoff rate and slight erosion hazard. Moderate to high shrink-swell potential (i.e., expansive soils), and liquefaction (discussed above) are the most limiting factors.

Table 3.6-2. Detailed Soil Characteristics of the Project Area

Soil Map Unit	Shrink-Swell Potential	Erosion Hazard[a]	Runoff Rate
Clear Lake clay, drained, 0%–3% slopes	High	None	Very slow
Diablo clay, very deep, 3%–15% slopes	High	Slight to moderate	Slow to medium
Livermore gravelly loam	Low	Slight	Very slow to slow
Pleasanton gravelly loam, 0%–3% slopes	Low	Slight	Slow
Rincon clay loam, 0%–3% slopes	High	Slight	Slow
Riverwash	Low	n/a	n/a
Sunnyvale clay loam	Moderate	Slight	Slow
Sycamore silt loam	Low	Slight	Slow
Sycamore silt loam over clay	Low to high	None to slight	Slow
Yolo loam, 0%–3% slopes	Low	Slight	Very slow to slow
Yolo gravelly loam, 0%–3% slopes	Low	Slight	Very slow to slow

Note:

[a] Erosion hazard consists of susceptibility to water and wind erosion. The Soil Survey of Alameda Area (Welch et al. 1966) does not differentiate between the two.

Source: Welch et al. 1966.

The stabilities of the soils—mainly their tendency to shrink, swell, or cause corrosion problems—are the main soil characteristics of concern for the Project. Expansive soils, such as clay, swell when they absorb water and shrink as they dry.

Paleontological Resources

The Project Area is immediately underlain by Quaternary alluvium (Wagner et al. 1990). Such alluvium has yielded abundant fossils of Rancholabrean age (i.e., 0.3 million years ago to 10,000 years ago), including vertebrate fossils, in Alameda County (Jefferson 1991a and 1991b; University of California Museum of Paleontology 2006). Species include horse (*Equus* sp.), mammoth (*Mammuthus* sp.), camel (*Camelops* sp.), and bison (*Bison* sp.).

The Quaternary alluvium in Alameda County has been further subdivided and described in greater detail by Helley and Graymer (2005). According to their work, three map units underlie the Project Area. These subdivisions allow better correlation between fossil finds in other locations with map units in the Project Area.

- Qhfp, Alluvial terrace deposits (Holocene), is made up of rounded gravel in a clayey silt matrix.

- Qpaf1, Alluvial Terrace Deposits (Pleistocene), is made up of gravels, cobbles, and boulders in a sandy matrix. This unit is closely related to Qpaf, which is known to contain extinct late Pleistocene vertebrate fossils.
- QT1, Livermore gravels (Pliocene and Pleistocene), is made up of cobble conglomerate and sandstone.

Although there are no known paleontological resources located within the Project Area, the University of California Museum of Paleontology's (UCMP's) database contains several records of fossil finds near the Project. The database contains eight records of vertebrate fossils in Doolan Canyon, located north of I-580 and the Project Area. These fossils of giant ground sloth (*Glossotherium* sp.), bison, horse, and mammoth are of Rancholabrean age (University of California Museum of Paleontology 2006) and may well have been recovered from the Qpaf map unit, based on location and age. In addition, a mammoth fossil found at the Lawrence Livermore National Laboratory property in 1997 (City of Livermore 2004a) was also likely recovered from the Qpaf map unit, which underlies most of the facility.

Regulatory Setting

The following regulations, policies, and ordinances are in place to protect people and property from geologic hazards or to protect paleontological resources from damage or encroachment from development and human activity.

Federal

Geology and Soils

Clean Water Act 402/National Pollutant Discharge Elimination System

The CWA is discussed in detail in section 3.8, "Hydrology and Water Quality." However, because CWA 402 is directly relevant to excavation, additional information is provided below.

Amendments in 1987 to the CWA added Section 402p, which establishes a framework for regulating municipal and industrial stormwater discharges under the NPDES program. The EPA has delegated to the SWRCB the authority for the NPDES program in California, which is implemented by the state's nine RWQCBs. Under the NPDES Phase II Rule, construction activity disturbing 1 acre or more must obtain coverage under the state's General Permit for Discharges of Storm Water Associated with Construction Activity (General Construction Permit). General Construction Permit applicants are required to prepare a Notice of Intent and a SWPPP and implement and maintain Best Management Practices (BMPs) to avoid adverse effects on water quality as a result of construction activities, including earthwork.

Paleontological Resources

Paleontological Resources Preservation Act

The federal Paleontological Resources Preservation Act of 2002 (PRPA) limits collection of vertebrate fossils and other rare and scientifically significant fossils to qualified researchers who obtain a permit from the appropriate state or federal agency and agree to donate any materials recovered to recognized public institutions where they will remain accessible to the public and to other researchers.

State

Geology and Soils

Alquist-Priolo Earthquake Fault Zoning Act

California's Alquist-Priolo Act (PRC 2621 et seq.), originally enacted in 1972 as the Alquist-Priolo Special Studies Zones Act and renamed in 1994, is intended to reduce the risk to life and property from surface fault rupture during earthquakes. The Alquist-Priolo Act prohibits the location of most types of structures intended for human occupancy across the traces of active faults and strictly regulates construction in the corridors along active faults (Earthquake Fault Zones). It also defines criteria for identifying active faults, giving legal weight to terms such as "active" and establishes a process for reviewing building proposals in and adjacent to Earthquake Fault Zones.

Under the Alquist-Priolo Act, faults are zoned, and construction along or across them is strictly regulated if they are "sufficiently active" and "well-defined." A fault is considered sufficiently active if one or more of its segments or strands shows evidence of surface displacement during Holocene time (defined for the purposes of the act as within the last 11,000 years). A fault is considered well-defined if its trace can be clearly identified by a trained geologist at the ground surface or in the shallow subsurface, using standard professional techniques, criteria, and judgment (Hart and Bryant 1997).

Seismic Hazards Mapping Act

Like the Alquist-Priolo Act, the Seismic Hazards Mapping Act of 1990 (PRC 2690–2699.6) is intended to reduce damage resulting from earthquakes. While the Alquist-Priolo Act addresses surface fault rupture, the Seismic Hazards Mapping Act addresses other earthquake-related hazards, including strong ground shaking, liquefaction, and seismically induced landslides. Its provisions are similar in concept to those of the Alquist-Priolo Act: The state is charged with identifying and mapping areas at risk of strong ground shaking, liquefaction, landslides, and other corollary hazards, and cities and counties are required to regulate development within mapped Seismic Hazard Zones.

Under the Seismic Hazards Mapping Act, permit review is the primary mechanism for local regulation of development. Specifically, cities and counties

are prohibited from issuing development permits for sites in Seismic Hazard Zones until appropriate site-specific geologic or geotechnical investigations have been carried out, and measures to reduce potential damage have been incorporated into the development plans.

California Building Standards Code

The State of California's minimum standards for structural design and construction are given in the California Building Standards Code (CBSC) (CCR Title 24). The CBSC is based on the UBC (International Code Council 1997), which is used widely throughout United States (generally adopted on a state-by-state or district-by-district basis) and has been modified for California conditions with numerous, more detailed or more stringent regulations. The CBSC requires that "classification of the soil at each building site will be determined when required by the building official" and that "the classification will be based on observation and any necessary test of the materials disclosed by borings or excavations." In addition, the CBSC states that "the soil classification and design-bearing capacity will be shown on the (building) plans, unless the foundation conforms to specified requirements." The CBSC provides standards for various aspects of construction, including (i.e., not limited to) excavation, grading, and earthwork construction; fills and embankments; expansive soils; foundation investigations; and liquefaction potential and soil strength loss. In accordance with California law, certain aspects of the Project would be required to comply with all provisions of the CBSC.

Paleontological Resources

California Environmental Quality Act

CEQA includes in its definition of *historical resources* "any object [or] site … that has yielded or may be likely to yield information important in prehistory"(State CEQA Guidelines 15064.5[3]), which is typically interpreted as including fossil materials and other paleontological resources. In addition, destruction of a "unique paleontological resource or site or unique geologic feature" constitutes a significant impact under CEQA (CEQA Guidelines Appendix G). The treatment of paleontological resources under CEQA is generally similar to the treatment of cultural resources, requiring evaluation of resources in a project's area of potential effect; assessment of potential impacts on significant or unique resources; and development of mitigation measures for potentially significant impacts, which may include monitoring combined with data recovery or avoidance.

California Public Resources Code

Several sections of the PRC protect paleontological resources. Section 5097.5 prohibits "knowing and willful" excavation, removal, destruction, injury, and defacement of any paleontological feature on public lands (lands under state, county, city, district, or public authority jurisdiction, or the jurisdiction of a public corporation), except where the agency with jurisdiction has granted express permission. Section 30244 requires reasonable mitigation for impacts on

paleontological resources that occur as a result of development on public lands. The sections of the CCR relating to the State Division of Beaches and Parks afford protection to geologic features and "paleontological materials" but grant the director of the state park system authority to issue permits for specific activities that may result in damage to such resources, if the activities are in the interest of the state park system and for state park purposes (14 CCR 4307–4309).

Local

Geology and Soils

Geotechnical Investigations

Local jurisdictions typically regulate construction activities through a multistage permitting process that may require the preparation of a site-specific geotechnical investigation. The purpose of a site-specific geotechnical investigation is to provide a geologic basis for the development of appropriate construction design. Geotechnical investigations typically assess bedrock and Quaternary geology, geologic structure, soils, and the previous history of excavation and fill placement.

The Alameda County General Plan (Alameda County 1982) requires all new development to be designed and constructed to minimize risk from geologic and seismic hazards, with geotechnical investigations to be performed prior to any planning or construction activities.

The Public Safety Element of the City of Livermore General Plan (City of Livermore 2004a) requires that projects proposed in areas identified as being subject to moderate or high geologic hazard shall be required to conduct site-specific geotechnical investigations.

No site-specific geotechnical investigation providing a geologic basis for the development of appropriate construction design has been completed for any portion of the Project Area. Accordingly, this chapter requires that a detailed geotechnical report will need to be conducted before any construction activities occur. All relevant recommendations from this report will be incorporated into the project design. See the "Impact Analysis" part of this section for further information.

Local Grading and Erosion Control Ordinances

Many counties and cities have grading and erosion control ordinances. These ordinances are intended to control erosion and sedimentation caused by construction activities. A grading permit is typically required for construction-related projects. As part of the permit, the project applicants usually must submit a grading and erosion control plan, vicinity and site maps, and other supplemental information. Standard conditions in the grading permit include a description of BMPs similar to those contained in a SWPPP.

As per the Alameda County General Ordinance Code (Alameda County 2006), the County's Grading Ordinance, Chapter 15.36, "Grading, Erosion and Sediment Control," outlines regulations and practices relevant to construction and grading activities within the county. Typically, a grading permit is required for all construction and grading activities within the county (Chapter 15.36.050 explains the exemptions for grading permits).

Alameda County General Plan

Objectives, principles, and implementation contained in the Seismic Safety and Safety Elements of the Alameda County General Plan (Alameda County 1982) that are applicable to the proposed Project are as follows:

> **Objective:** To minimize unacceptable risks, personal injury and loss of life associated with environmental hazards.
>
> **2. Geologic Hazards**
>
> **Principle 2.2.** All new development should be designed and constructed to minimize risk due to geologic hazards and seismic hazards.
>
> **Principle 2.3.** The level of risk from geologic hazards to existing development should be minimized.

City of Livermore General Plan

Goals, objectives, policies, and actions contained in the City of Livermore General Plan (City of Livermore 2004a) that are applicable to geology and soils are as follows:

> **Land Use Element**
>
> **Goal LU-4:** Ensure that new development mitigates significant environmental, design, and infrastructure impacts.
>
> **Objective LU-4.1:** Prevent development from occurring where the location or the physical or biological characteristics of the site would make the land use inappropriate.
>
> **Policy:**
>
> **P1.** Impacts to wetland and biological resources shall be calculated on a gross acreage basis and shall include areas of steep slopes, streets, floodways, and parks dedications that could result in losses of wildlife and plant habitat on a parcel.
>
> **Objective LU-4.2:** Ensure that new development complements its local context and minimizes impacts on the environment.

Policy:

P1. New development shall be designed to respect and enhance Livermore's existing development and natural environment.

Infrastructure and Public Services Element

III. Storm Water Collection

Goal INF-3: Collect, store and dispose of stormwater in ways that are safe, sanitary, environmentally acceptable and financially sound while maintaining the highest standards required to enhance the quality of life for existing and future residents.

Objective INF-3.3: Maintain creeks and arroyos in as natural a state as possible, while maintaining the health and safety of residents, providing flood control, preserving habitat and providing recreational use.

Policies:

P1. Stream modifications should only be allowed for development in order to better contain flood flows, re-route stormwater to restore creek conveyance capacity and enhance groundwater recharge, stabilize creek beds and banks and control erosion, remove sediment and debris, provide public access for maintenance and emergency vehicles, provide for trails and recreational facilities, restore creek natural habitat and wetlands areas and provide for water filtration.

P2. Any stream modifications and flood control structure improvements shall be done in accordance with appropriate engineering design, resource agency approvals, and current environmental restoration best management practices.

P5. New development shall be required to incorporate appropriate measures minimize the impacts of stormwater runoff to local creeks and channels.

Public Safety Element

Goal PS-1: Reduce risk to the community from earthquakes and other geologic hazards.

Objective PS-1.1: Regulate new land development to prevent the creation of new geologic hazards.

Policies:

P1. Urban development within earthquake fault zones and areas of high landslide susceptibility, shown in Figure 10-3 of the City of Livermore General Plan [City of Livermore 2004a], shall be conditioned upon the preparation of site-specific geotechnical investigations.

P2. The City shall rely on the most current and comprehensive geologic hazard mapping available to assist in the evaluation of potential seismic hazards

associated with proposed new development. Projects proposed in areas identified as being subject to moderate or high geologic hazard shall be required to conduct site-specific geotechnical investigation.

P5. Construction shall be prohibited in areas with severe erosion (slopes over 10 percent), as mapped by the USDA's Natural Resources Conservation Service, unless it can be clearly demonstrated through geotechnical engineering analysis that the Project will not contribute to increased erosion, sedimentation or runoff.

P6. Development shall be prohibited in areas susceptible to slope failure (defined as landslide susceptibility areas 3 and 4 on Figure 10-3 [of the City of Livermore General Plan (City of Livermore 2004a)] or current hazard mapping), per State law, unless site-specific geotechnical investigation indicates that landslide hazards can be effectively mitigated.

P7. Prohibit development on expansive soils which are subject to a high probability of sliding; developments proposed below areas of expansive soils in foothill areas shall be conditioned to avoid damage from potential slide areas.

Actions:

A1. Retain a geologist registered in the State of California to evaluate the geologic reports required under [the policies listed above] and advise the City regarding them.

Objective PS-1.2: Enforce measures related to site preparation and building construction that protect life and property from seismic hazards.

Policies:

P2. Areas of high shrink-swell potential soils shall incorporate suitable mitigation measures. If development is allowed in areas of high shrink-swell potential, special measures must be undertaken in site grading, foundation design and construction to alleviate potential movements.

P3. The City shall control site preparation procedures and construction phasing to reduce erosion and exposure of soils to the maximum extent possible.

Paleontological Resources

County and city general plans often specifically protect paleontological resources. In addition, general plan and local ordinance protection for cultural and "heritage" resources also covers paleontological resources in some jurisdictions. The goal of general plan policies is typically to recognize the importance of these resources as part of a jurisdiction's unique character and heritage and to ensure that they are preserved as development proceeds. Some jurisdictions also emphasize the need to increase public awareness of such resources.

City of Livermore General Plan

The City of Livermore General Plan discusses paleontological resources in the same context as historical and archaeological resources. One objective and two

policies from the General Plan are applicable to paleontological resources, as follows:

Community Character Element

Objective CC-3.4: Identify and protect archeological and paleontological resources that enrich our understanding of early Livermore and the surrounding region.

Policies:

P1. The City shall require proper archeological or paleontological testing, research, documentation, monitoring, and safe retrieval of archeological and cultural resources as part of a City established archeological monitoring and mitigation program.

P2. Whenever there is evidence of an archeological or paleontological site within a proposed Project Area, an archeological survey by qualified professionals shall be required as part of the environmental assessment process.

Impact Analysis

This section describes the analysis relating to geology and soils for any significant impacts as a result of the proposed Project. It describes the methods used to determine those impacts and lists the thresholds used to conclude whether an impact would be significant. Measures to mitigate (avoid, minimize, rectify, reduce, eliminate, or compensate for) significant impacts accompany each impact discussion.

Thresholds of Significance

The standards of significance described in CEQA, seismic elements of the Alameda County General Plan (Alameda County 1982), and goals and objectives of the City of Livermore General Plan (City of Livermore 2004a) were used in this analysis, as described below. Appendix G of the State CEQA Guidelines provides guidance for evaluation of project effects on geologic and paleontological resources. Based on these guidelines, the Project is considered to have a significant impact on geologic resources if it would:

- expose people or structures to rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault;
- expose people or structures to major geologic hazards that could result in loss, injury, or death related to strong seismic ground shaking or seismic-related ground failure, including liquefaction or landslides;

- result in development on a geologic unit or soil that is unstable or that would become unstable as a result of the Project and potentially result in an on-site or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse;
- result in substantial soil erosion or the loss of topsoil; or
- result in development on expansive soil, as defined in the UBC (International Conference of Building Officials 1994), creating substantial risks to life or property.

In addition, the proposed Project is considered to have a significant impact on paleontological resources if it would:

- directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

Approach and Methodology

Geology and Soils

Evaluation of the geology and soils impacts in this section is based on the results of technical maps, reports, and other documents that describe the geologic, seismic, and soil conditions of the Project Area, and on professional judgment. The analysis assumes that the project applicants will conform to the latest UBC standards, CBSC standards, County general plan seismic safety standards, County and City grading ordinances, and NPDES requirements.

Paleontological Resources

Professional Standards and Guidelines

In response to a recognized need for standard guidance on paleontological resources management, the SVP published a set of *Standard Guidelines* (Society of Vertebrate Paleontology Conformable Impact Mitigation Guidelines Committee 1995) that are now widely followed. The SVP guidelines identify two key phases in the process for protecting paleontological resources from project impacts, as follows.

1. Assess the likelihood that the Project's area of potential effect contains significant nonrenewable paleontological resources that could be directly or indirectly impacted, damaged, or destroyed as a result of the Project.
2. Formulate and implement measures to mitigate potential adverse impacts.

An important strength of the SVP's approach to assessing potential impacts on paleontological resources is that the SVP guidelines provide some standardization in evaluating a Project Area's paleontological sensitivity. Table 3.6-3 defines the SVP's sensitivity categories for paleontological resources and

summarizes its recommended treatments to avoid adverse impacts in each sensitivity category.

Table 3.6-3. Society of Vertebrate Paleontology's Recommended Treatment for Paleontological Resources, by Sensitivity Category

Sensitivity Category	Definition	Recommended Treatment
High potential (High sensitivity)	Areas underlain by geologic units from which vertebrate or significant invertebrate fossils or suites of plant fossils have been recovered	▪ Preliminary survey and surface salvage before construction begins ▪ Monitoring and salvage during construction ▪ Specimen preparation; identification, cataloging, curation, and storage of materials recovered ▪ Preparation of final report describing finds and discussing their significance ▪ *All work should be supervised by a professional paleontologist who maintains the necessary collecting permits and repository agreements*
Undetermined potential (Undetermined sensitivity)	Areas underlain by geologic units for which little information is available	▪ Preliminary field surveys by a qualified vertebrate paleontologist to assess the Project Area's sensitivity ▪ Design and implementation of mitigation if needed, based on results of field survey
Low potential (Low sensitivity)	Areas underlain by geologic units that are not known to have produced a substantial body of significant paleontologic material	Protection and salvage generally are not required; however, a qualified paleontologist should be contacted if fossils are discovered during construction, in order to salvage finds and assess the need for further mitigation

Source: Society of Vertebrate Paleontology Conformable Impact Mitigation Guidelines Committee 1995.

The SVP's guidelines also provide a working definition of *significance* as applied to paleontological resources. According to the SVP, significant paleontological resources are those that fulfill one or more of the following criteria (Society of Vertebrate Paleontology Conformable Impact Mitigation Guidelines Committee 1995).

- The resource provides important information shedding light on evolutionary trends or helping to relate living organisms to extinct organisms.
- The resource provides important information regarding the development of biological communities.
- The resource demonstrates unusual circumstances in the history of life.
- The resource represents a rare taxon or a rare or unique occurrence; the resource is in short supply and in danger of being destroyed or depleted.

- The resource has a special and particular quality, such as being the oldest of its type or the best available example of its type.
- The resource provides important information used to correlate strata for which it may be difficult to obtain other types of age dates.

Significant paleontological resources may include vertebrate fossils and their associated taphonomic and environmental indicators, invertebrate fossils, and plant fossils.

Impacts and Mitigation Measures

The impacts discussed below for geology and soils and paleontological resources apply to all elements of and options within the proposed Project.

Geology and Soils

Impact GEO-1: Potential Structural Damage and Injury Caused by Fault Rupture—Less than Significant

Based on available knowledge of fault locations and locations of earthquake epicenters, the risk of surface fault rupture in the Project Area is generally high because of its proximity to active faults. Fault rupture has the potential to compromise the structural integrity of proposed new facilities (including roadways, bridges, trails, buildings, and other associated features) and cause injury to construction workers and residents. However, this impact is considered less than significant because the project applicants are required to implement UBC Seismic Hazard Zone 4, CBSC, and County and City General Plan standards into the project design for applicable features to minimize the potential fault rupture hazards on associated project features. Structures must and will be designed to meet the regulations and standards associated with UBC Seismic Hazard Zone 4 hazards. No further mitigation is required.

Impact GEO-2: Potential Structural Damage and Injury from Ground Shaking—Less than Significant

A large earthquake on a nearby fault could cause moderate ground shaking in the Project Area, potentially resulting in liquefaction and associated ground failure, such as lateral spreading or differential settlement, which in turn could increase the risk of structural loss, injury, or death. However, as part of the design process described above, the project applicants are required to implement UBC Seismic Hazard Zone 4, CBSC, and County and City General Plan standards into the project design for applicable features to minimize the potential ground shaking hazards on associated project features. Structures must and will be designed to meet the regulations and standards associated with UBC Seismic Hazard Zone 4 hazards. This impact is considered less than significant. No further mitigation is required.

Impact GEO-3: Potential Structural Damage and Injury from Development on Materials Subject to Liquefaction—Less than Significant

Liquefaction susceptibility maps compiled by the USGS, ABAG, and the City verify that the Project Area is moderately to highly susceptible to liquefaction, which in turn could increase the risk of structural loss, injury, or death. However, as part of the design process described above, the project applicants are required to implement UBC Seismic Hazard Zone 4, CBSC, and County and City General Plan standards into the project design for applicable features to minimize the potential liquefaction hazards on associated project features. Structures must and will be designed to meet the regulations and standards associated with UBC Seismic Hazard Zone 4 hazards.

Furthermore, as per County and City requirements, the project applicants, in conjunction with soil scientists or engineers, will be responsible for conducting a geotechnical evaluation of unconsolidated sediments in the Project Area to determine whether they are susceptible to liquefaction. For roadways and bridges, subsurface borings at regular intervals along proposed roadways and in the vicinity of proposed bridges are recommended. Based on subsurface conditions, the project applicants, in conjunction with soil scientists or engineers, will design the specific project elements to accommodate the effects of liquefaction. If liquefiable soils or soils susceptible to seismically induced settlement are determined to be present at any location where project activities would occur, corrective actions shall be taken, including removal and replacement of soils; on-site densification; grouting; and design of special foundations or other similar measures, depending on the extent and depth of susceptible soils. All of these measures reduce pore water pressure during ground shaking by densifying the soil or improving its drainage capacity (Johansson 2000). The project applicants or their contractors will select one or more of these measures in consultation with a qualified engineer before activities begin. This impact is considered less than significant. No further mitigation is required.

Impact GEO-4: Potential Structural Damage as a Result of Development on Expansive Soils—Less than Significant

Various soil map units in the Project Area have been identified as having moderate to high shrink-swell potential. Expansive soils have the potential to compromise the structural integrity of proposed new facilities (including roadways, bridges, trails, buildings, and other associated features). However, this impact is considered less than significant because, as part of the design process described above, the project applicants are required to implement UBC Seismic Hazard Zone 4, CBSC, and County and City General Plan standards into the project design for applicable features to minimize the potential shrink-swell hazards on associated project features. Structures must and will be designed to meet the regulations and standards associated with UBC Seismic Hazard Zone 4 hazards.

Furthermore, as per County and City requirements, the project applicants, in conjunction with soil scientists or engineers, will be responsible for conducting a

geotechnical evaluation for expansive soils. For roadways and bridges, subsurface borings at regular intervals along proposed roadways and in the vicinity of proposed bridges are recommended. Based on subsurface conditions, the project applicants, in conjunction with soil scientists or engineers, will design the project structures to accommodate the effects of expansive soils. The project applicants or their contractors will select one or more of these measures in consultation with a qualified engineer before activities begin. This impact is considered less than significant. No further mitigation is required.

Impact GEO-5: Potential Accelerated Runoff, Erosion, and Sedimentation from Grading Activities—Less than Significant

Grading, excavation, removal of vegetation cover, and loading activities associated with construction activities could temporarily increase erosion and sedimentation. Construction activities also could result in soil compaction and wind erosion effects that could adversely affect soils and reduce the revegetation potential at the construction sites and staging areas.

However, a SWPPP will be developed by a qualified engineer or erosion control specialist and implemented before construction. The SWPPP will be kept on-site during construction activity and will be made available upon request to representatives of the RWQCB. The objectives of the SWPPP would be to: (1) identify pollutant sources that may affect the quality of stormwater associated with construction activity; and (2) identify, construct, and implement stormwater pollution prevention measures to reduce pollutants in stormwater discharges during and after construction. Therefore, the SWPPP would include a description of potential pollutants, the management of dredged sediments, and hazardous materials present on the site during construction (including vehicle and equipment fuels). The SWPPP also would include details of how the sediment and erosion control practices, referred to as BMPs, would be implemented. Implementation of the SWPPP would comply with state and federal water quality regulations.

Furthermore, compliance with the County's Grading Ordinance also would minimize any negative effects associated with erosion and sedimentation. The County's Grading Ordinance, Chapter 15.36, "Grading, Erosion and Sediment Control," outlines regulations and practices relevant to construction and grading activities within the county. Typically, a grading permit is required for all construction and grading activities within the county.

Finally, recommendations from required geotechnical reports pertaining to site clearing and preparation, organic removal, engineered fill placement, trench backfilling, foundation design, sound wall systems, interior floor slab support, exterior flatwork, pavement design, and site drainage also would minimize any negative effects associated with erosion and sedimentation. This impact is considered less than significant. No further mitigation is required.

Impact GEO-6: Inconsistency of Project with County and City Policies for Development in Geologically Hazardous Areas—Less than Significant

The proposed Project is consistent with County and City policies stated above in the "Regulatory Setting" part of this section. Danger from geologic hazards to property can be mitigated to an acceptable level as per standard permit requirements and required geotechnical investigations. Development of the proposed Project would involve locating structures in an area with fault rupture, ground shaking, liquefaction, and shrink-swell hazards. These conditions would violate the County policies stated above. However, the proposed Project would not be subject to or contribute to hazardous conditions because of the project requirements and because of the incorporation of the previously described standard permit requirements and required geotechnical investigations.

Paleontological Resources

Impact PAL-1: Destruction of Vertebrate or Otherwise Scientifically Significant Paleontological Resources—Less than Significant with Mitigation

Quaternary alluvium is known to contain important fossil resources, and fossils could be present in the Project Area. In addition, fossils have been recovered near the Project Area and from a map unit (Qpaf) closely related to a map unit found in the Project Area. If fossils are present in the Project Area, they could be damaged during project construction. Substantial damage to or destruction of significant paleontological resources as defined by the SVP (Society of Vertebrate Paleontology Conformable Impact Mitigation Guidelines Committee 1995) would represent a significant impact. To mitigate this potential impact and reduce it to a less-than-significant level, Mitigation Measures PAL-1a and PAL-1b would be implemented.

Mitigation Measure PAL-1a: Conduct Site-Specific Evaluation of Paleontological Sensitivity

Preconstruction studies will include assessment of the site's paleontological sensitivity by a state-registered professional geologist or qualified professional paleontologist. If the paleontological assessment determines that any of the substrate units that would be affected by the planned activity are highly sensitive for paleontological resources, the report also will include recommendations for appropriate and feasible procedures to avoid or minimize damage to any resources present, prepared by a qualified professional paleontologist. The applicants will be responsible for ensuring implementation of the measures identified.

Mitigation Measure PAL-1b: Stop Work if Substantial Fossil Remains Are Encountered During Construction

If substantial fossil remains (particularly vertebrate remains) are discovered during earth-disturbing activities in the Project Area, activities will stop immediately until a state-registered professional geologist or qualified professional paleontologist can assess the nature

and importance of the find and a qualified professional paleontologist can recommend appropriate treatment. Treatment may include preparation and recovery of fossil materials so that they can be housed in an appropriate museum or university collection and also may include preparation of a report for publication describing the finds. The applicants will be responsible for ensuring that recommendations regarding treatment and reporting are implemented.

3.7 Hazards and Hazardous Materials

This section describes the environmental setting and hazardous materials impacts of the proposed Project, including development proposals and associated infrastructure improvements. Specifically, this section discusses the site history and the existing hazardous materials conditions within the Project Area and describes applicable regulations pertaining to the cleanup of soil and groundwater spills and leaks. The assessment of substantial adverse effects and mitigation measures of the proposed Project related to hazardous materials are described also. Public safety issues associated with construction-related roadway disruptions are addressed in section 3.15, "Transportation and Traffic," and section 3.13, "Public Services and Utilities." Flooding hazards are discussed in section 3.8, "Hydrology and Water Quality."

Environmental Setting

Study Area Defined

For the portions of this section that concern local hazardous sites, the study area consisted of the Specific Plan Area and the development proposals. For the study of potential hazardous materials sites, a point in the approximate center of the Specific Plan Area was chosen. A database search was conducted within a varied radius around this point (from 0.25 mile to 1 mile) depending on the type of hazardous site being researched. The study area for other hazards is the Project Area and areas within 0.25 mile of the Project Area.

Methodology for Assessment of Existing Conditions

Records Search

To help define the existing conditions of the Project Area and adjacent properties and assess the risk of exposure to hazards and hazardous materials, a database search report was compiled by Environmental Data Resources (EDR) (2006). EDR conducted a search for properties in the study area that have been designated as hazardous on one or more state or federal databases. A review of federal and state environmental records was conducted for a radius including the Specific Plan Area. A parcel point (1780 Freisman Road) was chosen, and a search was conducted in a radius ranging from 0.25 mile or 1-mile depending upon the type of record being reviewed. Though the 1-mile radius encompasses the entire Specific Plan Area, it does not encompass the entire Project Area; the record search may not have identified all known hazardous sites within the Project Area. This preliminary search does not meet the American Society for Testing and Materials (ASTM) standards for a Phase I Environmental Site Assessment and is not intended to identify and characterize all contaminated sites

within or adjacent to the project alignment. The preliminary search is intended to provide sufficient information to identify hazardous materials that may be encountered and to assist in assessing the level of significance.

Existing Conditions

Records Search Results

As mentioned above, EDR conducted a search for properties in the project vicinity that have been designated as hazardous on one or more state or federal databases or as being required by Proposition 65 ("Notify 65" sites) to provide warning before knowingly and intentionally exposing anyone to a listed chemical. The preliminary database search identified four sites within the study area. These sites include: a historical underground storage tank site and an Alameda County "contaminated sites" list site on the Children's Hospital property, both likely associated with its former use as a dairy; a Notify 65 site listed as being on Airport/Los Positas Golf Course property, likely for the use of hazardous chemicals on the property; and an Emergency Response Notification System site located near the westbound I-580/El Charro Road onramp, likely the result of a freeway-related incident. Some of the sites found by the database search may no longer be active (i.e., they may no longer be considered to contain contaminated materials). Sites identified above may contain potentially hazardous materials, including oil-containing wastes, gasoline, diesel, or methyl tertiary butyl ether (MTBE).

Nearby Schools

Exposure to hazardous materials and wastes can be particularly detrimental to children because of their stage in the developmental process. Therefore, more stringent maximum limits for particular hazardous materials (lead, mercury, etc.) are imposed for the siting of facilities where children will be spending extended amounts of time. There are no existing schools within 0.25 mile of the Project Area.

Emergency Routes

The Project Area is located in a primarily undeveloped area, bounded by I-580 on the north and crossed by rural roads. A golf driving range, small farm complex, golf course and the Livermore Municipal Airport represent the major developments within the Project Area and in the vicinity. I-580, El Charro Road, Freisman Road, Airway Boulevard, and Isabel Avenue are the primary access to these facilities and provide emergency access and evacuation routes. The Livermore fire and police departments are located approximately 3 and 5 miles east of the Project Area, respectively. Valley Memorial Hospital is located approximately 4 miles southeast of the Project Area. Further information

regarding these services is provided in the "Public Services and Utilities" section of this document.

Airports

The Livermore Municipal Airport is located immediately east of the Project Area. The entire Project Area is located within the Livermore Municipal Airport's Airport Protection Area (APA) (City of Livermore 2004a). The APA is designed to keep the airport and its surroundings compatible with aviation activities.

Regulatory Setting

A *hazardous material* is defined by the California Department of Toxic Substances Control (DTSC) as a material that poses a significant present or potential hazard to human health and safety or the environment if released because of its quantity, concentration, or physical or chemical characteristics (26 CCR 25501). Common hazardous materials include petroleum hydrocarbons, pesticides, volatile organic chemicals, and certain metals.

Various federal and state agencies exercise regulatory authority over the use, generation, transport, and disposal of hazardous substances. The primary federal regulatory agency is the EPA. The primary California state agency with similar authority and responsibility is the California Environmental Protection Agency (Cal-EPA), which may delegate enforcement authority to other local agencies with which it has agreements. Federal regulations applicable to hazardous substances are contained primarily in the CFR Titles 29 (Labor), 40 (Protection of Environment), and 49 (Transportation). State regulations are contained in CCR Titles 13 (Motor Vehicles), 19 (Public Safety), 22 (Social Security), and 26 (Toxics).

Specific legislation and policies related to hazards and hazardous materials are summarized below.

Federal Regulations

Comprehensive Environmental Response, Compensation, and Liability Act of 1980

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), also called the Superfund Act (42 USC 9601 et seq.), is intended to protect the public and the environment from the effects of prior hazardous waste disposal and new hazardous material spills. Under CERCLA, the EPA has the authority to seek the parties responsible for hazardous materials releases and to ensure their cooperation in site remediation. CERCLA also provides federal funding (the "Superfund") for the remediation of hazardous materials

contamination. The Superfund Amendments and Reauthorization Act of 1986 amends some provisions of CERCLA and provides for a Community Right-to-Know program.

EPA has the authority to implement CERCLA in all 50 states and all United States territories, using a variety of enforcement tools, including orders, consent decrees, and other small-party settlements. Identification, monitoring, and remediation of Superfund sites are usually coordinated by state environmental protection or waste management agencies. When potentially responsible parties cannot be identified or located, or when responsible parties fail to act, the EPA has the authority to remediate abandoned or historical sites where hazardous materials contamination is known to exist and to pose a human health hazard.

Pursuant to CERCLA, the EPA maintains a National Priorities List (NPL) of uncontrolled or abandoned hazardous waste sites identified for priority remediation under the Superfund program. Sites are identified for listing on the basis of the EPA's hazard ranking system. Sites also may be placed on the NPL if they meet the following requirements.

- The Agency for Toxic Substances and Disease Registry of the U.S. Public Health Service has issued a health advisory that recommends removing people from the site.
- The EPA has determined that the site poses a significant threat to public health.
- It will be more cost-effective for the EPA to use its remedial authority than its emergency removal authority to respond to the hazard posed by the site.

Resource Conservation and Recovery Act

The Resource Conservation and Recovery Act (RCRA) (42 USC 6901 et seq.) was enacted in 1976 as an amendment to the Solid Waste Disposal Act to address the nationwide generation of municipal and industrial solid waste. RCRA gives the EPA authority to control the generation, transportation, treatment, storage, and disposal of hazardous waste, including underground storage tanks storing hazardous substances. RCRA also establishes a framework for the management of nonhazardous wastes. RCRA addresses only active and future facilities; it does not address abandoned or historical sites, which are covered by CERCLA (see preceding section).

RCRA was updated in 1984 by the passage of the federal Hazardous and Solid Waste Amendments, which required land disposal of wastes to be gradually phased out. The amendments also increased the EPA's enforcement authority and established more stringent hazardous waste management standards, including a comprehensive underground storage tank program.

Federal Aviation Administration Regulations Part 77 - Objections Affecting Navigable Airspace

The FAA has established standards for determining what constitutes an obstruction for navigable airspace as follows:

77.23 Standards for determining obstructions.

(a) An existing object, including a mobile object, is, and a future object would be, an obstruction to air navigation if it is of greater height than any of the following heights or surfaces:

(1) A height of 500 feet above ground level at the site of the object.

(2) A height that is 200 feet above ground level or above the established airport elevation, whichever is higher, within 3 nautical miles of the established reference point of an airport, excluding heliports, with its longest runway more than 3,200 feet in actual length, and that height increases in the proportion of 100 feet for each additional nautical mile of distance from the airport up to a maximum of 500 feet.

(3) A height within a terminal obstacle clearance area, including an initial approach segment, a departure area, and a circling approach area, which would result in the vertical distance between any point on the object and an established minimum instrument flight altitude within that area or segment to be less than the required obstacle clearance.

(4) A height within an en route obstacle clearance area, including turn and termination areas, of a Federal airway or approved off-airway route, that would increase the minimum obstacle clearance altitude.

(5) The surface of a takeoff and landing area of an airport or any imaginary surface established

State Regulations

The EPA granted the state primary oversight responsibility to administer and enforce hazardous waste management programs. In addition, state regulations, which are equal to or more stringent than federal regulations, require planning and management to ensure that hazardous wastes are handled, stored, and disposed of properly to reduce risks to human health and the environment. Several key state laws pertaining to hazardous wastes are discussed below.

Hazardous Materials Release Response Plans and Inventory Act of 1985

The Hazardous Materials Release Response Plans and Inventory Act, also known as the Business Plan Act, requires businesses using hazardous materials to prepare a hazardous materials business plan that describes their facilities, inventories, emergency response plans, and training programs. Under the Business Plan Act, *hazardous materials* are defined as raw or unused materials that are part of a process or manufacturing step. They are not considered hazardous waste, although the health concerns pertaining to the release or inappropriate disposal of these materials are similar to those relating to hazardous waste.

Hazardous Waste Control Act

The Hazardous Waste Control Act (HWCA) created the state hazardous waste management program, which is similar to, but more stringent than, the federal program under RCRA. The HWCA is implemented by regulations contained in 26 CCR, which describe the following aspects of hazardous waste management:

- identification and classification;
- sources;
- transport;
- design and permitting of recycling, treatment, storage, and disposal facilities;
- treatment standards;
- operation of facilities, including staff training;
- closure of facilities; and
- liability issues.

Regulations in 26 CCR list more than 800 materials that may be hazardous and establish criteria for identifying, packaging, and disposing of them. Under the HWCA and 26 CCR, hazardous waste generators must complete a manifest that accompanies the waste from the generator to the transporter to the ultimate disposal location. Copies of the manifest must be filed with the DTSC.

Emergency Services Act

Under the Emergency Services Act, the state developed an emergency response plan to coordinate emergency services provided by federal, state, and local agencies. Rapid response to incidents involving hazardous materials or hazardous waste is an important part of the plan, which is administered by the California Office of Emergency Services. This office coordinates the responses of other agencies, including the EPA, the California Highway Patrol, the nine RWQCBs, the various air quality management districts, and county disaster response offices.

California Occupational Safety and Health Administration Standards

Worker exposure to contaminated soils, vapors that could be inhaled, or possibly groundwater containing hazardous levels of constituents would be subject to monitoring and personal safety equipment requirements that are established in California Occupational Safety and Health Administration (Cal-OSHA) regulations (Title 8) and specifically address airborne contaminants. The primary intent of the Title 8 requirements is to protect workers, but compliance with some of these regulations also would reduce potential hazards to nonconstruction workers and Project Area occupants because required site monitoring, reporting, and other controls would be in place.

Workers who are in direct contact with soil or groundwater containing hazardous levels of constituents would perform all activities in accordance with a hazardous operations site-specific health and safety plan (HSP), as outlined in Cal-OSHA standards. An HSP is not required for workers such as heavy equipment

operators, carpenters, painters, or other construction workers who would not be performing investigation or remediation activities where direct contact with materials containing hazardous levels of constituents could occur. However, elements of an HSP protect those workers who may be adjacent to cleanup activities by establishing engineering controls, monitoring, and security measures to prevent unauthorized entry to cleanup sites and to reduce hazards outside the investigation/cleanup area.

Other State Laws, Regulations, and Programs

Additional state regulations that affect hazardous waste management include:

- the Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65), which requires the labeling of substances known or suspected by the state to cause cancer; and
- California Government Code 65962.5, which requires the Office of Permit Assistance to compile a list of potentially contaminated sites in the state.

Local Regulations

Livermore Municipal Airport Master Plan

The Livermore Airport Land Use Policy Plan acknowledges that the general plans prepared by the cities and County have effectively evaluated and planned for the needs and requirements of the airport. The Livermore Airport Land Use Policy Plan does not contain policies, but does contain the following land use recommendations from Chapter VIII D, Land Use Plans, applicable to the proposed Project, in order to "update the general plan recommendations in conformance with the best current estimates of the airport's growth and aviation requirements" (City of Livermore 1975).

> 1. Recommended land use within the approach areas but outside of clear zones, include agriculture, park and open space, light industry (warehousing, etc.) and roadside commercial, given that there are no buildings penetrating the approach surface or areas where there is a dense population.
>
> 3. The present zoning for the properties between the airport and Interstate 580, and to the east of the airport, in agriculture, should be continued, based upon present and potential noise impacts and flight clearances. Light industrial, office, highway commercial, and other airport compatible zoning can occur.

Airport Land Use Policy Plan

The Airport Land Use Policy Plan contains the following policies applicable to the proposed Project concerning the airport safety zone. The ALUPP includes an inner safety zone, extending up to 1,320 feet from the end of the runway and an outer safety zone extending up to 5,300 feet from the end of the runway

> 2. Within the inner portion of the safety zone, extending up to ¼ mile (1320 feet) from the end of the runway, the following are defined as incompatible land uses:

2.1. Permanent structures or objects projecting above the level of the primary surface of the runway.

2.2. Any use which on a regular basis would result in a density which would exceed 25 persons per net acre at a time.

2.3. Recommended uses include agriculture and open space. Non-permanent structures or objects, such as parking area for aircraft or automobiles, are permitted where object height is consistent with height restrictions contained in [Federal Aviation Regulation] Part 77.

3. Within the outer portion of the safety zone, extending beyond ¼ mile (1320 feet) from the end of e runway, new uses shall be non-residential, low density.

3.1. Suggested uses are agriculture, open space, non-intensive recreation, warehousing, non-intensive industry, and equipment storage.

3.2. Uses are defined as incompatible if they would yield a density of more than 25 person per net acre over an 8-hour period (long-term) or a density of more than 50 persons per net acre for more than 2 hours per day (short-term). In particular, new shopping centers, restaurants, schools, hospitals and arenas are not compatible.

3.3. Within the overall density limits identified in Policy 3.2, clustering of uses within a parcel may be compatible where such clustering provides emergency landing areas; avoids concentration of development along the extended runway centerline, and does not pose a hazard to air navigation.

4. Flammable liquids, as defined in the Uniform Fire Code, shall be stored underground (with appropriate safeguard).

5. To be consistent with the ALUC plan, proposed new land uses must be compatible with Policies #2 – #4 above. To be consistent with the ALUC plan, an existing local general plan or zoning ordinance shall not permit the incompatible uses identified in Policies #2 – #4.

The only project features within the inner safety zone would be redesigned golf course holes. The outer safety zone includes a small southern part of the Sywest property and all of the Johnson-Himsl property south of the proposed east-west roadway.

The City must find that the Construction of buildings or structures within the APA must conform to specifications outlined in the Alameda County Airport Land Use Policy Plan (ALUPP) (Alameda County Airport Land Use Commission 1986). The City will consult with the Alameda County Airport Land Use Commission to ensure that the Project is consistent with airport safety zone requirements.

City of Livermore
Environmental Health Department

In 1997, in response to Senator Charles Calderon's Senate Bill 1082, the County program, along with newly formed City-level programs, became certified by DTSC as "Unified Hazardous Waste and Hazardous Materials Management Regulatory Programs." Cities and the County then implemented the following programs within their geographic jurisdictional boundaries:

- hazardous waste generators and onsite treatment (tiered permitting);
- aboveground storage tanks (spill prevention control and countermeasure plan);
- underground storage tanks;
- hazardous material release response plans and inventories;
- risk management plan.

The Livermore-Pleasanton Fire Department is the Unified Program Agency for the City. As the Unified Program Agency, the Livermore-Pleasanton Fire Department verifies compliance with hazardous materials programs through inspections. The Livermore-Pleasanton Fire Department is responsible for underground storage tank installation oversight, including the review of locations and plans for design, secondary containment, tank tightness, corrosion protection, overspill protection, overfill protection, and monthly monitoring. It also reviews plans for primary and secondary piping and dispensers; location, design, leak, and crash protection; vapor recovery; and emergency shutoff systems.

Facilities housing aboveground storage tanks require inspections by the RWQCB and permits issued by the SWRCB.

Enforcement actions for violations are handled by the Alameda County District Attorney, the City Attorney, or an Administrative Enforcement Order process.

City of Livermore and Alameda County General Plans
Hazardous Materials

The City of Livermore General Plan requires environmental investigation of sites known or suspected to have housed hazardous materials (City of Livermore 2004a).

> ***PS*-4.1.P5.** When reviewing applications for new development in areas historically used for commercial or industrial uses, the City shall require environmental investigations as necessary to ensure that soils, groundwater, and buildings affected by hazardous material releases from prior land uses, and lead and asbestos potentially present in building materials, would not have the potential to affect the environment or the health and safety of future property owners or users.

Wildfire

Both the City and County general plans advocate and require that new development not be pursued in areas highly susceptible to wildland fire (Alameda County 2002 , City of Livermore 2004a). The City General Plan requires that all proposed development in wildland-urban interface areas be in conformity with the Wildland-Urban Interface Code, as periodically amended (General Plan Policy PS-3.1.P2.A1).

Airports

The City of Livermore General Plan provides for the review of development projects by the Alameda County Airport Land Use Commission for consistency with the APA policies and airport land use compatibility. It also provides the following policy.

> ***PS*-5.1.P1.** All construction in Livermore shall be consistent with the required setbacks and height restrictions for the Airport Protection Area, as well as the policies of a master plan adopted for future Airport operations.

Livermore Municipal Airport Master Plan

The Livermore Municipal Airport Master Plan does not include any directives regarding development within the APA (City of Livermore 1975).

The City must find that the construction of buildings or structures within the APA must conform to specifications outlined in the Alameda County Airport Land Use Policy Plan (Alameda County Airport Land Use Commission 1986). The City will consult with the Alameda County Airport Land Use Commission to ensure that the Project is consistent with any airport safety zone requirements.

Impact Analysis

Thresholds of Significance

The proposed Project would have a significant effect on public health and safety if it would:

- create a significant hazard to the public or the environment as a result of routine transport, use, production, upset, or disposal of hazardous materials;
- create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment;
- emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school;

- bring people into direct contact with hazardous materials on a listed hazardous materials site compiled pursuant to Government Code 65962.5;
- result in a safety hazard to people residing or working within an airport land use plan area; or
- impair the implementation of or interfere with an emergency response or evacuation plan.

Approach and Methodology

Impacts on the public and environment that could result from hazardous materials and other hazards were evaluated based on the results of the EDR report, which includes a list of all known hazardous sites in the study area and is assumed to be a preliminary inventory of all existing hazardous sites (Environmental Data Resources 2006). The analysis also is based on the known presence of other health-threatening factors in the project vicinity.

Evaluation of safety, fire, and emergency response impacts was performed, considering the relative location of the Project, the types of hazards present, and the proximity to emergency response services. It is assumed that hazardous spill prevention and response measures would be incorporated into the construction specifications.

Impacts and Mitigation Measures

Impact HAZ-1: Creation of a Hazard to the Public or the Environment through the Routine Transport, Use, or Disposal of Hazardous Materials—Less than Significant with Mitigation

A potential use of the Johnson-Himsl property is the operation of a gas station. Gas stations use and sell hazardous materials, primarily petroleum products, and contain underground and aboveground storage tanks. The parcel is currently vacant and would be zoned PD-ECSP-HRC under the Specific Plan. The PD-ECSP-HRC designation, as defined in the Specific Plan, would permit uses such as hotels, gas stations and restaurants, and other uses that cater toward interstate travelers. The construction and operation of a gas station and associated storage tanks would be in accordance with the Certified Unified Program Agency program administered by the Livermore-Pleasanton Fire Department, which regulates the construction and maintenance of, and permits the disposal of, both aboveground and underground storage tanks. The operation of a gas station would introduce transportation of fuels to the area. The transportation of hazardous materials is governed by the Department of Transportation as provided in 49 USC 5101 et seq. Spill response procedures for transportation related spills are outlined in 49 CFR 171.15, which requires that spills meeting certain criteria be reported to the National Response Center. The Livermore-Pleasanton Fire Department serves as the first responder for other hazardous materials spills. With these provisions in place, impacts associated with the possible construction

and operation of a gas station on the Johnson-Himsl property would be less-than-significant.

Construction of the proposed Project would require the use of vehicles and other construction equipment that use hazardous materials such as fuels, lubricants, and solvents. The accidental releases of small quantities of these substances during construction could contaminate soils and degrade the quality of surface water and groundwater, resulting in a public safety hazard. This impact is considered significant but can be reduced to a less-than-significant level with the implementation of Mitigation Measure HAZ-1.

Mitigation Measure HAZ-1: Prepare and Implement a Hazardous Materials Spill Prevention Control and Countermeasure Plan during Construction

As part of compliance with the NPDES General Construction Permit, a Hazardous Material Spill Prevention Control and Countermeasure Plan will be prepared for the use of construction equipment for the proposed Project and will minimize the potential for, and effects from, spills of hazardous, toxic, or petroleum substances during construction of the Project. This plan will describe storage procedures and construction site housekeeping practices and identify the parties responsible for monitoring and spill response. The measures and monitoring procedures required under the General Construction Permit will minimize the potential for the release of hazardous materials to the environment. The City will review and approve the Hazardous Materials Spill Prevention Control and Countermeasure Plan before allowing construction to begin. The City will routinely inspect active portions of the Project Area to verify that the BMPs specified in the plan are properly implemented and maintained, and will immediately notify the contractor if there is a noncompliance issue and will require compliance.

The federal reportable spill quantity for petroleum products, as defined in the EPA's CFR (40 CFR 110) is any oil spill that: (1) violates applicable water quality standards; (2) causes a film or sheen upon or discoloration of the water surface or adjoining shoreline; or (3) causes a sludge or emulsion to be deposited beneath the surface of the water or adjoining shorelines.

If a spill is reportable, the contractor's superintendent will immediately notify the Alameda County Department of Environmental Health and the DTSC, which have spill response and cleanup ordinances to govern emergency spill response. A written description of reportable releases will be submitted to the SFBRWQCB. This submittal will include a description of the release, including the type of material and an estimate of the amount spilled, the date of the release, an explanation of why the spill occurred, and a description of the steps taken to prevent and control future releases. The releases will be documented on a spill report form.

If a reportable spill has occurred, and results determine that project activities have adversely affected surface or groundwater quality in excess of water quality standards, a detailed analysis shall be performed by a Registered Environmental Assessor to identify the likely cause of contamination. This analysis will conform to ASTM standards and will include recommendations for reducing or eliminating the source or mechanisms of contamination. Based on this analysis, the City and its contractors will select and implement measures to control contamination, with a performance standard that water quality will be returned to baseline conditions. These measures will be subject to approval by the Alameda County Department of Environmental Health and DTSC.

Impact HAZ-2: Hazardous Emissions or Handling of Hazardous Materials, Substances, or Waste within 0.25 Mile of an Existing or Proposed School—Less than Significant with Mitigation

There are no existing schools located within 0.25 mile of the proposed Project. However, the alternate land use option for the Children's Hospital site could include construction and operation of a preschool and daycare, meeting rooms and classrooms, exterior children's playground areas, and playfields associated with the church campus. The location of the proposed school is more than 0.25 mile from the proposed gasoline station site, and gasoline deliveries would occur via El Charro Road, away from the proposed church campus. Therefore, impacts on the preschool and daycare caused by construction and operation of the gasoline station would be less-than-significant.

The church campus land use option may be constructed prior to the completion of all construction in the Project Area. In that instance, there would be the potential for hazardous emissions or handling of hazardous materials within a 0.25-mile radius of the school site during the construction of nearby parcels. However, the risk posed by construction activity would be considered less-than-significant because of the relatively small amounts of construction-related hazardous materials that would be used, the application of federal and state laws regulating response to hazardous spills (49 CFR 171.15; 49 USC 5101), Mitigation Measure HAZ-1, and the requirement that the construction contractor would handle all hazardous materials in accordance with applicable regulations to minimize the potential for exposure. With the implementation of Mitigation Measure HAZ-1, this impact is considered less than significant.

Mitigation Measure HAZ-1: Prepare and Implement a Hazardous Materials Spill Prevention Control and Countermeasure Plan during Construction

The full text of this measure is included above.

Impact HAZ-3: Location on a Site that Is Listed as Hazardous by the California Environmental Protection Agency or Other Government Agencies and, as a Result, Would Create a Significant Hazard to the Public or the Environment—Less than Significant with Mitigation

Construction of the Project on sites listed as hazardous by government agencies could expose employees and the public to hazardous materials. As noted in the

setting of this section, there are several sites in and around the project alignment that are listed as hazardous in government databases. Various organic substances, metals, petroleum products, and other chemicals may be present in the soil at these sites. Therefore, soil disturbance from excavation, grading, and trenching activities in these areas could expose construction workers and the public to contaminated dust or soil gases. This impact is considered significant but can be reduced to a less-than-significant level by implementing Mitigation Measures HAZ-3a and HAZ-3b.

The alternate land use option for the Children's Hospital parcel could include the construction and operation of a preschool and daycare, meeting rooms and classrooms, exterior children's playground areas, and playfields associated with the church campus. California Education Code 17213 regulates the siting of schools and requires that hazardous substance release sites be remediated prior to construction. Complying with this regulation results in impacts on this land use option being less than significant.

Mitigation Measure HAZ-3a: Perform a Phase I Investigation for the Project Alignment

As outlined in the City of Livermore General Plan Policy PS-4.1.P5, a Phase I site assessment will be required as part of each proposed development prior to the onset of construction activities. The Phase I site assessment will conform to standards of the ASTM and will include recommendations for reducing or eliminating the source or mechanisms of contamination (or pathways of exposure to such contamination) if contamination is found and remediation/control measures are determined to be necessary concerning construction-period exposure and the handling of contaminated material. The City and its construction contractors or the contractors for specific development projects within the Specific Plan Area will implement the recommendations of the Phase I site assessment relative to construction. This mitigation measure may be conducted in coordination with Mitigation Measure HAZ-3b as appropriate.

Mitigation Measure HAZ-3b: Prepare a Health and Safety Plan for Construction Activities on Known Hazardous Materials Sites

If construction is anticipated to take place on a known hazardous materials site, as required by Cal-OSHA standards, a hazardous operations site-specific HSP for construction activities that take place on this site will be prepared and implemented. The site-specific HSP will be developed, as necessary, by an environmental contractor before any investigation or cleanup activities or construction activities begin in the area. Workers who could directly contact soil, vapors, or groundwater containing hazardous levels of constituents will perform all activities in accordance with the HSP.

Impact HAZ-4: Creation of a Hazard through the Accidental Exposure or Mobilization of Hazardous Materials during Construction—Less than Significant with Mitigation

Grading, trenching, and other ground-disturbing activities have the potential to expose or mobilize hazardous substances in soils, sediments, and groundwater. As described in the setting above, EDR's search of federal, state, and local environmental records for the study area showed that there are potential hazardous materials sites in the vicinity of the proposed Project Area, so it is possible that construction near these sites could result in hazards related to the mobilization of such substances. In addition, there is the possibility that unknown or unrecorded contamination exists because of past agricultural or industrial uses or construction activities in the area. The exposure of construction workers to such materials would represent a significant impact but would be reduced to a less-than-significant level by incorporation of the following mitigation measure.

Mitigation Measure HAZ-4: Stop Work and Implement Hazardous Materials Investigations/Remediation

Prior to the onset of construction, all construction workers will be trained in the identification of potentially contaminated soil and water, including information on the characteristics of potential contamination, such as discolored soil, oils or sheens on water, and unusual odors. In the event that hazardous materials are encountered during construction, all construction activities in the area of the discovery will stop, and the project owner will conduct hazardous materials investigations to identify the nature and extent of contamination and evaluate potential impacts on project construction. If necessary, the City will implement remediation measures consistent with all applicable local, state, and federal codes and regulations. Construction will not resume until remediation is complete. If waste disposal is necessary, the City will ensure that all hazardous materials removed during construction are handled and disposed of by a licensed waste-disposal contractor and transported by a licensed hauler to an appropriately licensed and permitted disposal or recycling facility, in accordance with local, state, and federal requirements.

Impact HAZ-5: Safety Hazards near a Public or Public-Use Airport—Less than Significant

Although the proposed Project is located within the APA established for the Livermore Municipal Airport, the Project would not result in a safety hazard relevant to the airport.

The City has reviewed the FAA Regulations (Part 77) concerning obstacles to navigable airpace as they apply to the Livermore Municipal Airport and surrounding areas and has identified that neither the Specific Plan, the proposed project, potential future development in compliance with the Specific Plan, nor any associated infrastructure would constitute an obstacle to navigable airspace. The City has requested a review of the proposed Project by the FAA to confirm the City's evaluation.

The proposed Specific Plan zoning districts, policies, and guidelines for development, as well as the design of the east/west roadway extension, are consistent with those prescribed in the Airport Master Plan and the Alameda County Airport Land Use Policy Plan (ALUPP) for the required setbacks, height restrictions, and density limitations within the APA.

The Project would be constructed in accordance with safety guidelines in the Airport Master Plan. In addition, alternate uses on the Children's Hospital parcel must be consistent with the Airport Master Plan and Specific Plan policies and guidelines.

Development on the small portion of the Sywest property within the ALUPP outer safety zone would be constrained by the 100-foot setback from Arroyo Las Positas and site approval would apply ALUPP density requirements to the portion of the property within the safety zone.

The Specific Plan would allow shopping center and restaurant use on the Johnson-Himsl property south of the proposed east-west roadway extension among other uses. Although ALUPP Policy 3.2, nominally states that shopping centers and restaurants are not compatible with outer safety zone requirements, ALUPP Policy 3.3 specifies that clustering of development within the overall density limits will be compatible if such clustering provides an open area suitable for emergency landing, avoids concentration of development along the extended runway centerline and does not pose a hazard to air navigation. The Specific Plan requires clustering of development on the northern portion of the Johnson-Himsl property to ensure that the density limitations of Policy 3.2 are met and that the clustering requirements of Policy 3.3 are met and thus that overall potential development on this property would meet the requirements of the ALUPP. The City will confer with ALUC to ensure compliance with the ALUPP for the Specific Plan and for specific development approvals.

Thus, with implementation of the Specific Plan, the Project's impact on safety related to the airport would be less than significant, and no mitigation is required.

Impact HAZ-6: Impairing the Implementation of or Physically Interfering with an Adopted Emergency Response Plan or Emergency Evacuation Plan during Construction—Less than Significant with Mitigation

Construction of the proposed improvements to existing roadways could require temporary lane closures that may result in the alteration of EVA routes. This impact is considered significant and can be reduced to a less-than-significant level by implementing Mitigation Measure HAZ-6.

Mitigation Measure HAZ-6: Prepare and Implement a Traffic Control Plan

Prior to the issuance of each building permit, the project applicants and construction contractor will meet with City and County staff to determine traffic management strategies to reduce, to the maximum extent feasible, traffic congestion during construction of this Project. The project

applicants will develop a construction management plan for review and approval by the City and County. The plan will include at least the following items and requirements.

- A set of comprehensive traffic control measures, including the scheduling of major truck trips and deliveries to avoid peak traffic hours, detour signs and flag person if required, lane closure procedures, signs, cones for drivers, and designated construction access routes. In addition, the information will include a construction staging plan for any public right-of-way used for each phase of the Project.
- Provisions for parking management and spaces for all construction workers for each phase of construction.
- Notification procedures for adjacent property owners regarding when major deliveries, detours, and lane closures will occur.
- The location of construction staging areas for materials, equipment, and vehicles.
- The identification of haul routes for the movement of construction vehicles that would minimize impacts on vehicular traffic, circulation, and safety; and a provision for monitoring surface streets used for haul routes so that any damage and debris attributable to the haul trucks can be identified and corrected by the project applicants.
- A process for responding to, and tracking, complaints pertaining to construction activity, including identification of an on-site complaint manager.

Impact HAZ-7: Impairing the Implementation of or Physically Interfering with an Adopted Emergency Response Plan or Emergency Evacuation Plan as a Result of Project Phasing—Less than Significant

The construction of road improvements may be phased depending upon the implementation schedule of the various developments. As noted in Chapter 2, "Project Description," if the completion of Jack London/Airway Boulevard is not required prior to the opening of some retail establishments, an EVA road will be constructed connecting Jack London/Airway Boulevard to SR 84. With these measures, the impact of construction on emergency response would be less than significant. No mitigation is required.

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3.8 Hydrology and Water Quality

This section describes the setting and potential hydrology and water quality impacts of the proposed Project. Specifically, it describes existing conditions related to hydrology and water quality and summarizes the overall federal, state, and regional/local regulatory framework that would affect implementation of the proposed Project. This section then analyzes the potential impacts of the proposed Project on hydrology and water quality and identifies mitigation measures to address significant impacts.

Sources of data used in the preparation of this section included the following.

- *The Altamont Pipeline Project Draft EIR* (Jones & Stokes 2004).
- *Groundwater Management Plan* for Livermore-Amador Valley Groundwater Basin (Jones & Stokes 2006a).
- *The Water Quality Control Plan for the San Francisco Bay Basin* (Basin Plan) (San Francisco Bay Regional Water Quality Control Board 1995).
- *Well Master Plan—Final Environmental Impact Report* (ESA 2004).
- *The California Regional Water Quality Control Board, San Francisco Bay Region, Alameda Countywide NPDES Stormwater Permit, Order R2-2003-0021, NPDES Permit No. CAS0029831 with Alameda County Clean Water Program, February 27, 2004.*
- *Hydrology and Hydraulics: El Charro Specific Plan Area* (Schaaf & Wheeler 2006).
- Flood insurance study for Livermore California (Federal Emergency Management Agency September 17, 1997).
- Zone 7 comments on El Charro Notice of Preparation, *Lim Comments, June 21st, 2006*. The Stream Management Master Plan draft and final EIRs (ESA 2006).

Environmental Setting

Existing Conditions

Surface Water Hydrology

The proposed Project is in the Alameda Creek watershed, which encompasses approximately 448,000 acres. The watershed drains west to the San Francisco Bay from the area bounded by the Altamont Pass in the east, Mount Hamilton in the south and Black Hills in the north. The watershed is typical of the central California Coast Ranges, where major stream flows occur during the months of November through March and little to no flow occurs during the summer.

Average annual rainfall ranges from 14 inches on the valley floor to 20 inches in the northwest. Table 3.8-1 shows the climatic regime for Livermore.

Table 3.8-1. Climatic Regime for Livermore, Averages from 1930 to 2005.

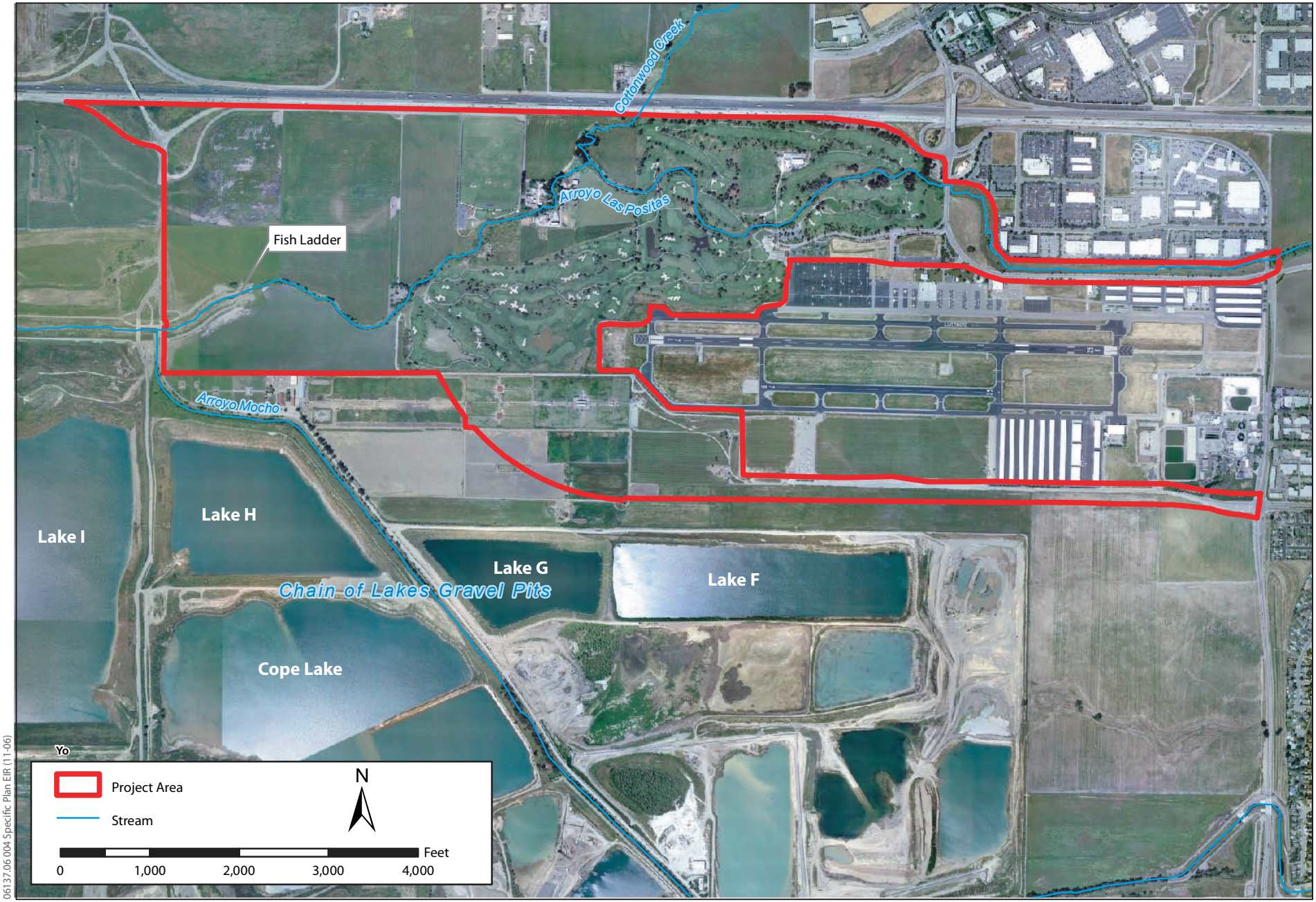
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max. Temperature (°F)	56.6	60.9	65	70.5	76.8	83.2	89.5	88.8	86.4	78.1	66	57.4	73.3
Average Min. Temperature (°F)	36.4	39.1	41.1	43.5	47.8	51.8	54.3	54.1	52.5	47.6	40.9	37	45.5
Average Total Precipitation (in.)	2.91	2.57	2.12	1.1	0.44	0.1	0.02	0.05	0.16	0.71	1.72	2.63	14.53

Source: Western Region Climate Center, gage 044997, data retrieved 2006.

Major tributaries to Alameda Creek that cross or are immediately adjacent to the project boundaries are the Arroyo Mocho, the Arroyo Las Positas, and Cottonwood Creek. Surface water bodies in the Project Area are shown in Figure 3.8-1. Figure 3.8-2 shows the topography of the site. South of the Project Area and in close proximity to the flowpath of the Arroyo Mocho is an extensive series of inundated quarry and gravel pits also known as the Chain of Lakes. Additionally, a number of manmade ponds are found within the golf course. Section 3.4, "Biological Resources," includes a discussion of wetlands and other waters within the Project Area.

The Arroyo Mocho, which runs south of the Project Area, is part of the Alameda Creek upper watershed and is a major drainage feature through the Livermore Valley. Starting in Santa Clara County and flowing generally in a northwesterly direction, it drains approximately 36,000 acres. Considering the Mediterranean climatic regime with long periods of summer drought and winter storms, the Arroyo Mocho's flow is variable. During the summer months, the base flows in this channel are generally low, and dependent upon releases from Zone 7's turnouts for the purpose of directing water to the chain of lakes for the purpose of recharging the groundwater table. At times during the summer, it runs dry. As it moves through the Livermore Valley, it becomes increasingly channelized, leveed, and surfaced with rock riprap and concrete. Through the city of Livermore, it has been artificially aligned with Stanley Boulevard and El Charro Road. In closer proximity to the Project Area, the leveed channel bifurcates the Chain of Lakes system, with the majority of the lakes, or quarry pits, to the south.

The Arroyo Las Positas, which runs through the Project Area, is a major drainage feature through the Livermore Valley. It drains approximately 51,000 acres and receives summer flow inputs from irrigation, urban flows, and agricultural uses in the watershed. As a result of this input, the Arroyo Las Positas has perennial flow. The creek originates in the Altamont Hills and continues in a westerly

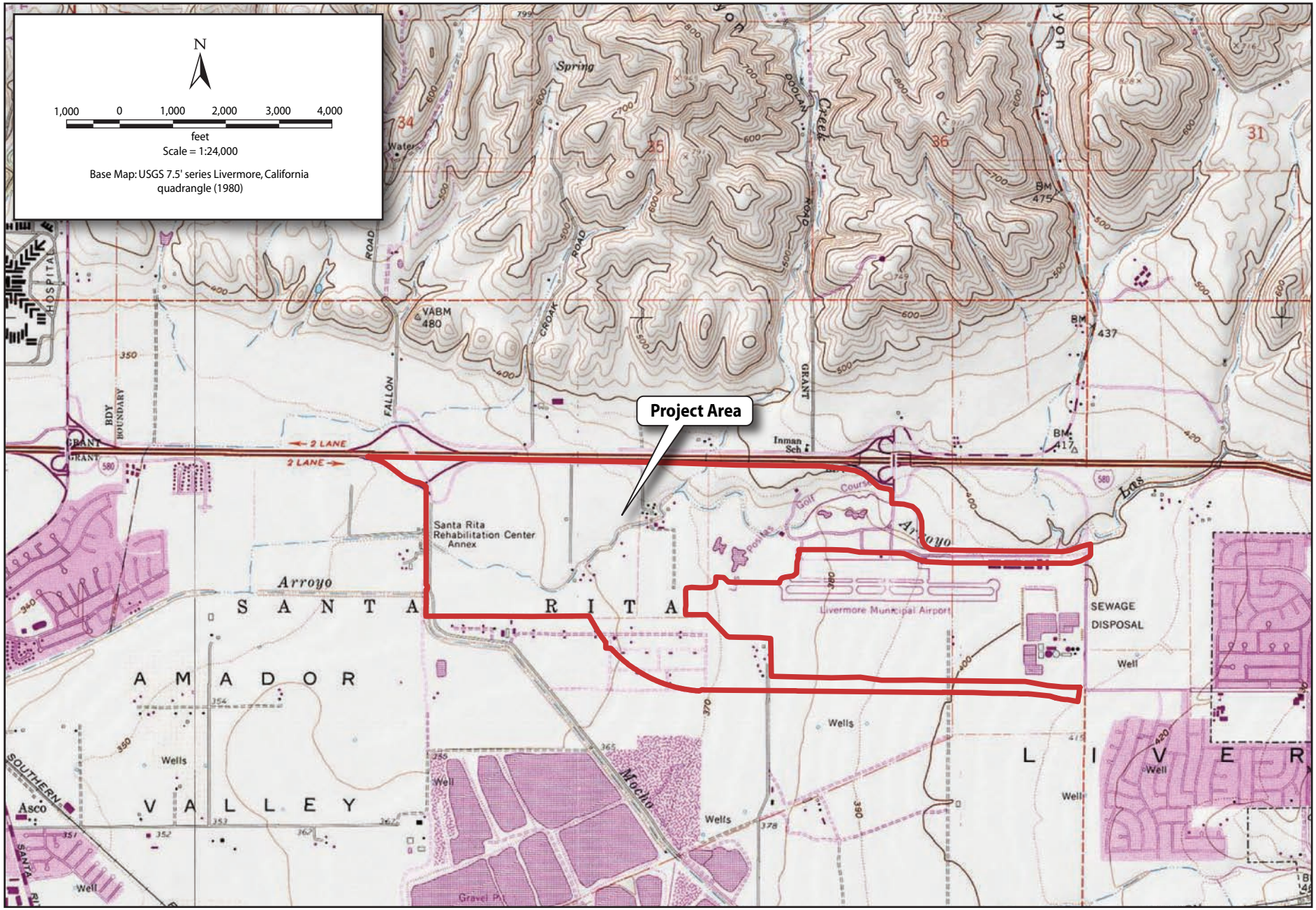


06137.06 004 Specific Plan EIR (11-06)

Jones & Stokes

Figure 3.8-1
Hydrologic Features in the Project Area

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06137.06 004 EIR Visual Assessment (11-06)

Jones & Stokes

Figure 3.8-2
Local Topography

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direction through the Springtown Alkali sink, the Spingtown Golf Course, residential development, farmland, and at times is enclosed in flood control channels. Crossing south of I-580 east of North Livermore Avenue, the creek becomes channelized in an engineered earth channel with accumulated sediment constricting peak flows. As the creek crosses Airway Road and enters Las Positas Golf Course, peak flows are constrained due to sedimentation and vegetation as it enters the Project Area. Moving through the Project Area, the stream supports a well-developed and mature willow riparian habitat as it runs through the golf course, over a fish ladder, and to its confluence with the Arroyo Mocho. Throughout this constrained reach of the creek flood flows greater than a 10-year frequency flow over the banks to the adjacent land. The flows overtopping to the north flow across El Charro Road, north across I-580 and eventually flow into the G3-1 flood control channel and back into Arroyo Las Positas. The flows overtopping to the south pond to the low-lying land east of El Charro Road, north of the quarries and south of Arroyo Las Positas eventually flow back into the Arroyo Las Positas. Immediately upstream of the confluence with Arroyo Mocho, a small portion (approximately 1,200 feet) of the Arroyo Las Positas at the western end of the Project Area was realigned in an effort to improve flood conveyance through the project site and the site just west of El Charro Road Below this point, flows from the Zone 7 G3-1 Flood Control Channel enter this creek and then flow to the Arroyo De La Laguna which in turn flows into Alameda Creek. Alameda Creek eventually enters the San Francisco Bay.

A minor, ephemeral tributary to the Arroyo Las Positas, Cottonwood Creek, is on the northeastern portion of the Specific Plan Area (within the Children's Hospital property). Cottonwood Creek runs north-south and drains Doolan Canyon from the foothills of the Black Hills. The watershed area for Cottonwood Creek is approximately 2,700 acres.

Drainage and Flooding

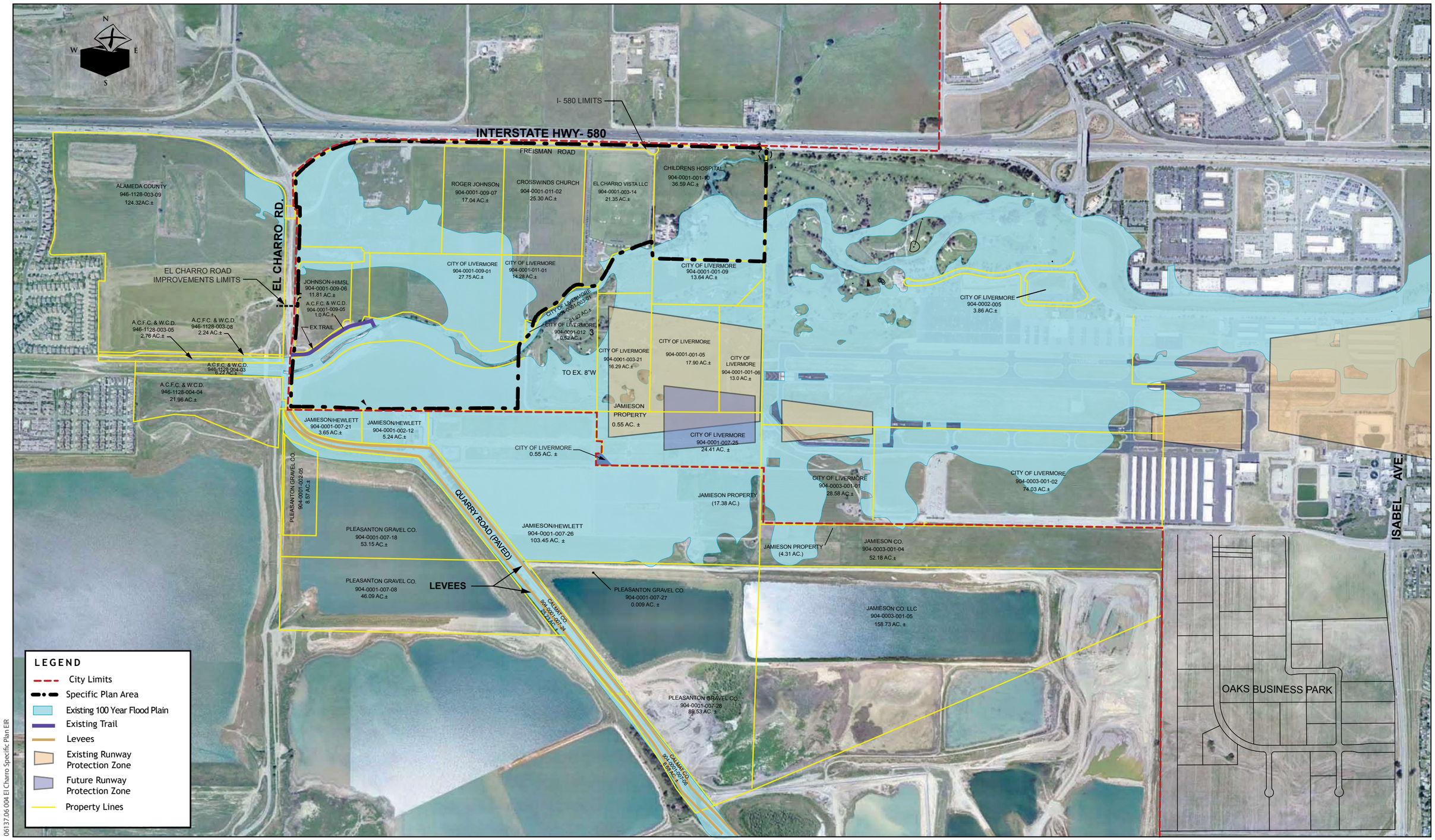
The City of Livermore became a member of the National Flood Insurance Program (NFIP) in 1978 and is responsible for Floodplain Management within the city limits. All new development and improvements built since 1978 must meet the NFIP requirements. According to the FEMA flood insurance rate maps (FIRMs) for Livermore, over half of the developable land in the Project Area is in the 100-year floodplain. More specifically, 88 acres of the Project Area is identified in the effective FIRM as in Zone AE, which is designated as a Special Flood Hazard Area Inundated by 100-year Flood with known Base Flood Elevations (BFEs). According to FEMA (1997), the 100-year flood elevations across the Project Area range from an elevation of 357 feet to 374 feet, which corresponds to a flood depth of one to two feet, on average. The extent of the floodplain is important from project design, legal, and flood insurance perspectives, since new development is not allowed within the floodplain.

The current FIRM maps no longer reflect the actual existing conditions of the floodplain. Consequently, the civil engineering firm Schaaf & Wheeler (2006)

has conducted extensive investigations of the area, including new data gathering and HEC-RAS model production, to delineate new 100-year floodplain with and without levee failure along the Arroyo Mocho and the 15-year floodplain without levee failure. Figure 3.8-3 shows the Schaaf & Wheeler 100-year floodplain delineations. This figure shows that 51 acres of developable land within the Specific Plan area are actually in the floodplain. This represents about one-third of the developable land in the Specific Plan area. With the flood control improvements proposed with the Project, the developable land within the Specific Plan Area along with the land just west of El Charro Road will be taken out of the floodplain. To reflect these existing conditions and planned project improvements, a CLOMR will be filed prior to altering the creek and flood capacity, and a LOMR will be filed after that construction but prior to the City's acceptance of the constructed improvements.

Anticipating the necessity for filing a CLOMR and LOMR, Schaaf & Wheeler analyzed flooding for conditions resulting with and without levee failure. For the newly defined 100-year floodplain existing conditions without levee failure, the Arroyo Las Positas overtops both its north and south banks (Figure 3.8-3). The estimated volume and rate of flood flows as they enter the Project Area are 8,570 cubic feet per second (cfs). The smaller, northern flows amounting to 430 cfs would leave the stream upstream of the fish ladder, flowing north across El Charro Road and I-580, before the flows are conveyed to the G3-1 flood control channel into Arroyo Las Positas west of the project area. The larger, southern flows leave the stream at three locations: above the golf course and at two locations within the golf course, with flows of 5,380, 1,700, and 1,060 cfs, respectively. These flows move overland to the southwest where they pond behind the natural and artificial levees upstream of the confluence of the Arroyo Las Positas and the Arroyo Mocho. The Arroyo Mocho flows pass under Isabel Avenue during the 100-year flood event carrying flows of 4,430 cfs, some of which overtop its banks further downstream. Most of the flood flows (2,800 cfs) overtop the southern levee and are routed along Stanley Boulevard to the west, but a small portion of the flood flows (275 cfs) would overtop the northern levee and travel overland to the northwest, thereby contributing to the ponding behind the natural and artificial levees mentioned above. Before its confluence with the Arroyo Las Positas, the Arroyo Mocho channel has a capacity of 1,350 cfs. This incidental storage would be maintained in place up to a surface water level of 359.24 feet (National Geodetic Vertical Datum [NGVD] 1929) (Schaaf & Wheeler 2006).

In the levee failure scenario, levee failures along the eastern banks of the Arroyo Mocho near the gravel pits would reduce the channel capacity to 200 cfs and result in an additional 1,150 cfs of flow that would enter the temporary and incidental storage area behind and upstream of the natural and artificial levees at the confluence of the Arroyo Las Positas and the Arroyo Mocho). The crest height increases to 359.37 feet (NGVD)(Schaaf & Wheeler 2006).



06137.06 004 El Charro Specific Plan EIR

Jones & Stokes

Figure 3.8-3
Existing 100-Year Floodplain

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Groundwater Hydrology

The Project Area is within the Livermore Valley groundwater basin. The basin covers approximately 69,700 acres, which extend west to east from the Pleasanton Ridge and the Calaveras fault to the Altamont Hills and the Greenville fault, and extend north to south from the Tassajara Upland to the Livermore Upland and Verona fault. The faults in the area prevent lateral movement of groundwater. The valley floor, formed by a faulted asymmetric syncline, overlies deposits from alluvial fans, outwash plains, streambeds and lakes composed of valley-fill materials, the Livermore Formation, and the Tassajara Formation. The alluvium consists of unconsolidated gravel, sand, silt, and clay. The maximum depth of the alluvial deposits is less than 100 feet in east Livermore Valley and increases to 400 feet east of Pleasanton. The Livermore and Tassajara Formations are deeper, up to 4,000 feet thick, and consist of materials typical in seafloor deposits containing gravel, sand, chert, shale, and clays. The general groundwater gradient flows to the west and then south toward the Arroyo de la Laguna. The total storage capacity of the basin is approximately 500,000 acre-feet (af), while the amount of groundwater in storage was estimated at 219,000 af in 1999.

The basin is divided into a primary Main Basin and secondary Fringe Basins. The Main Basin is composed of Amador, Bernal, Castle, and Mocho II subbasins. The Project is within the Main Basin, specifically the Amador subbasin. Groundwater levels in the Main Basin can range from 10 to 20 feet below the surface in unconfined aquifers. The subbasin is bounded to the west by the Pleasanton fault, to the east by the Livermore fault, to the north by a permeability barrier of interfingering of alluvial deposits and partly by contact with non-water-bearing formations. This subbasin has high production wells.

Zone 7 has actively used the Livermore Valley groundwater basin as a supply of drinking water since 1974. Zone 7 currently operates 210 wells annually. Zone 7 prepares a Well Master Plan in 2004, which identifies the construction of additional water wells in the Chain of Lakes area. While most of the new wells are proposed south of the project area, there may be a need to place some within the project area. The California Water Service Company also operates wells within the city of Livermore; however, all of them are outside the Project Area. According to Zone 7 monitoring reports, the groundwater budget is essentially in balance with a slight net deficit (790 af). Approximately 10,000 af are extracted for domestic water supply; 190 af, for agricultural uses; and 12,600 af, for gravel mining operations. Natural and artificial recharge from rainfall, releases from the South Bay Aqueduct or Lake Del Valle (which is approximately 8 miles southeast of the project area), and gravel mining recharge to the Arroyo Mocho and the Arroyo Del Valle (which drains from Lake Del Valle, travels in a northwesterly fashion, passes south of the project area, eventually joining with the Arroyo Mocho upstream of Bernal) account for approximately 22,000 af per year. The Amador subbasin well production ranges from 42 to 2,820 gallons per minute (gpm) and specific capacities of 1.1 to 217 gpm per foot of drawdown (ESA 2006).

Geomorphology and Soil and Infiltration Conditions

A series of buckling, contractional structures in the Mount Diablo/Livermore Valley region has accommodated significant south-southwest/north-northeast directed crustal shortening 1.6 to 5.3 million years ago. For convenience, this series of structures is informally referred to as the Mount Diablo fold-and-thrust belt. Regional cross sections suggest that the asymmetric Tassajara anticline or convex ridge is a regionally significant fault-propagation fold associated with reverse movement of the Mount Diablo thrust fault. The Tassajara anticline is geomorphically well-defined by a series of west-northwest trending hills between Livermore Valley and the south flank of Mount Diablo that are underlain by uplifted and strongly folded Neogene (1.6 to 23.7 million years ago) and younger sediments. Quaternary or recent uplift associated with the geomorphic development of the Tassajara anticline is the inferred primary control on drainage evolution in these foothills north of Livermore Valley (Sawyer 1999). The valley floor, formed by a faulted asymmetric syncline or concave valley, overlies deposits from alluvial fans, outwash plains, streambeds and lakes composed of valley-fill materials, the Livermore Formation, and the Tassajara Formation. The alluvium consists predominantly of unconsolidated gravel, sand, silt and clay.

The distribution of terraces along the Arroyo Las Positas and its channel characteristics reflect relatively recent stream-channel adjustments. The distribution of fluvial terraces and pattern of long-term incision of the Arroyo Las Positas appears to reflect terrace formation in response to late Quaternary growth of the Springtown hillslopes (Sawyer 1999). In its current form, the channel through the golf course is incised to about 7 feet through the alluvium with the banks 2–3 feet lower on the southern side of the channel (Schaaf & Wheeler 2006).

The general fluvial geomorphology of the Project Area is an alluvial floodplain and upland terraces of various ages that have been converted to agricultural fields, to golf courses, and to support commercial infrastructure. The soils in and around the Project Area are made up of Clear Lake clays, Diablo clays, Rincon clay loams, Sunnyvale clay loams, Sycamore silt loams, and Yolo gravelly loams. The majority of the Project Area is underlain by clays, clay loams and silt loams, all of which are poorly draining soils with slow or very slow infiltration rates. There is a smaller proportion of gravelly loams that are well draining and have a high infiltration rate (Natural Resources Conservation Service 2006). Further discussion of the geology and soils in the Project Area is included in section 3.6, “Geology, Soils, and Paleontology.”

Water Quality

Descriptions of key water quality parameters in relation to surface water and groundwater quality are provided in the following sections. Depending on the available information, local groundwater quality and surface water quality are described in more detail below.

Surface Water Quality

The USGS and SFBRWQCB have monitored water quality within the Project Area. The USGS monitored four sites along the Arroyo Las Positas for water quality during the early 1980s (U.S. Geological Survey 2004). Four sites within the Project Area were monitored in 2001 and 2002 by the SFBRWQCB (2004). Using additional sources and locations, Zone 7 has created a water flow record back to 1912 and water quality data back to 1948. These data suggest that the water quality of the Arroyo Las Positas has remained relatively unchanged throughout the past 20 years. Water quality objectives are being met for most constituents. Total dissolved solids (TDS) thresholds, however, are exceeded regularly, and the water is high in chlorides. Alkaline soils in natural sections of the creek are a contributing factor of the elevated TDS levels. Existing erosion of bed and banks is also contributing sediment to the creek.

Extensive water quality data were not available for the Arroyo Mocho or Cottonwood Creek. However, the water quality is expected to reflect the land uses in the watershed. Land uses surrounding the creeks include open space, urban/industrial, and agricultural uses. Open space is not anticipated to contribute pollutants to water bodies above background levels, except when it includes grazing, which would typically contribute sediment, nutrients, and bacteria. Urban and agricultural land uses typically contribute sediment, hydrocarbons and metals, pesticides, nutrients, bacteria, and trash. The proposed land uses would be expected to contribute similar contaminants.

The proposed Project crosses the Arroyo Las Positas and borders the Arroyo Mocho, both of which are listed as highly impaired water bodies under Section 303(d) of the CWA for diazinon from urban runoff and storm drains. Moving downstream from the Project Area, the Arroyo de la Laguna and Alameda Creek are both highly impaired for diazinon from urban runoff and storm drains. The southern San Francisco Bay, the receiving waters for Alameda Creek, is impaired by a number of constituents.

Groundwater Quality

Groundwater quality is highly variable throughout the Livermore Valley groundwater basin. Zone 7 actively monitors the groundwater quality of the basin. There has been a net increase in TDS, and the associated salt content, over time. Based on the 1974 baseline of storage volume and salt concentration, as well as annual fluxes in recharge and salts, estimates of the 2005 theoretical TDS basin-wide is 710 milligrams per liter (mg/L) (Jones & Stokes 2006a). At two key wells monitored by Zone 7 over the past ten years, actual TDS levels have fluctuated between 410 to 790 mg/L with most of the records between 470 to 620 mg/L. (Jones & Stokes 2006a.) Zone 7 has identified recharge of local streamflow, recharge of imported water, subsurface inflow, and irrigation return flows as major sources of salt to the main basin. Elevated nitrate plumes occur in the central and eastern valley from livestock manure and the historic usage of septic tanks. For the Amador subbasin, waters are of good to excellent quality, characterized by sodium bicarbonate, magnesium bicarbonate, and calcium bicarbonate with a few instances of elevated levels of boron (likely from natural sources in soils) and nitrate (likely from agricultural contributions).

Regulatory Setting

Federal Regulations

The following sections briefly describe federal water quality control programs, plans, and policies that are applicable to the proposed Project.

Federal Clean Water Act

There are several sections of the CWA that pertain to regulating impacts on waters of the United States. Section 101 specifies the objectives of CWA implemented largely through Title III (Standards and Enforcement) and Section 301 (Prohibitions). The discharge of dredged or fill material into waters of the United States is subject to permitting specified under Title IV (Permits and Licenses) of CWA and specifically under Section 404 (Discharges of Dredge or Fill Material). Section 401 (Certification) specifies additional requirements for permit review, particularly at the state level.

Section 303—Total Maximum Daily Load Program

The State of California adopts water quality standards to protect beneficial uses of state waters as required by CWA 303 and the state's Porter-Cologne Water Quality Control Act of 1969. CWA 303(d) established the total maximum daily load (TMDL) process to guide the application of state water quality standards (see the discussion of state water quality standards below). To identify candidate water bodies for TMDL analysis, a list of water-quality–limited streams is generated. These streams are impaired by the presence of pollutants, including sediments, and have no additional assimilative capacity for these pollutants. A water quality attainment strategy and TMDL to address the previously described Arroyo Las Positas diazinon impairment was completed in March 2004 by SFBRWQCB.

Section 401—Water Quality Certification

CWA 401 requires that an applicant pursuing a federal permit to conduct any activity that may result in a discharge of a pollutant obtain a water quality certification (or waiver). Water quality certifications are issued by RWQCBs in California. Under CWA, the state (as implemented by the relevant board) must issue or waive CWA 401 water quality certification for the Project to be permitted under CWA 404. Water quality certification requires the evaluation of water quality considerations associated with dredging or the placement of fill materials into waters of the United States. Construction of the proposed Project would require CWA 401 certification for the Project if CWA 404 were triggered.

Section 402—National Pollutant Discharge Elimination System Program

The 1972 amendments to the Federal Water Pollution Control Act established the NPDES permit program to control discharges of pollutants from point sources (CWA 402). The 1987 amendments to CWA created a new section of CWA devoted to stormwater permitting (CWA 402[p]). The EPA has granted the State

of California primacy in administering and enforcing the provisions of CWA and the NPDES permit program. The NPDES permit program is the primary federal program that regulates point-source and nonpoint-source discharges to waters of the United States.

SWRCB issues both general and individual permits for certain activities. Relevant general and individual NPDES permits are discussed below.

Construction Activities

Construction activities are regulated under the NPDES General Construction Permit provided that the total amount of ground disturbance during construction exceeds 1 acre. The appropriate RWQCB enforces the General Construction Permit. Coverage under a General Construction Permit requires the preparation of a SWPPP and submittal of a notice of intent (NOI). The SWPPP includes pollution prevention measures (erosion and sediment control measures and measures to control nonstormwater discharges and hazardous spills), demonstration of compliance with all applicable local and regional erosion and sediment control standards, identification of responsible parties, a detailed construction timeline, and a BMP monitoring and maintenance schedule. The NOI includes site-specific information and the certification of compliance with the terms of the General Construction Permit.

Dewatering Activities

Small amounts of construction-related dewatering are covered under the General Construction Permit. Large amounts of dewatering, particularly over lengthy periods of time would be required to comply with the General Dewatering Permit. Project-related dewatering is likely to be limited in nature and scope and would likely be covered under the General Construction Permit.

Discharges associated with potable pipeline dewatering (i.e., operational dewatering) are covered as conditionally exempted discharges under the Alameda Countywide Clean Water Program's municipal stormwater NPDES permit, of which the City of Livermore is a co-permittee. These discharges are allowed if they are not sources of pollutants to receiving waters or if appropriate control measures are implemented to prevent or eliminate the adverse impacts of such sources. These measures include treatment of stormwater, on-site containment of water and subsequent discharge to the sanitary sewer, and, where discharge to surface waters is unavoidable, dechlorination and controlling the discharge rate to prevent erosion of the receiving water.

Ongoing Stormwater Treatment

The individual NPDES permit requires that permanent water quality control devices treat all stormwater to the maximum extent practicable. Runoff from new impervious surfaces of 10,000 square feet or more must be sized according to the volume or rate criteria identified in the permit. After treatment devices are installed, owners must enter into a maintenance agreement with the City to

ensure the treatment devices are maintained, inspected, and reported on annually. Additionally, hydromodification impacts to the creeks must be identified and addressed through detention or other means approved by the SFBRWQCB. Further discussion about the Alameda Countywide Cleanwater Program's NPDES permit is provided below.

Section 404

CWA 404 regulates the discharge of dredged and fill materials into waters of the United States, which include oceans, bays, rivers, streams, lakes, ponds, and wetlands. Project proponents must obtain a permit from the USACE for all discharges of dredged or fill material into waters of the United States, including wetlands, before proceeding with a proposed activity. Before any actions that may impact surface waters are carried out, a delineation of jurisdictional waters of the United States must be completed following USACE protocols (Environmental Laboratory 1987) to determine whether the Project Area encompasses wetlands or other waters of the United States that qualify for CWA protection. These include any or all of the following:

- areas within the ordinary high water mark of a stream, including nonperennial streams with a defined bed and bank, and any stream channel that conveys natural runoff, even if it has been realigned; or
- seasonal and perennial wetlands, including coastal wetlands.

Wetlands are defined for regulatory purposes as areas "inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 CFR 328.3; 40 CFR 230.3).

Under the CWA 404 permit program, general permits (known as nationwide permits) have been adopted, and coverage under nationwide permits is possible when the amount of fill is relatively small (usually less than 0.5 acre). Projects that do not quality for a nationwide permit must obtain an individual permit, which has a longer and more involved permitting process.

Regulations Covering Development in Floodplains

National Flood Insurance Program

Alarmed by the increasing costs of disaster relief, Congress passed the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973. The intent of these acts was to reduce the need for large, publicly funded flood control structures and disaster relief by restricting development on floodplains.

FEMA administers the National Flood Insurance Program (NFIP) to provide subsidized flood insurance to communities that comply with FEMA regulations limiting development in floodplains. FEMA issues FIRMs for communities participating in the NFIP. The City of Livermore entered the NFIP in 1978. The

effective FIRMs for the City of Livermore are dated September 17, 1997. These maps delineate flood hazard zones in the community and guide insurance thresholds and fees of companies that issue policies in that community. The locations of FEMA-designated floodplains in the proposed Project Area are described in the physical setting section above. Given the findings of Schaaf & Wheeler (2006), the City plans to submit a CLOMR for the El Charro Specific Plan. Currently, FEMA is converting all paper FIRM's to a digital format nationwide. They began this process in 2004 for Alameda County. In addition to converting the maps to a digital format FEMA is also updating the FIRM's within Alameda County to a countywide format, converting the datum from NAVD 1929 to NAVD 1988, incorporating changes to the city limits and including any map changes approved by FEMA since September 17, 1997. Currently the digital FIRMS are expected to become effective in the next two years to allow local jurisdictions to certify levees and update their floodplain ordinances. The City will work with FEMA to incorporate the LOMR for this project into the DFIRM prior to the map becoming effective.

Executive Order 11988

Executive Order 11988 (Floodplain Management) addresses floodplain issues related to public safety, conservation, and economics. It generally requires federal agencies constructing, permitting, or funding to:

- avoid incompatible floodplain development;
- be consistent with the standards and criteria of the NFIP, and
- restore and preserve natural and beneficial floodplain values.

State Regulations

The following sections describe state water quality control programs, plans, and policies applicable to the project area and environs.

Porter-Cologne Water Quality Control Act of 1969

The Porter-Cologne Water Quality Control Act established the SWRCB and divided the state into nine regional basins, each with an RWQCB. The SWRCB is the primary state agency responsible for protecting the quality of the state's surface and groundwater supplies, while the regional boards are responsible for developing and enforcing water quality objectives and implementation plans. The Project Area is within the jurisdiction of SFBRWQCB.

The act authorizes the SWRCB to enact state policies regarding water quality in accordance with CWA 303. In addition, the act authorizes the SWRCB to issue WDRs for projects that would discharge to state waters. The Porter-Cologne Water Quality Control Act requires that the SWRCB or the RWQCB adopt water quality control plans (basin plans) for the protection of water quality. A basin plan must:

- identify beneficial uses of water to be protected,

- establish water quality objectives for the reasonable protection of the beneficial uses, and
- establish a program of implementation for achieving the water quality objectives.

Basin plans also provide the technical basis for determining waste discharge requirements, taking enforcement actions, and evaluating clean water grant proposals. Basin plans are updated and reviewed every 3 years in accordance with Article 3 of Porter-Cologne Water Quality Control Act and CWA 303(c) (SFBRWQCB 2004).

California Regional Water Quality Control Board, San Francisco Bay Region—Basin Plan

Water quality in streams and aquifers of the region is guided and regulated by the SFBRWQCB Basin Plan (SFBRWQCB 2004). State policy for water quality control is directed at achieving the highest water quality consistent with the maximum benefit to the people of the state. To develop water quality standards consistent with the uses of a water body, the SFBRWQCB classifies historical, present, and potential future beneficial uses as part of its basin plan.

Beneficial Uses

The SFBRWQCB's Basin Plan identifies the beneficial uses of the San Francisco Bay basin. Alameda Creek's existing beneficial uses, as designated in the SFBRWQCB's Basin Plan (SFBRWQCB 2004), include agricultural supply, cold freshwater habitat, groundwater recharge, fish migration, water contact recreation, noncontact water recreation, fish spawning, warm freshwater habitat, and wildlife habitat. Although portions of the Alameda Creek watershed contain existing beneficial uses, none have been designated in the Basin Plan for the Arroyo Mocho, Cottonwood Creek, and the Arroyo Las Positas. Beneficial uses of the lower San Francisco Bay that may be protected against water quality degradation include ocean, commercial, and sport fishing; estuarine habitat; fish migration; preservation of rare and endangered species; water contact recreation; noncontact water recreation; shellfish harvesting; and wildlife habitat. The most sensitive beneficial uses from the standpoint of water quality management are cold freshwater habitat; estuarine habitat; water contact recreation; and uses associated with maintaining resident and anadromous fisheries. A detailed discussion of beneficial uses and water quality objectives can be found in the Basin Plan.

Dissolved Oxygen

Dissolved oxygen (DO) is a critical component for all forms of aquatic life. DO levels can be highly variable and subject to large oscillations in short time periods. With calm waters and low flows, water bodies can thermally stratify, causing deeper zones to have very low DO concentrations. Additionally, high levels of nutrient loading can cause algal blooms. This can cause large swings in DO levels as the algae populations fluctuate in size, producing oxygen while growing and consuming it as they decay. When DO concentrations fall below

certain limits, the resulting low-DO zones can act as a barrier to fish migration and potentially to spawning success, as well as influence the lifecycle of species dependent on the aquatic habitat. In extreme cases, persistent low DO concentrations can result in mortality to benthic organisms and other less mobile aquatic species.

The water quality objective for DO established by the SFBRWQCB's Basin Plan for nontidal waters is 5 mg/L minimum for warm water habitat and 7 mg/L minimum for cold water habitat (SFBRWQCB 2004).

Electrical Conductivity

Electrical conductivity (EC) is a measure of the degree to which a given water sample transmits electricity. The amount of TDS in water is directly related to EC; that is, high EC is an indicator of high TDS. TDS and EC are general indicators of salinity and are regulated under the SFBRWQCB's Basin Plan and 22 CCR drinking water standards.

Chlorides and Nitrates

Other water quality objectives for the Alameda Creek watershed, above Niles Junction (which is just outside of Fremont, California, approximately 11 miles southwest of the project area), are as follows (SFBRWQCB 2004).

- Chlorides in surface water shall not exceed 60 mg/L (90-day arithmetic mean), 100 mg/L (90-day 90th percentile), and 250 mg/L (daily maximum).
- Nitrate (NO_3) concentrations in groundwater of the Main Basin and Fringe Basins shall not exceed 45 mg/L more than 10% of the time during 1 year.

Total Dissolved Solids

TDS comprise inorganic salts and small amounts of organic matter that are dissolved in water. The principal constituents are usually the cations calcium, magnesium, sodium, and potassium; and the anions carbonate, bicarbonate, chloride, sulfate, and, particularly in groundwater, nitrate (from agricultural use).

Water quality objectives for TDS in the Alameda Creek watershed are as follows (SFBRWQCB 2004).

- Surface water: 250 mg/L (90-day arithmetic mean); 360 mg/L (90-day 90th percentile); and 500 mg/L (daily maximum).
- Groundwater: ambient or 500 mg/L, whichever is lower, in the Main Basin Ambient or 1,000 mg/L, whichever is lower, in the Fringe Basins.

Salinity in groundwater is an increasing issue as irrigation and recharge waters contribute salts to the system and groundwater outflows to flush the salts are limited. At two key wells monitored by Zone 7 throughout the past 10 years, actual TDS levels have fluctuated between 410 and 790 mg/L with most of the

records between 470 and 620 mg/L (Jones & Stokes 2006a). For surface water near the project area, the Arroyo Las Positas has been found to not meet the SFBRWQCB's TDS water quality objective as it has an average concentration of 1,000 mg/L (Jones & Stokes 2006a). Consequently, recharge to the aquifer from the Arroyo Las Positas negatively influences the groundwater quality.

Water Temperature

Water temperature is a critical constituent from the standpoint of aquatic life. The SFBRWQCB has designated portions of Alameda Creek as providing both warm and cold habitat for aquatic species. As established by the SFBRWQCB's Basin Plan, the temperature for cold or warm water habitat shall not be increased by more than 5 degrees Fahrenheit above natural receiving water temperature (SFBRWQCB 2004).

Turbidity

Turbidity is a unit of measurement quantifying the degree to which light traveling through a water column is scattered by the suspended organic (including algae) and inorganic particles. Turbidity is commonly measured in Nephelometric Turbidity Units (NTU). The velocity of the water resource largely determines the composition of the suspended load. The series of turbidity-induced changes that can occur in a water body may change the composition of an aquatic community by reducing light penetration, thereby suppressing photosynthetic activity of phytoplankton, algae, and macrophytes, especially those farther from the surface. Overall, excess turbidity leads to fewer photosynthetic organisms available to serve as food sources for many invertebrates. As a result, overall invertebrate numbers may decline also, which then may lead to a fish population decline.

The SFBRWQCB's Basin Plan states that turbidity shall not be increased greater than 10% in areas where natural turbidity is greater than 50 NTU. For municipal water supplies, the water quality objective for turbidity is 5 NTU (SFBRWQCB 2004).

Streambed Alteration Agreement

DFG regulates streambed alterations in accordance with the California Fish and Game Code 1601–1616: Streambed Alterations. Whenever a project proposes to alter a streambed, channel, or bank, an agreement with DFG is required. The agreement is a legally binding document that describes measures agreed to by both parties to reduce risks to fish and wildlife in the stream system during the project. This is a separate process from CEQA approval but is usually coordinated with CEQA compliance. Agreements typically have fewer procedural and legal requirements than CEQA in order to work with small-scale projects that are important to fish. Timeframes for agreements are 30 days for DFG to determine the completeness of an application and an additional 60 days to provide a draft agreement to the applicant.

Local Regulations

Stream Management Master Plan

The SMMP was developed by Zone 7 in cooperation with stakeholders and other agencies. The SMMP EIR includes the following goals (ESA 2006).

- Protect people, property, and stream corridors from damaging drainage and floods.
- Reduce or manage erosion and sedimentation in a manner that is compatible with other stream resources.
- Provide adequate conveyance of water for recharge and storage needs.
- Protect and enhance the water quality of streams and groundwater.
- Protect and enhance aquatic and riparian habitat associated with streams and wetlands.
- Promote recreation, alternative transportation, and public education opportunities along streams and the Chain of Lakes.

The SMMP EIR recommends a regional approach to flood protection to maximize benefits and minimize costs. Regional flood protection would occur via creek modifications to meet capacity requirements for the 100-year flood event and prevent sediment accumulation without expanding existing trapezoidal channels.

The SMMP identifies projects to detain floodwaters, store and remove sediment and divert and store floodwaters until they can be passed safely downstream.

One of the main goals of the flood control plan is to maintain or reduce flows into the Arroyo De La Laguna so that flood flows will not exceed the creek capacity at Bernal Avenue in Pleasanton, which is downstream of the project area over 4 miles to the southwest. Downstream of Bernal Avenue, the channel is natural and does not have a 100-year capacity, thereby making it sensitive to increased erosion and flooding (Schaaf & Wheeler 2006). Proposed study alternatives of the SMMP involve three plans and modifications relevant to the Arroyo Las Positas and the Project Area: (1) land acquisition and recreational trail networks north of I-580 in the Cottonwood, Collier, and Cayetano watersheds; (2) the increase of reach capacity and trapping sediment loads in the Arroyo Las Positas from Isabel Avenue to the west through the Las Positas Golf Course; and (3) the diversion of flows from the Arroyo Las Positas to the Chain of Lakes for detention storage. The plan identifies the Chain of Lakes for flood water storage since they can contain the 5,000 cfs of flood flows needed to relieve the downstream creek reaches and provide additional capacity in the event of back-to-back storms.

Alameda County Watercourse Protection Ordinance

The Watercourse Protection Ordinance restricts the discharge of pollutants to watercourses and the encroachment of new development into watercourses of

unincorporated areas of the county. In addition to prohibiting discharges into watercourses, the ordinance establishes a 20-foot building setback from the top of the bank to contain flows from the 100-year flood event. Implementation of this ordinance serves to protect surface water and groundwater recharge areas from erosion, sedimentation, and sources of pollution. The proposed Project would be required to comply with the requirements of this ordinance.

Alameda Countywide Clean Water Program

The Alameda Countywide Clean Water Program (ACCWP) was initiated with the goal of forging consistent, effective countywide strategies to control sources of stormwater pollution. In support of this program, the SFBRWQCB has issued a joint municipal stormwater permit to the 17 agencies and cities participating in the ACCWP, recently reissued on February 19, 2003 (Alameda Countywide Clean Water Program 2003). The participating entities include Alameda County; the Alameda County Flood Control Department and its Zone 7; and the cities of Alameda, Albany, Berkeley, Dublin, Emeryville, Fremont, Hayward, Livermore, Newark, Oakland, Piedmont, Pleasanton, San Leandro, and Union City. The ACCWP is responsible for helping participant entities ensure that they are fulfilling their obligations under the permit and for preparing detailed reports that describe what each entity is doing to prevent stormwater pollution. The program coordinates its activities with other pollution prevention programs, such as wastewater treatment, hazardous waste disposal, and waste recycling.

The ACCWP has developed a Storm Water Quality Management Plan (SWQMP) that describes the program's approach to reducing stormwater pollution. The SWQMP for 2001–2008 serves as the basis of the ACCWP's NPDES permit (Alameda Countywide Clean Water Program 2003). The proposed Project is within the boundaries addressed by the SWQMP. The plan does not regulate discharge requirements. Rather, the ACCWP plan is an advisory tool intended to assist dischargers within the boundaries of the 17 participatory agencies to comply with SFBRWQCB regulations. The plan provides details and guidelines for SFBRWQCB compliance for entities that would generate discharges to water bodies.

The ACCWP permit included additional requirements (Provision C.3) specifically addressing control of stormwater impacts associated with new development and redevelopment projects. Provision C.3 states that permit holders must incorporate stormwater source control measures, site design principles, and treatment control measures in new development and significant redevelopment projects to reduce water quality impacts of stormwater runoff for the life of these projects. Generally, new development and redevelopment projects must now incorporate on-site stormwater treatment devices into project designs. As of August 15, 2006, these requirements apply to projects creating or replacing more than 10,000 square feet of impervious surface area. The ACCWP published a guidance manual, which directs member agencies on application and implementation of stormwater control measures. Provision C.3 requirements of the ACCWP permit are enforced according to this guidance manual. New development and redevelopment projects must also develop a hydrograph modification management plan (HMP) that includes analysis of the project's

potential to modify the stormwater hydrograph. Specifically, projects must address potential increases in the frequency and duration of flow magnitude and runoff volume from increased impervious surfaces.

East County Area Plan

The general plan for East Alameda County (Alameda County 2002) contains the following water resource objectives and policies:

Policies:

P282. The County shall protect surface and groundwater resources by preserving percolation areas and minimizing pollution in such areas, minimizing sedimentation and erosion through control of soil disturbing activities, and not allowing potentially polluting substances in or near creeksides, flowing stream or creek waters, flood waters, reservoir waters, or permanently or seasonally high groundwater table areas.

Program 104. The County shall implement all federal, state, and locally imposed statutes, regulations, and orders that apply to stormwater quality, including, the NPDES general permit for stormwater discharges, the Alameda Countywide Clean Water Program, and the Water Quality Control Plan, San Francisco Bay Basin Region.

Program 106. The County shall conform with Zone 7's Wastewater Management Plan and the Regional Water Quality Control Board's San Francisco Bay Basin Plan.

Policy:

P292. The County shall require new residential, public, commercial, and industrial development to have protection from a 100-year flood.

City of Livermore General Plan

The General Plan (City of Livermore 2004a) contains the following water resource-related goals, objectives, and policies:

Goal INF-1: Provide sufficient water supplies and facilities to serve the City in the most efficient and financially sound manner, while maintaining the highest standards required to enhance the quality of life for existing and future residents.

Objective INF-1.1: Plan, manage and develop the public water treatment, storage and distribution systems in a logical, timely and appropriate manner.

Policy:

P5. Development will not result in a reduction of water quality below those standards set forth in state and federal laws and regulations.

Objective INF-1.2 Require coordination between land use planning and water facilities and service to ensure that adequate water supplies are available for proposed development.

Policy:

P8. The design of water distribution systems shall seek to minimize crossings of wetlands or creeks. Water lines that cross existing creeks should be located at road crossings and use sewer bridges to span the creek at crossings, where possible, or go under creeks.

Goal INF-3: Collect, store and dispose of stormwater in ways that are safe, sanitary, environmentally acceptable and financially sound while maintaining the highest standards required to enhance the quality of life for existing and future residents.

Objective INF-3.3: Maintain creeks and arroyos in as natural a state as possible, while maintaining the health and safety of residents, providing flood control, preserving habitat and providing recreational use.

Policy:

P5. New development shall be required to incorporate appropriate measures to minimize the impacts of stormwater runoff to local creeks and channels.

Goal OSC-2: Conserve Livermore's waterways, tributaries and associated riparian habitats.

Objective OSC-2.1: Continue efforts to ensure that development does not harm the quality or quantity of Livermore's surface or ground water.

Policies:

P1. Require the implementation of best management practices to minimize erosion, sedimentation, and water quality degradation resulting from the construction of new impervious surfaces.

P2. The City shall take all necessary measures to regulate runoff from urban uses to protect the quality of surface and ground water.

Impact Analysis

Thresholds of Significance

Based on Appendix G of the State CEQA Guidelines and professional judgment, the proposed Project would result in a significant impact on hydrology or water quality if it would:

- violate any water quality standards or waste discharge standards set by the RWQCB, Zone 7 or City standards, or otherwise substantially degrade surface or groundwater quality;

- substantially deplete groundwater supplies or interfere substantially with groundwater recharge at the Livermore-Amador Valley groundwater basin such that the local groundwater table would be lowered and local wells or water supply would be disrupted;
- substantially reduce the amount or quality of water otherwise available for public water supplies;
- substantially alter an existing drainage such that substantial erosion, siltation, or flooding would occur in the city or on property in adjacent municipalities;
- create or substantially contribute to runoff water that would exceed the capacity of existing or planned storm water drainage systems or create a substantial increase in calculated peak flood discharges;
- substantially alter a natural water course;
- place housing or other structures within a 100-year flood hazard zone, as defined by FEMA;
- place within a 100-year flood hazard area structures that would impede or redirect flows;
- disturb, alter, or remove a seep or spring that could adversely affect stream flow, slope stability, or riparian habitat; or
- expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam.

Approach and Methodology

The evaluation of hydrology and water quality effects is based on professional standards and the conclusions of technical reports prepared for the proposed Project. The key construction-related impacts were identified and evaluated qualitatively based on the physical characteristics of the project area and the magnitude, intensity, location, and duration of activities. The key operational- or buildout-related impacts were identified and evaluated qualitatively and quantitatively based on currently available plans. It is assumed that the City and project applicants will conform to City and County building standards, grading permit requirements, erosion control requirements and stormwater treatment and detentions standards.

The impact analysis was performed at a regional level for the overall Project Area, as well as some considerations of individual site plans and features within the Specific Plan Area. A number of specific components of the proposed Project were considered in the impacts assessment, such as the Airway Boulevard Extension option near I-580, the Jack London Boulevard Extension option, the north overbank channel, the water quality basin, the detention basin, the extension of the sewer wastewater line and pump station, water and recycled water and joint utilities, the new trail extension and pedestrian bridge, and 1 to 2 feet of fill proposed to raise the south portion of the property above the

floodplain with channels to carry overbank flows through the raised portion of the property owned by the Children's Hospital as well as the redesign of portions of the golf course. Impacts resulting from the construction including buildout of the proposed Project are considered in the following discussion of impacts.

It is important to note that impact conclusions are made after considering the implementation of the proposed flood control and water quality improvements and after consideration of the application of all relevant City, state, and federal regulations. Thus, for example, conclusions below about flooding take into account the full effect of the proposed flood control improvements.

Impacts and Mitigation Measures

Impact WQ-1: Potential for Increased Erosion and Sedimentation and Decreased Surface Water Quality during Construction—Less than Significant with Mitigation

Project construction activities such as grading, stockpiling of spoil materials, and other construction-related earth-disturbing activities could result in soil erosion and subsequent sediment transport to adjacent properties, roadways, or water courses, including the Arroyo Las Positas and Cottonwood Creek. Furthermore, some of the project components are located in and around the bed and banks of the Arroyo and Creek. If discharged to adjacent surface waters or created within them, increased sedimentation could reduce water quality. Sediment transport to local drainage facilities such as drainage inlets, culverts, and storm drains could result in reduced storm flow capacity, resulting in localized ponding or flooding during storm events. The potential for increased sediment transport also could exacerbate the current problems of low flood capacity for the Arroyo Las Positas. The potential to increase erosion and sedimentation and decrease surface water quality is significant. The implementation of the following mitigation measures would reduce its impact to a less-than-significant level.

Mitigation Measure WQ-1a: Comply with National Pollutant Discharge Elimination System General Construction Permit

All construction activities will comply with the NPDES General Construction Permit, which contains standards to ensure that water quality is not degraded. As part of this permit, standard erosion control measures and BMPs will be identified in a SWPPP and will be implemented during construction to reduce sedimentation of waterways and loss of topsoil. As a performance standard, BMPs to be selected will represent the best available technology (BAT) that is economically achievable and the best conventional pollutant control technology (BCT) to reduce pollutants.

Commonly practiced BMPs may consist of a wide variety of measures taken to reduce pollutants in stormwater and other nonpoint-source runoff. Measures range from source control to treatment of polluted runoff. BMPs can include watering active construction areas to control dust generation during earthmoving activities; using water sweepers to

sweep streets and haul routes; and installing erosion control measures (such as silt fences, staked straw bales/wattles, silt/sediment basins and traps, check dams, geofabric, and sandbag dykes) to prevent silt runoff to public roadways, storm drains or waterways. Topsoil will be stockpiled and replaced at the conclusion of construction activities. If appropriate for the development site, disturbed soil will be revegetated as soon as possible with the appropriate selection and schedule of plants. No disturbed surfaces will be left without erosion control measures in place between the rainy season, which generally occurs between October 15 and April 15.

Mitigation Measure WQ-1b: Construct the Proposed Water Quality Swales and Hydrograph Modification Management Plan Detention Basins Prior to Use of Developed Sites

In consideration of the buildout scenario, the addition of the water quality swales and basins north of Arroyo Las Positas south of the densest area of development will help to decrease the likelihood of poor quality surface runoff from reaching the Arroyo Las Positas. The swales and basins will be constructed, and the vegetation established, before the occupancy of upland development so that the water quality swales can effectively trap sediments and uptake nutrients and the HMP basins can detain runoff in such as way that they can match the pre-project runoff conditions.

Impact WQ-2: Increase in Surface Runoff and Associated Water Quality Impacts on Local Waterways—Less than Significant with Mitigation

The existing condition of the Project Area is predominantly agricultural and open space. The proposed Project, when fully built, would result in new impervious surfaces, which would result in an incremental reduction in the amount of natural soil surface available for infiltration of rainfall and runoff, potentially generating additional runoff during storm events. Additional runoff could contribute to the flood potential of natural stream channels, accelerate soil erosion and stream channel scour, and provide an efficient means of transport for pollutants to enter waterways. Project features that detain water, such as the proposed swales and HMP basins north of the north overbank flood bypass channel and the detention basin south of the Arroyo Las Positas would assist with reducing rates of runoff and detail flood flows. Through the net removal of 98,000 cubic yards of soil, the detention basin south of Arroyo Las Positas would be graded to increase water storage volume. An additional 11,500 cubic yards of soil would be excavated just north of Arroyo Las Positas to form the north flood bypass channel. This channel would be designed to capture the flood flow that leaves the north bank of the Arroyo Las Positas that would otherwise flow through the major areas of future buildout. Schaaf & Wheeler (2006) found that the Project with the proposed flood control improvements would not increase the peak flow at Bernal Avenue in Pleasanton for either the worst case of a 100-year flooding event with levee failure on the Arroyo Mocho or the more typical 15-year flooding event. Thus, operation of the proposed Project would not generate an increase in runoff flows such that it would result in significant flooding or soil

erosion impacts. Any potential increase in surface runoff as a result of the Project that could potentially result in an increased transport of pollutants to waterways would be treated on-site (within development areas) and in the swales and basins (within the Specific Plan area outside of development areas) and detained according to the requirements of the stormwater NPDES permit, section C.3.

During the dry season, vehicles and other urban activities release contaminants onto the impervious surfaces where they would accumulate until the first storm event. During this initial storm event or *first flush*, the concentrated pollutants would be transported in runoff to stormwater drainage systems. Anticipated runoff contaminants associated with the operation of the proposed Project include sediment, pesticides, herbicides, oil and grease, nutrients, metals, bacteria, and trash. The proposed water quality swale and basins would collect storm drain flows from all new impervious surfaces created within the Specific Plan Area. This water quality system would be designed to carry up to the 10-year frequency flows in the Specific Plan Area and would address the stormwater quality treatment for up to 50% of the Specific Plan Area. On-site water quality treatments will be included in development designs (as required by the Specific Plan) that are submitted and ultimately approved by the City for development within the Specific Plan Area. Specific Plan Chapter 5, "Utilities and Infrastructure," presents the goals, objectives, and policies required for development in the Specific Plan Area within the limits and requirements of the City's design standards and guidelines and Storm Drainage Master Plan. The minimum amount of water quality treatment will be 50% for each site, but each site will be required to provide as much water treatment as possible. All treatment devises must meet City and SFBRWQCB requirements.

A conceptual drainage and stormwater treatment plan has been developed by the proponent for the Prime Outlets Livermore Valley project. The conceptual plan provides for treatment of 48.7% of runoff. In order to meet the Specific Plan requirements and to contribute overall to 100% of treatment, the final drainage and stormwater treatment plan would need to provide at least 50% of treatment.

The golf course redesign, while it would include new holes in new areas would not result in any substantial expansion overall of golf course turf areas and thus no substantial increase in the application of golf course fertilizer, herbicides, and pesticides above existing conditions is expected. The 100-foot setback requirement for the Specific Plan from Arroyo Las Positas would also apply to any new holes placed on land outside the current golf course. As described in Section 3.4, "Biological Resources", a similar setback, where feasible would be applied for realigned golf holes within the existing course. Thus, water quality of Arroyo Las Positas would not be expected to degrade relative to existing conditions due turf management of redesigned golf course holes.

While the general plan and Specific Plan goals and policies will do much to control water quality impacts, by themselves, they are not detailed enough, and the potential water quality impacts of the Project are considered significant.

Implementation of Mitigation Measure WQ-2 would reduce this potential impact to a less-than-significant level.

Mitigation Measure WQ-2: Incorporate Site-Specific Water Quality Treatment Devices into Site Drainage Plans to Meet Water Quality Standards and Maintain Beneficial Uses

Developers shall incorporate stormwater treatment devices into the site plan of each parcel and design and size the treatment devices according to the RWQCB permit section C.3 provisions. Up to 50% of this water treatment may occur off-site within the swales and HMP basins identified in the El Charro Specific Plan after they are constructed and landscaping is established. Each owner shall enter into a maintenance agreement with the City of Livermore for maintenance, inspection and reporting on an annual basis for those treatment devices that will not be within the public landscaping maintained through a Landscape Maintenance District. This agreement shall describe the plan for maintenance, inspection and reporting required for all water treatment devices and detention basins to ensure that water quality standards and beneficial uses of downstream water bodies are met. These plans will address, but may not be limited to, the following issues:

- manipulation of the hydroperiod to allow for appropriate plant growth;
- other vegetation and sediment management activities, such as periodic vegetation and sediment removal every 5–10 years;
- control of water residence time, periodic flushing of the water features, and maintenance of drainage channels and culverts;
- source control of contaminants reaching the water bodies;
- measures to reduce the potential for disease vectors (e.g., mosquitoes and rodents);
- measures to ensure that groundwater does not become contaminated; and
- other measures as necessary.

The measures identified in the site-specific plans will conform to the performance standard that water quality in the off-site water features meets the numeric and narrative water quality objectives of the Basin Plan and that beneficial uses of the downstream water bodies are not compromised. Implementation of the stormwater treatment and hydromodification management plan components of the El Charro Specific Plan shall be a requirement of the City's approval of the Specific Plan and each development within the Specific Plan area.

In consideration of the buildout of individual parcels, the City will require detailed drainage concept plans from future developers. These will include analysis of the stormwater infrastructure and conceptual grading to be constructed in the Specific Plan Area. Attention will be

given to staging and phasing to account for collecting runoff during and following construction. The plan also will ensure that drainage flows do not exceed the existing capacity of the integrated drainage system. As part of the infrastructure plan, the plan will address the following topics.

- A calculation of predevelopment runoff conditions and postdevelopment runoff scenarios using appropriate engineering methods. This analysis will evaluate potential changes to runoff through specific design criteria and account for increased surface runoff. A preliminary HEC-1 model has already been completed by Schaaf & Wheeler (2006) for the proposed Project, but it needs to be refined to test their assumptions for specific parcels.
- A description of the proposed maintenance program for the on-site and nearby drainage system.
- Designs and standards for drainage systems to be installed on a project/parcel-specific basis.

Drainage systems will be designed in accordance with the City's and other applicable flood control design criteria. As a performance standard, measures to be implemented from the individual drainage concept plans will be designed to meet the C.3 requirements and ensure that 100-year flooding and its potential impacts are maintained at or below current levels and that people and structures are not exposed to additional flood risks.

As a condition of approving the individual development projects, the City will require project applicants to demonstrate that their projects are consistent with the recommendations and conclusions of the drainage concept plan and will implement the measures identified in the plan. If the plan does not adequately address the drainage impacts of the specific development, the City will require applicants to prepare additional analysis and incorporate measures consistent with the scope and performance standards associated with the plan to ensure that drainage and flooding impacts are avoided. The City will require post-construction monitoring to ensure that the necessary measures have been implemented and require compliance if the necessary measures are not met.

Impact WQ-3: Potential for Degradation of Water Quality through the Accidental Release of Hazardous Materials—Less than Significant with Mitigation

During operations, the handling of fuels and hazardous materials could incur a risk of release to local waters. If a fuel tank or an oil line were ruptured, the surrounding environment would be at risk. However, as discussed in section 3.7, "Hazards and Hazardous Materials," existing local, state, and federal regulations effectively control the potential risks and mandate action in the event of accidental release, and operational risks thus are considered less than significant.

Fuels, oils, lubricants, and other hazardous materials with the potential to degrade water quality may be released from equipment during construction. Excavation equipment, generators, and other equipment would use these hazardous materials on a regular basis during construction. Furthermore, open-water features are likely to interact with the shallow groundwater in the Project Area, providing a direct mechanism for contaminants to reach the aquifer. The impact of the proposed Project on water quality through the accidental release of hazardous materials during construction is considered significant. The implementation of the following mitigation measures, however, will reduce the impact to a less-than-significant level.

Mitigation Measure WQ-3a: Develop Hazardous Material Spill Prevention Control and Countermeasure Plan for Construction

The project applicants or their contractors will prepare a Hazardous Material Spill Prevention Control and Countermeasure Plan as part of the NPDES General Construction Permit to minimize the potential for, and effects from, spills of hazardous, toxic, or petroleum substances during construction of the Project. This plan will describe storage procedures and construction site housekeeping practices and identify the parties responsible for monitoring and spill response. Routine inspections and monitoring of BMPs by the City will ensure that minimal impacts to the environment occur. Commonly practiced BMPs include the use of containment devices for hazardous materials, the training of construction staff regarding safety practices to reduce the chance for spills or accidents, and the use of nontoxic substances where feasible. The plan also will describe actions required if a reportable spill occurs, such as which authorities to notify and the proper cleanup procedures. The Hazardous Material Spill Prevention Control and Countermeasure Plan will contain standards considered sufficiently protective such that significant adverse impacts on surface and groundwater quality will be avoided.

Mitigation Measure WQ-3b: Implement Measures to Maintain Groundwater or Surface Water Quality

If an appreciable spill has occurred, and results determine that project activities have adversely affected surface water or groundwater quality, the City shall be responsible for ensuring that a detailed analysis will be performed by a Registered Environmental Assessor to identify the likely cause of contamination. This analysis will conform to ASTM standards and will include recommendations for reducing or eliminating the source or mechanisms of contamination. Based on this analysis, the City, its contractors, and applicants for specific development projects within the Specific Plan Area will select and implement measures to control contamination, with a performance standard that surface water or groundwater quality must be returned to baseline conditions. These measures will be subject to approval by the City.

Impact WQ-4: Loading of Contaminants for which the Arroyo Las Positas and Downstream Water Bodies Have Been Listed as Impaired—Less than Significant with Mitigation

Contaminated urban runoff waters from the proposed Project could flow into the Arroyo Las Positas and eventually into Alameda Creek and the San Francisco Bay and could contribute to existing 303(d) impairments in these water bodies. From the use of diazinon as a pesticide in landscaped areas, golf course redesign areas or in the viticultural buffer around the edge of the property by maintenance crews, the proposed Project could add diazinon to the waterways of the Arroyo Las Positas and the San Francisco Bay. Under this impairment, the Arroyo Las Positas and the San Francisco Bay have no remaining assimilative capacity or ability to accommodate additional quantities of this contaminant, irrespective of concentration. In addition, runoff from the proposed Project could contribute to the impairment of the San Francisco Bay for a number of other constituents previously described. Therefore, the proposed Project's potential contributions of these contaminants would be considered a significant impact.

Specific Plan General Planting Guideline 3.11.1e (EDAW|AECOM 2006) would reduce the effect of this impact.

> **Guideline 3.11.1e.** The required vineyard buffer should be designed in line with the most current practices in sustainable viticulture, including integrated pest management techniques. This may include pest control through soil management, and the promotion of diverse animal, bird and insect populations that lead to self-regulating predator and prey relationships.

Implementation of the above Specific Plan guideline, Mitigation Measures WQ-1b and WQ-2, along with the natural chemical behavior of the constituents' fate and transport dynamics, would reduce the potential for the constituents to reach San Francisco Bay and would reduce the impact of the proposed Project on existing 303(d) surface water quality impairments to a less-than-significant level.

Mitigation Measure WQ-1b: Construct the Proposed Water Quality Swales and Hydrograph Modification Management Plan Detention Basins Prior to Use of Developed Sites

The full text of this measure is included above.

Mitigation Measure WQ-2: Incorporate Site-Specific Water Quality Treatment Devices into the Site Plan to Meet Water Quality Standards and Maintain Beneficial Uses

The full text of this measure is included above.

Impact WQ-5: Increased Sediment and Contaminants in Groundwater and Surface Water as a Result of Infrastructure Failure—Less than Significant

The proposed Project would include the installation of infrastructure for the retail and commercial developments, such as water supply and sewer pipelines and storage tanks. The El Charro sewer pump station is proposed to be located in the northwestern portion of the property. The possibility of a pipeline rupturing as a result of exceedances of pipeline or tank capacity, improper design, installation,

maintenance, seismic activity, or other catastrophic events could pose a negative impact on water quality resulting from increased erosion and sediment, as well as discharge of any contaminants contained in the water released from the pipeline (e.g., sewage from influent pipelines). The infrastructure systems would be designed and engineered with sufficient capacity to accommodate anticipated peak flows, minimizing the potential for upset. In addition, infrastructure would be designed to relevant seismic and other standards to avoid the potential for upset from seismic activity or other geologic hazards. The impacts to increased sediment and contaminants in groundwater and surface water as a result of infrastructure failure is deemed to be less than significant. No mitigation is required.

Impact WQ-6: Degradation of Surface and Groundwater Quality from Trenching or Excavation below the Water Table and within the Wetted Area of the Arroyo Las Positas—Less than Significant with Mitigation

The bridge foundations would require soil excavation at least 8 to 10 feet deep for the construction of foundations and pilings, while the groundwater table can be found within 10 feet below the surface in some areas. Furthermore, water is likely to be encountered by the implementation of the specific components of the proposed Project, such as the north overbank flow-through, the selection and construction of an east-west roadway alignment option, and the detention basin. Construction of the proposed Project most likely will encounter groundwater and require dewatering in areas where the groundwater table intercepts the areas of excavation. If excavation were to reach a depth that exposed the water table, an immediate and direct path to the groundwater basin would become available for contaminants to enter the system. Primary construction-related contaminants that could reach groundwater would include sediment; oil and grease; and construction-related hazardous materials from excavation, shoring, and construction staging areas. Because a surface water discharge could occur if it was infeasible to contain the dewatering effluent on site or discharge it to the sanitary sewer system, the potential impact would be significant. The implementation of the following mitigation measure, however, reduces this impact to a less-than-significant level as on-site containment or coverage under the appropriate NPDES permit would ensure that dewatering activities would not violate any water quality standards or waste discharge requirements, cause accelerated erosion or siltation, or otherwise substantially degrade water quality.

Mitigation Measure WQ-6: Comply with National Pollutant Discharge Elimination System General Dewatering Permit

Construction activities will require an NPDES dewatering permit and discharge to adjacent surface waters. Depending on the volume and characteristics of the discharge, the City could consult with the SFBRWQCB and obtain coverage under the General Construction Permit or the General Order for Dewatering and Other Low Threat Discharges to Surface Waters (General Low Threat Discharge Permit). If the above permits will not cover the volume or characteristics of the discharge, coverage may need to be obtained under an individual NPDES dewatering permit and WDRs from the SFBRWQCB. In accordance

with the permit, the dewatering collection and disposal methods will be identified for all project components. The quality of receiving waters would be maintained through appropriate treatment measures identified in the permit. These may include the utilization of settling ponds or screens to reduce suspended sediment loads or, if necessary due to contaminated groundwater, the use of on-site treatment systems for contaminant removal prior to discharge. In either case, the appropriate permit will contain standards considered sufficiently protective such that significant adverse impacts on surface water quality would be avoided. The final selection of water quality control measures would be subject to approval by the SFBRWQCB.

The City or its agent will file an NOI, as part of the NPDES process, before allowing dewatering to begin. The City or its contractor would routinely inspect the dewatering site to verify that measures specified in the permit are properly implemented and perform visual inspections of effluent to verify quality before the effluent is discharged. Inspections would include verification that the effluent is not discolored and does not exhibit sheens or films, which indicate the presence of contaminants other than sediment. If, during the dewatering permitting process, it is determined that there is reasonable potential for contaminants besides sediment to be found in dewatered effluent, the City or its contractor will collect samples and conduct laboratory analyses for these constituents as part of the monitoring regime. For ongoing dewatering activities, monitoring would be performed at least biweekly. The City would immediately notify the contractor if there is a noncompliance issue and require compliance.

Impact WQ-7: Substantial Depletion of Groundwater Supplies or Interference with Groundwater Recharge—Less than Significant

Groundwater would not be used as a water supply for the proposed Project. The proposed Project would, however, create new impervious surfaces that could interfere with groundwater recharge to alluvial and unconfined aquifers and potentially affect groundwater supplies or levels. The amount of impervious coverage is less than it could be otherwise as the design guidelines and policies of the Specific Plan call for alternative types of paving, which could include pervious paved materials, for overflow parking lots to minimize stormwater runoff (Specific Plan General Guideline 3.9.1i), and the collection of stormwater runoff into bioswales from roadways (Specific Plan General Guideline 3.11.3c). Remaining areas that do not collect or infiltrate water, such as roofs and other select surfaces, would be routed to swales and basins that will enhance potential for infiltration prior to draining off site.

The existing site conditions are not favorable for infiltration due to the presence of soils that are poorly drained. Soils with high clay content are found throughout the upland portions of the project area and thus recharge from the project site is likely limited in the pre-project conditions.

The alluvial soils in the creek channels are generally well-drained but would not be altered by the project and project flows will ultimately be returned to Arroyo Las Positas with potential for infiltration in the channel.

The relative impact of new impervious cover compared to overall groundwater basin's storage is limited. Total groundwater storage in the Main Basin is about 221,000 acre-feet. Building coverage is limited to30% of project development parcels as could be as much as 45 acres. With precipitation at approximately 16 inches (1.5 feet), reduction in recharge could be as much as 67 acre-feet if all of this runoff had no opportunity to infiltrate. However, as noted above, site drainage will be routed through swales and basins, and ultimately into the alluvial channel of Arroyo Las Positas, and thus the amount of lost recharge is less.

Thus, the interference with groundwater recharge is considered less than significant.

Impact WQ-8: Flood Hazard Impacts that Would Impede or Redirect Floodflows—Less than Significant with Mitigation

Portions of the Specific Plan Area are in the 100-year floodplain of the Arroyo Las Positas and the Arroyo Mocho. The proposed Project's development in the floodplain could have an impact on local and regional hydrology during a flood event unless it is designed to pass flood flows. The proposed Project includes a number of elements that would allow flood flows to pass unimpeded and detail flows until they can be safely released downstream. These features would ensure that public infrastructure would not create an increase in peak flows at Bernal Avenue in Pleasanton, and in some cases they would minimally reduce it (Schaaf & Wheeler 2006). These elements include the construction of mass fill and associated minor drainage channels on the northern side of the floodplain at the confluence with Cottonwood Creek (on the Children's Hospital property), the north overbank flow-through channel, and the graded detention storage area in the southwest of the project area and its associated net 98,000 cubic yards of excavation. The detention basin would increase the natural storage basin area south of the Arroyo Las Positas by 10% to 20%. Many of these features would include new grading and excavation that would change the flow dynamics on and around the site. All new roadways, including the options for the new east-west roadway extension, would include free-span bridges across the Arroyo Las Positas or Cottonwood Creek and would be designed to be above the 100-year flood level. The Project would include the design of roadways with culverts under them that would not increase upstream flooding by more than 0.05 feet.

The proposed conditions, with the exception of the widening of Airway Boulevard to four lanes (see discussion below), were modeled to identify the future flood plain in the project area. The results are shown on Figure 3.8-4. As shown on this figure, the project would not expand flooding to additional areas.

While much of the project has been designed to avoid increased flooding, the future widening of Airway Boulevard from two to four lanes between Isabel Avenue and the golf course has the potential to reduce the flood conveyance

capacity of the Arroyo Las Positas channel reach. The specific design of this widening has not been completed so it is not known whether fill within the high-flow channel or piles may be necessary or not. Reduction of the channel capacity could increase flood elevations in this reach or upstream and/or result in additional flooding of adjacent areas. This is considered a significant impact.

In addition to the flood control elements incorporated into the proposed Project, implementation of the following measures would reduce these impacts to less-than-significant levels.

Mitigation Measure WQ-8: Design Airway Boulevard Four-Lane Widening to Avoid Increase in Flooding and Geomorphic Changes

If Airway Boulevard is proposed to be widened from two to four lanes, the widening shall be designed to avoid any increase in flood elevations upstream of Isabel Avenue, any increase in flooding of adjacent areas, and any increase in downstream velocity (such as through use of concrete line) that would result in alterations of channel conditions that may result in loss of habitat and/or riparian vegetation. The design may require the placement of additional lane or lanes on piles to reduce effects on the channel cross-section and/or steepening of existing channel side slopes.

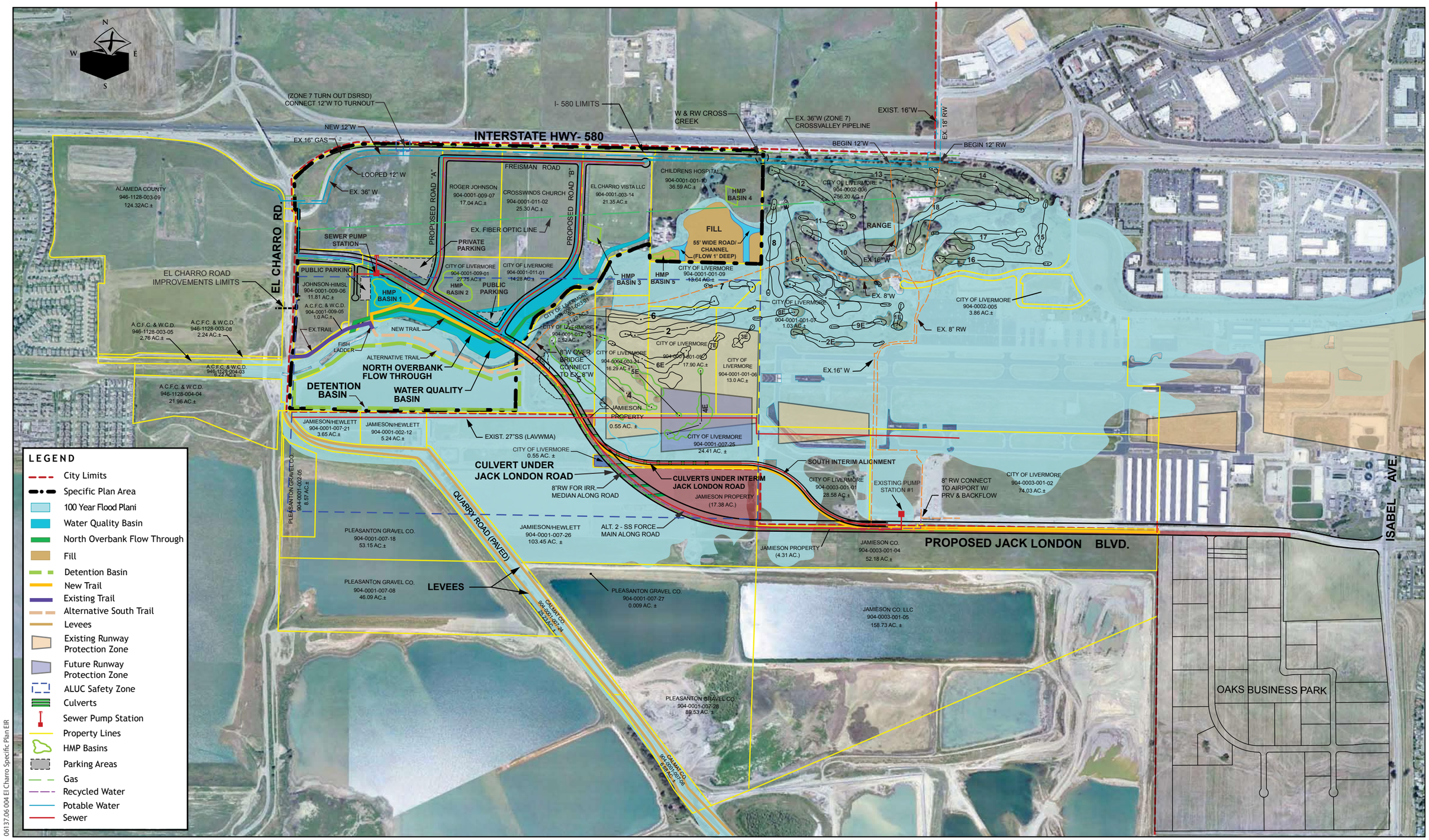
Relevant mitigation proposed in this EIR for water quality, biological resources, and other subject areas will also apply to any proposed widening of Airway Boulevard.

If this is not feasible and additional modifications not anticipated in this EIR are required, further CEQA evaluation will be necessary. If the adopted design were to result in additional habitat lost not anticipated in this EIR, further CEQA evaluation would also be necessary.

Impact WQ-9: Flood Hazard Impacts to Structures and Risk of Loss Including Levee Failure—Less than Significant

Construction of commercial and retail structures and supporting infrastructure, including the future new pump station and sewer system, in the floodplain could expose people, structures, and facilities to significant risk from flooding. Furthermore, the levees that surround the Arroyo Mocho have the potential of failure, thereby increasing the potential for flooding in and around the site. Schaaf & Wheeler (2006) modeled the effects of levee failure and found that most of the flows would avoid structures and end up in the natural and artificial detention area just upstream of the confluence of the Arroyo Mocho and the Arroyo Las Positas, raising the level by 0.13 feet. The flows that overtop the north bank of the Arroyo Las Positas increase from 430 cfs to 630 cfs. These flows would be routed through the north overbank channel.

The proposed flood control improvements, including the flood control detention basin, the north overbank grading and channel, and stormwater basins, are primarily intended to remove commercial property within the Specific Plan Area



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Figure 3.8-4
Future 100-Year Floodplain Under Proposed Conditions

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from the 100-year floodplain and replace the storage lost due to development within the area. The proposed Project also would fill a portion of the Children's Hospital property to raise it above the 100-year-flood level (see Figure 2-5). These elements of the proposed Project significantly reduce the risk of flood hazard on structures proposed within the Specific Plan Area.

With the design features already incorporated into the proposed Project that would remove the commercial areas from the 100-year floodplain, the primary structural flood hazard impact and risk caused by the Project is associated with floodflows under the east-west roadway extension options and the proposed pedestrian bridge located within the 100-year floodplain. However, the design of these features would include elements that allow floodwaters to pass under the structures without impeding flows.

The proposed Project does not have a potentially significant impact on the exposure of people or structures to floods, including from potential levee failures.

Impact WQ-10: Potential Modification to Flows in the Arroyo Las Positas and Cottonwood Creek Could Result in Geomorphological Alterations to Channel Form and Habitat—Less than Significant with Mitigation

Construction of development, diversion of flows, and creation of impervious surfaces could result in increase in peak flows within Arroyo Las Positas and Cottonwood Creek that could result in changes in channel geomorphology that could result in increased erosion, scour, loss of riparian vegetation, and alteration of species habitat.

Channel capacity will not be reduced due to the use of setbacks and free span bridges (with the exception of Airway 4-lane widening described above). Overbank flows north of Arroyo Las Positas would be routed in the north channel and then ultimately discharged to the engineered channel below the fish ladder. Overbank flows south of Arroyo Las Positas would flow westward and be detained in the floodplain and the new detention basin and then discharge at the same location as the north channel. While flow velocities would increase slightly between El Charro Road and the confluence with channel G3-1, this reach has capacity to handle the flow and due to its form is resistant to channel change, while lacking any substantial riparian vegetation except in the low flow channel. Below G3-1, flows and velocities would not increase above existing c conditions.

On the Children's Hospital site, site drainage on the eastern and southern parcels would not be routed in the project swales and basins. Instead, site drainage would be routed into HMP basins for detention prior to discharge to Arroyo Las Positias. By detaining and slowing down discharge, substantial flow increases can be avoided and any associated channel effects.

As noted above, the potential widening of Airway Boulevard to 4-lanes may reduce the capacity of Arroyo Las Positas which could result in increase in flow velocities that could affect habitat at this location and downstream on the golf

course. This is considered a significant impact that can be mitigated to a less than significant level with the following mitigation.

Mitigation Measure WQ-8: Design Airway Boulevard Four-Lane Widening to Avoid Increase in Flooding and Geomorphic Changes

This mitigation is described above.

Impact WQ-11: Potential Incompatibility with Regional Flood Control Improvement through the Zone 7 Stream Management Master Plan—Less than Significant with Mitigation

To increase flood control capacity, Zone 7 is also considering the desilting of the Arroyo Las Positas upstream of the golf course and the widening of the Arroyo within the golf course reach. The Specific Plan Area also contains portions of the area conceptually planned by Zone 7 for a future flood control bypass facility that would convey stormwater runoff from the Arroyo Las Positas to Cope Lake for detention during storm events. Cope Lake is located on an active quarry operation, which precludes its use until the quarrying lease has ended and a bypass system is in place to allow water to flow to the lake.

Implementation of the proposed Project overall provides a reasonable opportunity for the desilting, widening, and bypass facilities in order for regional flood control to be feasible but several specific project features could create impediments to future SMMP implementation.

The Project would include no substantial impediments to the desilting of the Arroyo Las Positas upstream of the golf course due to Airway Boulevard widening because the creek will still be accessible for desilting activity. However, the expansion of the Airway Boulevard crossing of Arroyo Las Positas would introduce additional siltation potential due to lengthening the existing culverts along the creek, and this is a potentially significant impact on regional flood control.

The Project would accommodate the future potential to widen the Arroyo Las Positas through the golf course reach by providing for a 100-foot setback area (from each side of the creek) through the Specific Plan Area free of development. A preliminary estimate of the potential width of an Arroyo Las Positas channel sufficient to carry the buildout 100-year flow in this reach is between 120 and 160 feet in width. The Arroyo Las Positas is approximately 30 feet in width (bank to bank) today. With the minimum 100-foot setbacks in the Specific Plan Area, approximately 230 feet of area would be available to construct the future channel, if ultimately implemented. The new Jack London Extension bridge would clear span the existing Arroyo Las Positas and would be sufficiently long to accommodate a future widening of the creek. The bridges on Arroyo Las Positas on the Children's Hospital side would be clear span bridges over the existing creek. Zone 7 has identified that private bridges, as long as they are maintained by private parties, are not considered a substantial impediment to SMMP implementation in this area (Sheets pers. comm.).

The Project would not impede the ability to ultimately construct a bypass channel from the Arroyo Las Positas to the Chain of Lakes, as the area conceptually considered by Zone 7 for this facility would cross just west of the existing golf course in the area west of the Jack London Boulevard Extension proposed for use as a detention basin and/or golf course hole relocation. Though the exact location of the potential bypass channel is not known at this time, it is considered feasible to modify the golf course or modify the detention basin to accommodate the bypass channel and this is not considered a significant impact.

As described in section 3.4, "Biological Resources," the Project will have significant effects on certain biological resources, including the CRLF and other riparian species. The Project's impacts can be mitigated to a less-than-significant level by the on-site and off-site mitigation measures identified in this EIR, including restoration of a portion of Arroyo Las Positas to mitigate and improve riparian habitat for multiple species downstream of the existing golf course, which would be westward of the probable location of future SMMP widening or bypass to Cope Lake. While additional restoration would happen at the location of removed bridges on the Children's Hospital property, the amount of restoration would not be expected to be a substantive impediment to SMMP widening or desilting. Thus, biological mitigation associated with the Project is not expected to have a significant impact on regional flood control.

The potential incompatibilities associated with the Airway Boulevard culverted crossing of Arroyo Las Positas and golf course redesign with future SMMP regional flood control measures is considered a significant impact, but implementation of the following mitigation measures would reduce these impacts to less-than-significant levels.

Mitigation Measure WQ-11a: Maintain Culvert and Manage Increased Siltation Potential in and Immediately above the Airway Boulevard Crossing of the Arroyo Las Positas

The City will be responsible for the maintenance of the culverts under Airway Boulevard near I-580 and the removal of any increased siltation resultant from expansion of the culverts if the Airway Boulevard Extension option is implemented. Relevant mitigation proposed in this EIR for water quality, biological resources, and other subject areas will also apply to any proposed removal of sediment in the creek.

Mitigation Measure WQ-11b: Accommodate Future Bypass Channel Construction and Creek Widening in Any Redesign of the Arroyo Las Positas Golf Course

The City will coordinate with Zone 7 concerning any future redesign of the Arroyo Las Positas Golf Course to ensure that no new permanent facilities become a substantive impediment to the construction or operation of a bypass channel from the Arroyo Las Positas and the Chain of Lakes areas or the widening of the Arroyo Las Positas. No new clubhouse or maintenance facilities will be placed in the potential bypass location or within the potential widening area. Golf course tees, fairways, and greens can be placed in the potential bypass location, as

these ultimately can be moved if and when the bypass channel is constructed.

3.9 Land Use and Planning

This section of the EIR describes existing and proposed land uses in and around the Specific Plan Area and the potential impacts of the proposed Project on these conditions. Information about the Project Area and the regional location was obtained from relevant plans, including the General Plan, the LPZC, and the Specific Plan. Growth-inducing impacts are discussed in Chapter 4.

Environmental Setting

The Specific Plan Area is located on the western side of Livermore in eastern Alameda County immediately south of I-580, in the eastern San Francisco Bay Area. The Specific Plan Area is the western gateway to Livermore and has historically been in agricultural production. The Arroyo Las Positas runs through the Specific Plan Area generally from east to west, and is joined by Cottonwood Creek in the northeastern corner of the Specific Plan Area. Downtown Livermore is located approximately 3.5 miles to the east of the Project Area. The City of Pleasanton is located approximately 0.5 mile to the west and approximately 2 miles to the south. The City of Dublin is located to the north and northwest of the Project Area, north of I-580. (Unincorporated Alameda County and the City of Livermore are north of the Project Area.)

The limits of the city encompass an area of approximately 13,123 net acres, excluding rights-of-way. Single-family residential is the predominant land use (about 39% of the net area), followed by a mix of parks and recreation, agricultural, industrial, public uses, and retail uses. Other uses occupying smaller areas of land in the city include office, multifamily residential, airport, and churches and institutions. Approximately 1,785 acres of the land area within the urban growth boundary (UGB) are currently vacant.

The City designates approximately 50% of its land for residential uses; 19.3% for agriculture, open space, and parks; 12.9% for industrial uses; 8.2% for retail and office uses; 6.7% for community facilities; 1.9% for downtown uses; 0.4% for mixed uses; and 0.6% for BART uses.

Existing Land Uses

Specific Plan Area

A majority of the Specific Plan Area consists of nonurbanized land. Other existing land uses include a golf driving range on the Sywest Property and a small farm complex with six housing units and associated agricultural buildings on the Children's Hospital property.

The Specific Plan Area contains approximately 152 acres of private land, 83 acres owned by the City, and 15 acres owned by Zone 7. Much of the private lands are fallowed agricultural fields. One parcel is under lease to a driving range. An approximately 8-acre farm complex with six rental housing units and associated agricultural buildings is located in the southwestern portion of the Children's Hospital property, accessible by a private, unnamed drive. The remainder of the Specific Plan Area is owned by the City and Zone 7 and acts as a flood control mechanism and a buffer to the airport. During flood events, the floodplain acts as a detention basin and limits peak downstream storm flows in the City of Pleasanton.

A fiber optic easement runs directly through all the properties within the regional commercial zone. Though the exact location of the fiber optic line on each property is unknown, the entire 20-foot easement must be clear of any permanent structures to allow for any maintenance or repair needs along the line.

Project Area

The Project Area includes the Specific Plan Area and the corridors for the Jack London and Airway Boulevard Extension options, including the proposed alignment for the regional multiuse trail. Land uses in the Specific Plan Area are described above. Land uses in the Project Area include the Las Positas Golf Course; City-owned open space land west of the Livermore Municipal Airport leased and used as equestrian facilities; and privately owned land currently being used for agricultural (dry hay farming) and equestrian purposes, including a ranch house and horse boarding and riding facilities. Additionally, the proposed ultimate four-lane alignment of the Jack London Boulevard Extension crosses undeveloped mineral-resource land.

Adjacent Land Uses

The Specific Plan Area is bounded by I-580 on the north; El Charro Road on the west; active mining quarries, undeveloped quarry land, and the Arroyo Las Positas to the south; and the Las Positas Golf Course to the east. Figure 2-4 in Chapter 2, "Project Description," identifies existing land uses in and around the Specific Plan Area.

The land to the west of the Specific Plan Area is undeveloped, unincorporated private land under the land use jurisdiction of the County. The land to the north (across I-580) falls partially within the City of Dublin city limits, partially in unincorporated Alameda County.

Proposed Land Uses

The Specific Plan will be consistent with the General Plan's land use

designations for the area, further refining and developing alternatives that will fit within the BCP land use designation, including community/regional commercial uses and associated support services. The Specific Plan Area also will include open space areas with both active and passive recreational uses, as well as a segment of the regional multiuse trail.

The City-owned land within the Specific Plan Area will remain with the General Plan designation of LDAG, allowing these areas to continue to provide a buffer between the BCP land uses and surrounding land uses, such as the quarries to the south and the airport to the east. In the Specific Plan Area, the LDAG designation provides flood control and airport buffer functions.

Regulatory Setting

Alameda County

Airport Land Use Policy Plan

The Airport Land Use Policy Plan contains the following policies applicable to the proposed Project.

Safety Zone Policies

2. Within the inner portion of the safety zone, extending up to ¼ mile (1320 feet) from the end of the runway, the following are defined as incompatible land uses:

    2.1 Permanent structures or objects projecting above the level of the primary surface of the runway.

    2.2 Any use which on a regular basis would result in a density which would exceed 25 persons per net acre at a time.

    2.3 Recommended uses include agriculture and open space. Non-permanent structures or objects, such as parking area for aircraft or automobiles, are permitted where object height is consistent with height restrictions contained in [Federal Aviation Regulation] Part 77.

3. Within the outer portion of the safety zone, extending beyond ¼ mile (1320 feet) from the end of e runway, new uses shall be non-residential, low density.

    3.1 Suggested uses are agriculture, open space, non-intensive recreation, warehousing, non-intensive industry, and equipment storage.

    3.2 Uses are defined as incompatible if they would yield a density of more than 25 person per net acre over an 8-hour period (long-term) or a density of more than 50 persons per net acre for more than 2 hours per day (short-term). In particular, new shopping centers, restaurants, schools, hospitals and arenas are not compatible.

    3.3 Within the overall density limits identified in Policy 3.2, clustering of uses within a parcel may be compatible where such clustering

provides emergency landing areas; avoids concentration of development along the extended runway centerline, and does not pose a hazard to air navigation.

4. Flammable liquids, as defined in the Uniform Fire Code, shall be stored underground (with appropriate safeguard).

5. To be consistent with the ALUC plan, proposed new land uses must be compatible with Policies #2 – #4 above. To be consistent with the ALUC plan, an existing local general plan or zoning ordinance shall not permit the incompatible uses identified in Policies #2 – #4.

The standard safety zone dimensions go up to 5,300 feet long, measured from the end of the runway (Alameda County Airport Land Use Commission 1986).

City of Livermore

Livermore Municipal Airport Master Plan

The Livermore Airport Land Use Policy Plan acknowledges that the general plans prepared by the cities and County have effectively evaluated and planned for the needs and requirements of the airport. The Livermore Airport Land Use Policy Plan does not contain policies, but does contain the following land use recommendations from Chapter VIII D, Land Use Plans, applicable to the proposed Project, in order to "update the general plan recommendations in conformance with the best current estimates of the airport's growth and aviation requirements" (City of Livermore 1975).

1. Recommended land use within the approach areas but outside of clear zones, include agriculture, park and open space, light industry (warehousing, etc.) and roadside commercial, given that there are no buildings penetrating the approach surface or areas where there is a dense population.

3. The present zoning for the properties between the airport and Interstate 580, and to the east of the airport, in agriculture, should be continued, based upon present and potential noise impacts and flight clearances. Light industrial, office, highway commercial, and other airport compatible zoning can occur.

General Plan Policies

Land Use Policies

The City of Livermore General Plan is a long-range comprehensive document required by state law and adopted by the city council in 2004 that addresses issues related to the physical development, growth, and conservation of City resources.

The General Plan included an update to its Land Use Element. This element included discussion of community form and population growth and their

implications for regional growth management, followed by definitions of the land use classifications, information on population and projected buildout, and land use policies. Growth management policies were adopted also. A General Plan land use diagram was included in the Land Use Element also (Figure 3.3 in the General Plan). This land use diagram shows the UGB, land use designations within the Project Area, and designations surrounding the area.

Although the general plan does not directly reference the Specific Plan, the General Plan includes many goals and polices relevant to the Specific Plan. The goals and policies included in the General Plan provide direction for planned growth within the planning area. The following General Plan land use-related objectives and policies apply to the proposed Project.

> **Objective LU-1.1:** Locate new development so as to create a consolidated pattern of urbanization, maximizing the use of existing public services and facilities.
>
> **Policy:**
>
> **P4.** The City shall encourage the use of the planned development concept where possible to decrease construction costs, provide open space, increase the variety of housing types and provide integrated very low-, low-, and moderate-income housing.
>
> **Objective LU-1.4:** Encourage commercial development that will support and enhance a vibrant Downtown and serve existing neighborhoods.
>
> **Policies:**
>
> **P1.** The Downtown shall serve as the primary local commercial area and as the City's historic and pedestrian-oriented retail shopping area within the period of the General Plan.
>
> **P3.** Regional and community serving uses are to be located in areas designated as Business and Commercial Park or Community Serving General Commercial.
>
> **P6.** Regional and community serving retail centers shall be limited only to retail uses that are regional-serving, e.g. big box retailers and other large national retailers. Regional centers are defined as large, planned commercial centers or stand-alone big-box retailers with service uses of a scale and function to serve a regional or community-wide market and a location adjacent and accessible to a highway or freeway.
>
> **P7.** Highway commercial development adjacent to I-580 shall be limited to areas in close proximity to freeway interchanges.
>
> **P8.** The City shall prohibit strip commercial development, whether retail, office, or service commercial, to avoid the following problems:
>
> (a) traffic congestion resulting from inadequately controlled areas;

(b) high public costs of widening and improving major streets in order to accommodate traffic movement;

(c) difficulty in containment of such areas;

(d) poor aesthetic character where site planning, architectural style, landscaping, and signing are inadequate; and

(e) the spread of blight into adjacent neighborhoods.

P9. The BCP designation shall be implemented through the Planned Development (PD) zoning district or the Highway Service Commercial (CHS) zoning district, either of which requires site plan approval. The PD zoning district would identify the appropriate range of land uses consistent with the intent of the designation to ensure compatibility within the development and with adjacent land uses. The CHS zoning district may apply to appropriate locations within each interchange quadrant for freeway dependant uses, which provide an essential highway service to the traveling public. The CHS zoning district restricts freeway signs to freeway dependant uses located within freeway interchange quadrants. Freeway uses should provide services to the traveling public while allowing for visibility and convenient freeway access.

Objective LU-1.5: Protect the City's investments in public property and preserve public lands for the use of the whole community.

Policy:

P2. The City shall not dispose of publicly owned lands or commit undeveloped publicly-owned lands to long term use unless such actions are consistent with policies and proposals of the General Plan. The City shall not dispose of or otherwise relinquish easements granted under the North Livermore Urban Growth Boundary Initiative (NLUGBI).

Objective LU-4.1: Prevent development from occurring where the location or the physical or biological characteristics of the site would make the land use inappropriate.

Policies:

P1. Impacts to wetland and biological resources shall be calculated on a gross acreage basis and shall include areas of steep slopes, streets, floodways, and parks dedications that could result in losses of wildlife and plant habitat on a parcel.

P2. The City shall encourage the clustering of development in order to minimize its overall footprint in areas of ecological sensitivity, such as hillsides, alkali springs, creek corridors, and watersheds.

Objective LU-4.2: Ensure that new development complements its local context and minimizes impacts on the environment.

Policies:

P1. New development shall be designed to respect and enhance Livermore's existing development and natural environment.

P2. The use of "green construction" and land development techniques shall be encouraged as a means to reduce the environmental impacts of construction activity.

P3. Encourage all additions and new development to follow green building practices for design, construction, and operation and to incorporate as many [Leadership in Energy and Environmental Design (LEED™)] prerequisites and credits as feasible.

Objective LU-4.4: Protect the Municipal Airport from encroachment by incompatible uses.

Policies:

P1. The City shall encourage development of property within the immediate vicinity of the Airport for light industrial and transportation uses to the extent that noise standards and flight clearance requirements are maintained, and environmental impacts are adequately mitigated.

P3. Development at the Airport shall be subject to Federal Aviation Administration, Airport Land Use Commission, and City building/structure height restrictions.

Interstate 580 Scenic Route Policies

I-580 is designated as a scenic route by the General Plan (City of Livermore 2004a) and would have views of the Specific Plan Area. Figure 4-1 in the Community Character Element of the General Plan identifies the Las Positas Golf Course, which abuts the Specific Plan Area to the east, as a scenic vista from I-580. The I-580 Scenic Corridor is defined as the area within 3,500 feet of the freeway centerline and visible from the roadway (City of Livermore 2004a) .

The General Plan also identifies Jack London Boulevard south of the Las Positas Golf Course as a scenic route (Figure 4-1, General Plan Community Character Element) and states:

> On the south, from El Charro Road to Airway Boulevard, views range from fallow agricultural fields, the Las Positas Golf Course, and limited views of the Airport and aircraft activity.

The following General Plan goals, objectives, and policies, from Chapter 4, Community Character Element, apply to the proposed Project.

Goal CC-4: Protect and enhance public views within and from established scenic routes, including views of arroyos.

Objective CC-4.1: Protect public views from scenic routes and corridors.

Policies:

P1. Development shall not be allowed to obscure, detract from, or negatively affect the quality of the views from designated scenic routes.

P2. The City shall maintain in open space that portion of the hills which is seen from the freeway and which is within the I-580 Scenic Corridor as shown in Figure 4-1 [of the General Plan]. Any development within the I-580 Scenic Corridor is subject to the policies set forth under Goal CC-4 and the conditions set forth in Section C, I-580 Scenic Corridor Implementation.

P3. The City shall permit no development to wholly obstruct or significantly detract from views of any scenic area as viewed from a scenic route.

Objective CC-4.2: Provide a continuous, convenient system of scenic routes.

Objective CC-4.5: Control access to scenic routes.

Policy:

P1. Relatively uninterrupted movement of leisure driving on scenic routes should be accommodated by control of access, avoidance of stop signs, and synchronization of traffic signals on scenic expressways and thoroughfares whenever possible.

Objective CC-4.6: Use landscaping to increase the scenic qualities of scenic routes.

Policy:

P1. Landscaping should be designed and maintained in scenic route corridors to provide added visual interest, to frame scenic views, and to screen unsightly views.

Objective CC-4.7: Minimize the presence of transmission towers and lines within scenic routes.

Objective CC-4.8: Establish architectural and site design review for projects within scenic routes.

Policies:

P1. Site planning, architectural, and landscape architectural design review shall be required so that development will be attractive from the highway and roads, and a harmonious relationship will exist among the various elements of proposed and existing developments and the visual qualities of the scenic route. Careful consideration shall be given to natural land contours and to appearances which will enhance scenic qualities from the scenic routes.

P3. Landscape and construction design should be in keeping with the Cityscape and natural skyline and reflect the density, movement, and activities of the population.

P4. In all zoning districts where the allowable height limit exceeds 35 feet, each proposed structure over 35 feet, except utility poles and lines, should be reviewed to ensure that such structure will not conflict with any view from any scenic route.

P5. Utilize view angles established in Community Character Element Section IV.C (*I- 580 Scenic Corridor Implementation*) to prohibit structures from extending above the applicable view surface established by the view angle.

Objective CC-4.9: Protect scenic routes from extensive or unnecessary grading.

Policies:

P1. Alteration of natural or artificial land contours should not be permitted without a grading permit as a means of preserving and enhancing the natural topography and vegetation in developable areas.

Objective CC-4.10: Apply the following criteria in the review of building and grading permits in developable areas.

Policy:

P3. The I-580 Scenic Corridor is defined as the area which is within 3,500 feet on each side of the centerline of I-580, and visible from the I-580 roadway. Development in the I-580 Scenic Corridor must preserve, to the largest degree feasible, the view of the ridgelines as seen from the I-580 Scenic Corridor roadway. To that end, no development, structures or man-made objects except plantings erected for landscaping purposes may obscure any portion of the ridgeline as seen from the I-580 Scenic Corridor roadway, except as provided in Community Character Element Section IV.C (*I-580 Scenic Corridor Implementation*). Landscaping, including trees, shall be planted in a manner such that when mature, it does not create a wall-like effect that substantially obscures views of the ridgeline.

Objective CC-4.12: Provide for normal uses of land and protect against unsightly features in scenic routes.

Policies:

P1. In both urban and rural areas, normally permitted uses of land should be allowed in scenic routes, except that panoramic views and vistas should be preserved and enhanced through: (1) Supplementing zoning regulations with special height, area, and side yard regulations. (2) Providing architectural and site design review. (3) Prohibiting and removing billboards, signs not relevant to the main use of the property, obtrusive signs, automobile wrecking and junk yards, and similar unsightly development or use of land.

P2. Design and location of all signs should be regulated to prevent conglomerations of unsightly signs along roadsides.

Objective CC-4.14: Control removal of vegetation in scenic routes.

Policy:

P1. Except for agricultural crops, no vegetation should be removed without permission of the local jurisdiction, as a means of preserving scenic quality.

Objective CC-4.15: Control the alteration of streambeds and bodies of water in scenic routes.

Policies:

P1. Alteration of streambeds or bodies of water and adjacent vegetation should be permitted only with approval of the local jurisdiction, as a means of preserving the natural scenic quality of stream courses, bodies of water, vegetation, and wildlife in the Valley.

P2. Development adjacent to streams, canals, reservoirs, and other bodies of water should be in a manner that will preserve the natural scenic qualities of the area, or when scenic qualities are minimal shall be designed and treated so as to result in naturalistic forms. Zone 7 has adopted Interim Design Standards and Practices for future construction improvements of channels. Any development with arroyos and creeks fall under these standards and are subject to Zone 7's review to ensure there are no impacts to Zone 7 facilities.

C. I-580 Scenic Corridor Implementation

1. Exceptions/Exemptions to I-580 Scenic Corridor Development Requirements

Development in the I-580 Scenic Corridor may only take place outside of the view angle envelopes and/or within established view corridors on parcels created before August 14, 2000, consistent with the NLUGBI:

a. Where application of the regulations contained in the *Scenic Route Goals, Objectives, Policies, and Actions* would, based on the legal opinion of the City Attorney, deprive a private property owner of substantially all reasonable economic use of the lot, and where the City Council finds both of the following:

(1) That the development is spaced sufficiently on the lot so as not to create the effect of a wall between the viewer and the ridgeline; and

(2) That the development on the lot does not detract from the scenic value of the corridor; or,

e. Where the development does not exceed a view angle created by an existing structure. The view angle is measured from the roofline of the existing structure closest to the freeway as viewed at a 90-degree angle to the freeway. Only that portion of the proposed development located directly in front of the existing structure may exceed the adopted view angle.

3. Grading

(a) Grading shall be limited so as to preserve natural features where large stands of vegetation, scenic natural formations, or natural watercourses exist.

(b) Any contour altered by grading should be restored by means of land sculpturing in such a manner as to minimize run-off and erosion problems and should be planted with low-maintenance plant materials that are compatible with the existing environment and the intent of the Scenic Route goals, objectives, policies, and actions. (c) Neither (a) nor (b) above shall preclude the restorations identified within Subparts 5A and 5B of Subarea 5.

4. I-580 Scenic Corridor Subareas

The I-580 Scenic Corridor is divided into six subareas, as shown in Figure 4-2 [of the General Plan]. Policies and development standards are identified for each subarea that reflect the unique visual resources in each area. *Development is not permitted if it is inconsistent with the NLUGBI.* The policies and development standards (such as identified view angles) are intended to preserve views to ridgelines and hillsides as seen from I-580. Development within each Subarea shall also be subject to the general Scenic Corridor design standards contained in Objective CC4.10 and related policies, except as otherwise expressly provided.

Subarea 6

a. Subarea 6 is located on the south side of the I-580 freeway. The western boundary of Subarea 6 is El Charro Road. The eastern boundary is located roughly equidistant between the Portola Avenue overcrossing and North Livermore Avenue. Figures 4-12 and 4-13 [of the General Plan] establish the boundaries for Subarea 6.

b. Subarea 6 is divided into three subparts. These subparts reflect natural dividing lines using roadways, visual resources, freeway/view relationships and areas of existing development. Figure 4-12 [of the General Plan] identifies Subpart 6A, and Figure 4-13 [of the general plan] identifies Subparts 6B and 6C. Subarea 6 contains views to distant hills and ridgelines low on the horizon.

c. Subpart 6A extends from El Charro Road to the west to Airway Boulevard to the east. The western half consists of nearly level agricultural fields and undeveloped parcels. Las Positas Golf Course comprises the eastern half. A golf driving range is located in the center of the Subpart, with fields on either side. Farmhouses, barns and other structures related to local agriculture are located within this area. A 2.2 degree view angle is established for this Subpart to preserve views of the ridgelines.

Airport Protection Area Policies

Figure 3-5 in the City General Plan designates the Specific Plan Area as an APA. The following General Plan objectives and policies apply to the proposed Project.

Objective LU-4.4: Protect the Municipal Airport from encroachment by incompatible uses.

Policies:

P1. The City shall encourage development of property within the immediate vicinity of the Airport for light industrial and transportation uses to the extent

that noise standards and flight clearance requirements are maintained, and environmental impacts are adequately mitigated.

P2. New residential land use designations or the intensification of existing residential land use designations shall be prohibited within the APA, which is shown on Figure 3-5. The APA includes the area located within 7,100-feet west of the western end of runway 7L-25R, 5,000-feet north of the northern edge of runway 7L-25R, 5,000-feet east of the eastern end of runway 7L-5R, and 5,000-feet south of the southern edge of runway 7R-25L.

P3. Development at the Airport shall be subject to Federal Aviation Administration, Airport Land Use Commission, and City building/structure height restrictions.

General Plan Land Use Designations

The General Plan designates the majority of the Specific Plan Area as BCP, which allows an FAR of 0.3 to 0.5. BCP areas are required to be a minimum of 20 acres, located in the general vicinity of the freeway and typically along major streets.

The City-owned parcels in the southern half of the site and the R&J properties adjacent to the site are designated as LDAG. This designation applies to areas where 20-acre parcels may be appropriate and is used to establish transition areas between lower density residential development and larger agriculture parcels around the city designated as Agriculture/ Viticulture. In the Specific Plan Area, the LDAG designation provides flood control and airport buffer functions.

The Las Positas Golf Course is designated as OSP and LDAG, and the Jack London Boulevard Extension option straddles the Community Facilities—Airport (CF-AIR) and Open Space/Sand & Gravel (OSP/S&G) designations.

Figure 2-4 in Chapter 2, "Project Description," identifies the land use designations in and around the Specific Plan Area.

The following describes the allowed uses in the relevant designations and their allowed and prohibited uses.

Business and Commercial Park (BCP) (Site coverage provided by use)—This designation identifies locations along major streets, and in the general vicinity of freeway interchanges, where a mix of limited service and highway commercial, community/regional commercial retail, office and light industrial activities may be appropriate. The BCP designation encourages the development of employment-generating activities adjacent to destination-oriented and limited retail commercial uses. In addition to office and light industrial activities, uses could include large, planned commercial centers or stand-alone big-box retailers with service uses of a scale and function to serve both surrounding employment-generating activities and the regional market.

Limited Agriculture (LDAG)—The Limited Agriculture designation applies to those areas where 20-acre parcels may be appropriate due to existing parcel size; allowed uses include those to preserve and promote agricultural and viticulture uses in locations suitable for cultivated agriculture.

Open Space (OSP)—The Open Space designation is applied to areas to be maintained as permanent or semipermanent open space. This designation may be applied to areas that are already open space, and those that should remain open space because they have valuable natural or scenic resources, or because they are unsuitable for development due to environmental hazards. This designation includes parks, trailways, recreation areas, recreation corridors, and protected areas, such as creeks and arroyos, or similar open space uses determined appropriate for the site. All proposed structures on parcels designated OSP are subject to City Design Review. General locations for potential future park facilities are indicated on the General Plan Land Use Map by a floating designation as a circular symbol and the text "OSP." Floating designations indicate the need for the facility within the general area of the City where future need for this facility is anticipated. Floating designations are not intended to be site specific.

Community Facilities—Airport (CF-AIR)—The Community Facilities designation provides areas for public agencies and institutions, including ... the Livermore Municipal Airport.

Open Space/Sand and Gravel (OSP/S&G)—These are areas of Statewide concern due to their demonstrated level of quality aggregate. The primary use allowed in areas designated OSP/S&G is open space, as defined above under OSP, and sand and gravel extraction, processing and related activities shall be secondary. Use of S&G lands for agricultural use shall be given priority over mineral extraction in areas where the soils are designated for prime or unique farmland. Extraction of aggregate shall be conditionally permitted only after appropriate mitigation for potential impacts to environmental resources and surrounding uses has been provided. Processing and distribution of aggregate uses shall be limited to ensure that impacts on downwind land uses are appropriately mitigated.

Livermore Planning and Zoning Code

Chapter 17 of the LPZC contains provisions applicable to all zoning districts, specific district regulations, development standards applicable to one or more uses or districts, and procedural requirements for the review of development proposals. All future zoning in the Project Area should be consistent with the Specific Plan's uses. The entire Specific Plan Area is zoned as PD in the LPZC, requiring any development proposals to obtain site plan approval by the City.

PD—The intent and purpose of a PD district for primarily commercial and industrial uses is to guide the development of commercially and industrially designated land, particularly (but not necessarily) near a freeway or freeway interchange, near a major entrance to the city, or adjacent to residential uses. Both the community serving general commercial (CSGC) and the business and commercial park (BCP) General Plan designations require implementation

> through a PD district. The flexibility allowed in design in a PD district also allows a developer to address geologic, topographical and environmental factors. At the same time, a PD district must conform to the requirements of the General Plan and the intent of this code and municipal code in requiring adequate standards necessary to protect the public health, safety and general welfare. [LPCZ, 2-76-020(B).]

Airport Zoning Restrictions

Per Section 3-05-270.C:

> Notwithstanding structural limitations found elsewhere in this code, nor exceptions to those height limitations found in this section, the height of structures located within 5,000 feet of any airport runway shall not exceed 40 feet (Ord. 1001, 1979; Ord. 442 § 20.80).

Urban Growth Boundary

Livermore is completely surrounded by a UGB. This boundary is intended to protect existing agricultural uses and natural resources outside the city from future urban development. Livermore's UGB was completed in two phases. The South Livermore Urban Growth Boundary Initiative, passed by local voters in March 2000, established the UGB around the southern edge of the city. In December 2002, the city council passed the North Livermore Urban Growth Boundary Initiative, which completed the UGB around the northern edge of the city. The UGBs share goals of preserving agriculture and open space and preventing urbanization.

In the Specific Plan Area, the UGB runs contiguous with the city limit line on the northern and western boundaries of the Specific Plan Area, along I-580 and El Charro Road, respectively. The UGB's southern boundary continues along El Charro Road just south of the Specific Plan Area boundary. Figure 2-2, "Project Location," in Chapter 2, "Project Description," illustrates the UGB in the Specific Plan Area.

Impact Analysis

Thresholds of Significance

The proposed Project would have a significant effect on land use and public policy if it would:

- physically divide an established community;
- introduce new land uses that would conflict with established uses within the vicinity of the Project Area; or

- conflict with applicable land use plans or policies adopted by agencies with jurisdiction over the Project adopted for the purpose of avoiding or mitigating an environmental effect.

Approach and Methodology

The analysis assesses potential conflicts that could arise from new land use patterns. Existing and future land use conditions are compared through the review and evaluation of existing land use information obtained from relevant plans and maps.

Specific Plan

The Specific Plan identifies how the land use goals and policies of the General Plan are achieved in the Specific Plan.

The land use section of the Specific Plan defines the development patterns and characteristics used to meet the General Plan goals. The Specific Plan describes the specific land use programs that will structure the type, extent, and intensity of future development. The Specific Plan adheres to the General Plan land use designations and describes land use designations for commercial uses and open space areas.

The proposed Specific Plan zoning district diagram (Figure 2-6 in Chapter 2, "Project Description") shows the new zoning districts proposed for the Specific Plan Area: PD-ECSP-RC, PD-ECSP-HRC overlay, and PD-ECSP-OS. These designations and the uses permitted for each designation are identified in Tables 2-1 through 2-3 in Chapter 2, "Project Description."

Impacts and Mitigation Measures

Impact LUP-1: Physical Division of an Established Community—Less than Significant

Existing land uses in the Specific Plan Area consist primarily of vacant, fallow, and dry farmed lands. The Children's Hospital property contains a small farm complex with six rental residences and associated agricultural buildings. The farm complex is not considered an established community because the residences are all part of one piece of private property. Because the Project would not physically divide an established community, this impact would be less than significant. No mitigation is required.

Impact LUP-2: Construction-Related Effects on Existing Land Uses—Less than Significant

As the different properties are developed in the Specific Plan Area and for off-site roadway and infrastructure improvements, there will be a potential for

temporary impacts associated with construction activities, including site grading, excavation, and building erection. These activities involve the movement of heavy construction equipment, truck traffic, construction noise, and air pollutant emissions. Construction impacts specifically related to nuisance effects (i.e., air quality, noise, and traffic) are addressed in sections 3.3, 3.11, and 3.15 respectively, and construction impacts on biological resources are addressed in section 3.4. However, construction within the Project Area would occur sporadically, and only certain land uses would be individually affected during each of the seven phases. To minimize construction-related impacts on surrounding receptors, various mitigation measures would be required to reduce the impacts of noise, traffic, and air pollutant emissions as discussed in the above referenced sections of this EIR. Because the construction-related impacts are addressed in other sections of this document, this impact is considered less than significant. No mitigation is required.

Impact LUP-3: Incompatibility with Existing or Future Land Uses—Less than Significant

The open space land uses proposed in the southern portion of the Specific Plan Area would be generally compatible with existing rural land uses located south of the Specific Plan Area. However, there are several potential constraints in the area that have associated challenges in terms of creating compatible development throughout the Specific Plan Area and between the proposed Project and adjacent uses.

Natural Resources

Natural habitat surrounds the Arroyo Las Positas and Cottonwood Creek, and the majority of the Specific Plan Area falls within the 100-year floodplain. Any development will need to provide mitigation in order to minimize impacts to the Arroyo and its function in the regional stormwater management system. Additionally, the existing Cottonwood Creek culvert would be extended from I-580 to under the new Airway Boulevard Extension option. Refer to the impact discussions in section 3.8, "Hydrology and Water Quality," and section 3.4, "Biological Resources," for a full discussion of impacts related to hydrology and water quality and biological resources as a result of implementation of the proposed Project.

Implementation of Specific Plan Policy 2.2.3 and Objective 2.2.3a would reduce impacts to natural resources areas by providing an adequate natural resource buffer area around the Arroyo Las Positas.

> **Policy 2.2.3.** Ensure that development patters within the El Charro Specific Plan Area protect natural resources and habitat areas within the [Specific] Plan Area.
>
> **Objective 2.2.3a.** Provide a 100-foot buffer (measured from top of bank) on either side of the Arroyo Las Positas, in order to help protect the arroyo habitat area. Due to excessive site constraints, adjust the arroyo buffer on the Children's Hospital site to be 50-feet from top of bank to the north and 150-feet from top of bank to the south.

Property Access and Infrastructure Needs

Impacts related to utilities are addressed in section 3.13, "Public Services and Utilities," and impacts related to access are addressed in section 3.15, "Transportation and Traffic." The Specific Plan anticipates and plans for circulation needs as well as infrastructure needs for the entire Specific Plan Area.

A fiber optic easement runs directly through all the properties within the regional commercial zone. The 20-foot easement will be clear of any permanent structures to allow for any maintenance or repair needs along the line. The land use concept in the Specific Plan outlines potential development patterns that capitalize on this easement as a continual linear open space, transversing the entire Specific Plan Area and connecting individual properties to each other along the way. Chapter 3 of the Specific Plan recommends setback variations from the fiber optic easement in order to facilitate a pedestrian environment and provide a connecting element between the retail developments (EDAW|AECOM 2006).

Church-Related Uses on the Children's Hospital Property

The Children's Hospital property is identified for PD-ECSP-RC zoning in the Specific Plan (see Figures 2-3 and 2-6 in Chapter 2, "Project Description"), which could include retail commercial uses and lifestyle services such as day or health spas, sports centers, restaurants and hotels (EDAW|AECOM 2006). However, a potential alternate use of the Children's Hospital parcel is the construction and development of a church campus. The first phase of development of this parcel could include a campus to accommodate religious services, traditional church functions such as weddings and funeral services, conferences, professional counseling, preschool and daycare, religious education, banquets, concerts and other related church uses. A primary auditorium; meeting rooms and classrooms; exterior children's playground areas; playfields; and parking, including overflow parking and RV storage, may be constructed as part of the full Specific Plan Area buildout. Roadway crossings of the waterways, in addition to the Airway Boulevard Extension option if it were selected, would be necessary on this parcel.

Under full buildout of the proposed Project, the alternate land use as a church campus would be separated from quarry operations and traffic by the Las Positas Golf Course, the airport, and the commercial uses in the Specific Plan Area. The church uses therefore would not be incompatible with quarry operations. Church-related uses would be considered sensitive to noise from I-580 and the Livermore Municipal Airport. Noise impacts from I-580 and the airport are addressed in section 3.11, "Noise," and potential hazards from the airport are addressed in Impact HAZ-5 in section 3.7, "Hazards and Hazardous Materials."

Commercial and Open Space Uses

The commercial and open space uses allowed in the Specific Plan zoning districts are generally compatible with each other. The proposed multiuse trail is

considered compatible with agricultural uses by the City of Livermore, and the proposed Project would not interfere with the existing agricultural operations to the south.

The Prime Outlets Livermore Valley project includes a request for a General Plan Amendment to the height restrictions for the I-580 Scenic Corridor. The Prime Outlets Livermore Valley retail project would conflict with the City's current General Plan Community Character Element, Section C.4, which specifies a "2.2 degree view angle is established for this Subpart to preserve views of the ridgelines." The proposed Project extends up to more than 20 feet above this view angle in at least six places. Although the proposed heights exceed current standards, they are consistent with the proposed General Plan Amendment. The Scenic Corridor projections will not be incompatible with surrounding land uses. Because the potential aesthetic impacts are addressed in section 3.1, "Aesthetics and Visual Resources," of this document, this impact is considered less than significant.

Airport Restriction

The Specific Plan Area is located immediately to the west of the Livermore Municipal Airport. The General Plan restricts land uses within 7,100 feet of the runway to nonresidential uses. Uses on those properties within the direct flight path for the two runways are also further restricted by the FAA. The properties located within the direct flight path are owned by the City and are intended to provide a buffer between any surrounding uses and the airport. FAA regulations govern many of the uses permitted within these open space areas. Goals, policies, and objectives in the Specific Plan will help facilitate use and preservation of the Specific Plan Area's open space areas. Implementation of Specific Plan Goal 2.2, Policy 2.2.1, Policy 2.4.1, Objective 2.4.1a, and Objective 2.4.1b, would help to reduce land use compatibility impacts associated with the nearby airport by ensuring that airport-compatible development occurs within the APA.

> **Goal 2.2.** City open space areas will be maintained to provide a variety of community supportive functions that are compatible with the Airport Protection Area (APA).
>
> **Policy 2.2.1.** Provide passive recreation opportunities within the City owned open space areas. Uses permitted within these areas include small gathering spaces and trails; active recreation uses are not permitted.
>
> **Policy 2.4.1.** Locate land uses within the [Specific] Plan Area to ensure compatibility with surrounding land uses, including quarry operations and the Livermore Municipal Airport.
>
> **Objective 2.4.1a.** All land uses proposed on properties under the APA will need prior City approval.

> **Objective 2.4.1b.** All building heights throughout the Specific Plan area are subject to height regulations established in the Specific Plan and supersede height restrictions established in the Livermore Planning and Zoning Code.

The extension options for Jack London/Airway Boulevard and other off-site roadway and infrastructure improvements would not conflict with airport restrictions because these uses are nonresidential and therefore would not be affected by airport land uses.

The proposed Specific Plan zoning districts, policies, and guidelines for development, as well as the design of the east/west roadway extension, are consistent with those prescribed in the Airport Master Plan and the ALUPP for the required setbacks, height restrictions, and density limitations within the APA.

The Project would be constructed in accordance with safety guidelines in the Airport Master Plan. In addition, alternate uses on the Children's Hospital parcel must be consistent with the Airport Master Plan and Specific Plan policies and guidelines.

Development on the small portion of the Sywest property within the ALUPP outer safety zone would be constrained by the 100-foot setback from Arroyo Las Positas and site approval would apply ALUPP density requirements to the portion of the property within the safety zone.

The Specific Plan would allow shopping center and restaurant use on the Robert Himsl property among other uses. Although ALUPP Policy 3.2, nominally states that shopping centers and restaurants are not compatible with outer safety zone requirements, ALUPP Policy 3.3 specifies that clustering of development within the overall density limits will be compatible if such clustering provides an open area suitable for emergency landing, avoids concentration of development along the extended runway centerline and does not pose a hazard to air navigation. The Specific Plan requires clustering of development on the northern portion of the Robert Himsl property to ensure that the density limitations of Policy 3.2 are met and that the clustering requirements of Policy 3.3 are met and thus that overall potential development on this property would meet the requirements of the ALUPP. The City will confer with ALUC to ensure compliance with the ALUPP for the Specific Plan and for specific development approvals.

Thus, with implementation of the Specific Plan, the project would be consistent with applicable land use policies related to airport restrictions.

Quarry Uses

Active gravel and sand quarries are located just south of the Specific Plan Area. The quarries use El Charro Road, which forms the western boundary of the Specific Plan Area, as their primary access and hauling route and to connect to I-580. Quarry operations in this area contain a level of quality aggregate material that is considered a statewide resource. The options for the extension of Jack London/Airway Boulevard and other off-site roadway and infrastructure

improvements would be compatible with existing quarry uses because these improvements would not impede quarry traffic or other existing quarry operations and the new roadway would not be a designated truck route. As noted in the *Rhodes & Jamieson Aggregate Mines Draft EIR* (Douglas Herring & Associates 2004), quarry traffic and other operators currently use El Charro Road, a north-south roadway, and would not typically use east-west roadways such as the proposed Jack London/Airway Boulevard Extension.

Refer to section 3.15, "Transportation and Traffic," and section 3.10, "Mineral Resources," for a more detailed explanation of traffic issues related to the compatibility between quarry operations and the proposed Project.

The ultimate four-lane alignment of the Jack London Boulevard Extension option would cross a small section of private land immediately south of the Specific Plan Area currently identified as being within a mineral resource zone (MRZ-2) and designated as OSP/S&G. Because of the land exchange and quarry accommodating mitigation discussed under Impact MIN-2 in section 3.10, "Mineral Resources," this road extension would not be incompatible with the extraction of mineral resources. Additionally, the *Rhodes & Jamieson Aggregate Mines Draft EIR* (Douglas Herring & Associates 2004), which evaluates impacts from the proposed sand and gravel mining operation, states that "with agreement and cooperation between the interested parties, a superior alternate alignment could be established. The proposed surface mining permits would take no access from Jack London Boulevard regardless of the alignment." The *Rhodes and Jamieson Aggregate Mines Draft EIR* did not identify the extension of Jack London Boulevard as an impact.

The Jack London Boulevard Extension option also would cut through the southwestern corner of the adjacent City-owned property to the southeast, which currently is used for equestrian boarding and other activities; however, the road alignment would traverse only a small portion of the property at the corner and therefore would not interfere with equestrian activities on that property, which would predominantly remain as one piece without isolated portions.

The proposed Project would be generally compatible with the existing and future adjacent land uses. The range of commercial uses proposed throughout the northern portion of the Specific Plan Area would be generally consistent in terms of the density, building scale, and character of the existing development along I-580. In addition, implementation of Specific Plan Policy 2.4.1, Objective 2.4.1c, Policy 4.1.2, and Goal 4.2 would reduce impacts related to land use compatibility with the quarries to a less-than-significant level by siting land uses in such a way as to ensure compatibility and making improvements to El Charro Road and other roadways as necessary.

> **Policy 2.4.1.** Locate land uses within the Plan Area to ensure compatibility with surrounding land uses, including quarry operations and the Livermore Municipal Airport.
>
> **Objective 2.4.1d.** To minimize potential conflicts with quarry trucks operating along El Charro Road, driveway access on El Charro Road between Jack

London/Airway Boulevard and the I-580/El Charro-Fallon Road interchange, other than emergency vehicle access, will not be permitted. A single right turn access onto El Charro Road south of Jack London/Airway Boulevard is permissible.

Policy 4.1.2. Improve El Charro Road in order to accommodate future development traffic as well as the existing quarry truck traffic that use this roadway as their primary access to I-580.

Goal 4.2. Vehicular traffic and quarry truck traffic, to the extent feasible, shall be adequately accommodated by the design of the street network.

It should also be noted that this impact analysis addresses only the land use compatibility impacts on existing and future land uses, and does not address physical environmental impacts of proposed uses. All potential physical environmental effects of the proposed Project on adjacent land uses, and those of adjacent uses on the proposed Project, including mineral resources, traffic, noise, aesthetics, and public services, are addressed in their respective sections of this EIR.

Because land use compatibility impacts would be reduced by implementation of the Specific Plan goals and policies, these impacts are considered less than significant.

Impact LUP-4: General Plan and Specific Plan Coordination—Less than Significant

As the Specific Plan includes additional standards and guidelines unique to the area, three new zoning districts specific to the Specific Plan Area will be established to implement these standards and guidelines. New zoning districts will allow customization of development standards and permitted uses to reflect the unique nature and community character goals of the Specific Plan Area. The new districts will be consistent with the intent and direction of the General Plan and intended to facilitate sufficient City review while ensuring adequate flexibility to achieve the goals outlined in the Specific Plan. When there are discrepancies between the Specific Plan and LPZC, the Specific Plan will be the controlling document. Where the Specific Plan is silent on certain issues, such as definitions or procedures, the LPZC will be the controlling document.

The current zoning designation in the Specific Plan Area is PD, which requires any development proposals to obtain site plan approval by the City. The proposed zoning district diagram shown in Figure 3.9-1 includes the new zoning districts specific to the Specific Plan Area: PD-ECSP-RC, PD-ECSP-HRC, and PD-ECSP-OS.

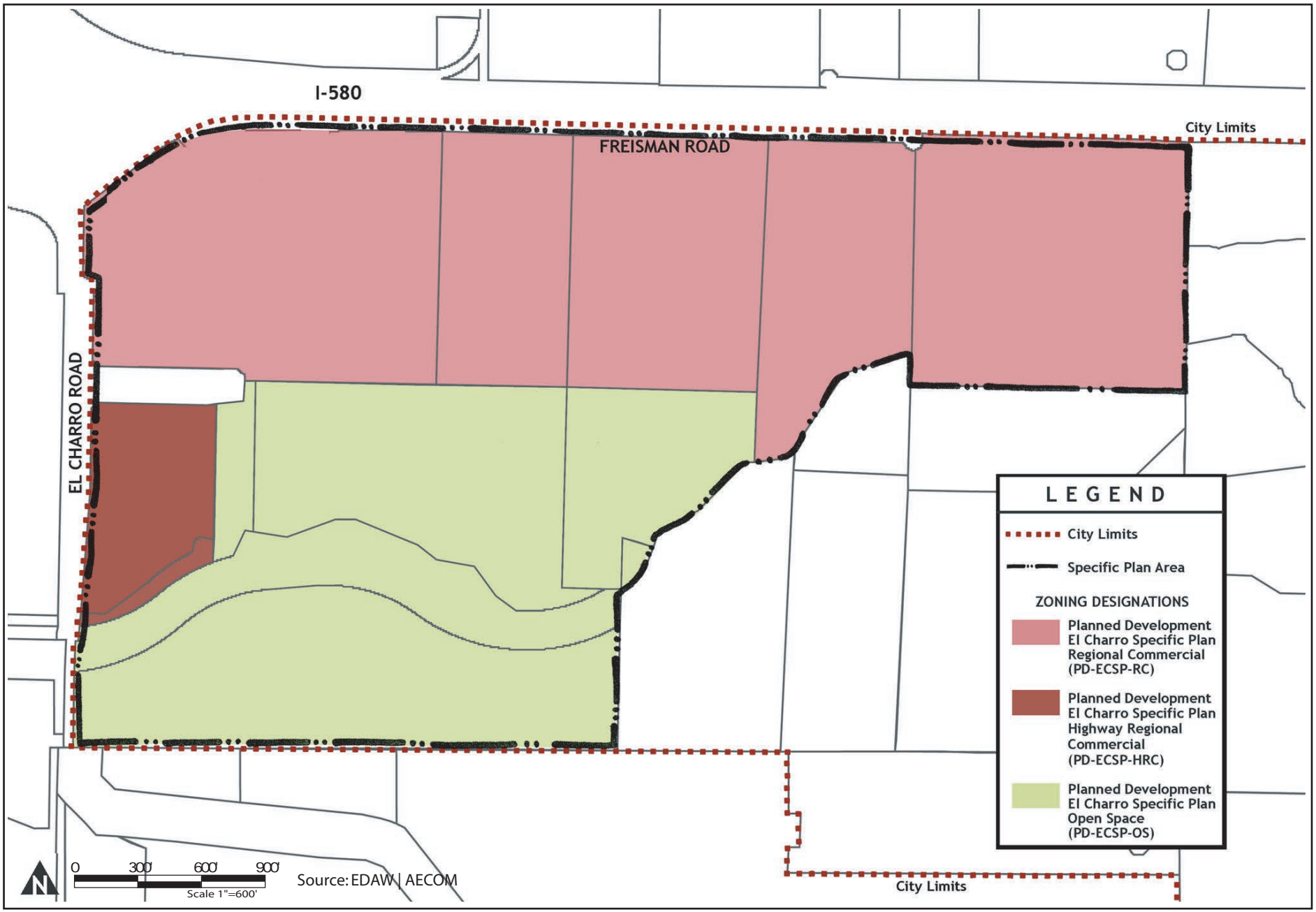
As noted previously, the Children's Hospital property is identified for PD-ECSP-RC zoning (see Figure 3.9-1). However, a potential alternate use of the Children's Hospital parcel is the construction and development of a church campus. This use would be designed consistent with the Specific Plan guidelines and standards. Section 3-05-270.C of the LPZC states that structures within 5,000 feet of any runway may not exceed 40 feet. The Prime Outlets Livermore

Valley development project would have single-story buildings that include limited architectural features up to 50 feet in height. This impact would be considered less than significant with a General Plan Amendment to the view angle variation proposed as part of the entitlement process for the PD-ECSP-RC zoning district. As shown in Chapter 2 of this EIR, the General Plan Amendment related to the Visual Scenic Corridor Policies provides for a maximum structure height limit of 50-feet and projections into the view plane will encompass an area of no more than 1.25% of total site area.

The OS/S&G zoning designation does not conflict with the Jack London Boulevard Extension option; however, there would be impacts related to utilization of the land for sand and gravel extraction. These impacts are discussed in section 3.10, "Mineral Resources," Impact MIN-2, which finds impacts related to the loss of availability of a valuable mineral resource within the alignment of the Jack London Boulevard Extension less than significant with the mitigation proposed. It should be noted that this is not a policy consistency issue, but a mineral resources issue and thus is not considered a significant impact for the purposes of this land use policy discussion.

The General Plan Circulation Element (City of Livermore 2004a) includes the extension of Jack London Boulevard between Isabel Avenue/SR 84 and El Charro Road to provide access to the western area of the city. The Jack London Boulevard Extension option would not conflict with existing plans and policies because this extension was planned and evaluated in the General Plan (Figure 5-2, Proposed Roadway and Intersection Improvements, in the Circulation Element of the General Plan). The Airway Boulevard Extension option, if chosen, will also include a General Plan Amendment to remove the Jack London Boulevard Extension and incorporate the Airway Boulevard Extension option into the Circulation Element. Approval of the General Plan Amendment would resolve any inconsistencies between the proposed circulation and relevant plans and policies. Additionally, as shown in Specific Plan Figures 5-2 and 5-3 (Southern Roadway Alignment Utilities System and Northern Roadway Alignment Utilities System), infrastructure improvements all would follow proposed or existing roadways within the Specific Plan Area.

The General Plan Community Character Element, Section C.4, specifies that a "2.2 degree view angle is established for this Subpart to preserve views of the ridgelines." As discussed in more detail in section 3.1, "Aesthetics and Visual Resources," the Prime Outlets Livermore Valley development includes limited architectural features that extend up to 20 feet above this view angle in at least six places. Prime Outlets Livermore Valley has requested a General Plan Amendment to the height limitations for architectural features that provide visual amenities in this gateway development. A General Plan Amendment also would be considered for the Children's Hospital site for Scenic Corridor height limitations should the Crosswinds Church, an assembly use, move to this site. Because the General Plan Amendment would only allow limited projections through the current view plans, the majority of development within the Specific Plan Area would be sufficiently limited in height to preserve the views of the distant hills while meeting functional height requirements in volume and mass



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Figure 3.9-1
Proposed Zoning Designations

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for an assembly land use. The proposed General Plan policy establishes the criteria to limit the height, depth, and width of proposed view plane penetrations. The policy also requires the proposed penetrations to contribute to the architectural merit of the proposed Project. Therefore, the impact of the proposed height modifications would be reduced to less than significant through implementation of the proposed General Plan Amendments.

The Specific Plan includes two circumstances under which buildings or architectural elements may be allowed or are encouraged to project vertically into the view plane of the delineated Scenic Corridor as described in Chapter 2 of the Specific Plan. Projections into the Scenic Corridor view plane are allowed under site-specific conditions, which include the following.

- Institutional land uses, which are allowed a 15-foot vertical projection into the view plane. The design of an institutional building could require taller ceiling heights than that of other allowed land uses. In addition, site constraints should be considered if construction of a viable building is prevented.
- Special architectural elements, which could project into the view plane in order to establish a clearly discernible gateway into Livermore.

These projections are allowed considering the functional needs of the proposed land uses, and the potential visual implications of these actions. The overall intent, however, is to provide development and landscaping that creates a cohesive district within the city and serves as a city gateway element, while protecting the views of the southern ridgelines.

When seen as a cohesive district, viewers will discern a layered landscape, with foreground views of vineyards, trees, shrubs, parking and streets; middle-ground views of buildings, including overall massing and roof forms; and background views of hills and windrows of trees in the distance. The following discussion describes the character, quality, and circumstances under which these special, site-specific conditions would occur.

1. *Children's Hospital:* The Children's Hospital site is located in the northeastern corner of the Specific Plan Area. This site is divided into three areas by the Arroyo Las Positas corridor, and could be further divided by the proposed Airway Boulevard Extension option. Because of the setback requirements associated with these conditions, the potential net developable area and building envelope(s) on this site would have both unusual shapes and be relatively small. While the site would remain suitable for traditional commercial land uses, institutional uses may require projections into the Scenic Corridor's view plane. In order to accommodate auditorium-style rooms large enough to accommodate gatherings of people, institutional buildings often require ceiling heights taller than those used for commercial structures.
2. *Prime Outlets Livermore Valley Adjacent to I-580:* The General Plan recognizes this area as an important gateway into the city when arriving from

the west. The General Plan allows for the development of a regional serving lifestyle retail shopping area on this site. As such, the design of this development must provide more vertical height to facilitate high quality architecture fronting the freeway, while still preserving views of distant hills.

In order to address this design challenge, the Specific Plan advocates the creation of carefully placed vertical architectural elements, such as towers, located within the cluster of buildings. It is important to note that the character of these towers should be architectonic and unlike vertical signage often found at similar commercial sites. The towers should include visually discernible base, body, and roof elements. While some signage is allowed on the towers, it must be an integral component of the structure and appear substantial, but may not be visually dominant. The character of the tower elements must remain in keeping with the spirit of the design guidelines and appear as a harmonious element of the greater development form.

The proposed zoning designations would be consistent with the intended uses of the Specific Plan Area, including height exceptions that are part of a General Plan Amendment to adjust the view angle. For these reasons, this impact is less than significant.

3.10 Mineral Resources

Environmental Setting

Existing Conditions

The study area for mineral resources is defined as the Project Area, as shown in Figure 2-2.

Areas within the boundaries and vicinity of the city of Livermore are underlain by alluvial deposits, which contain significant reserves of sand and gravel suitable for use as aggregate in cement production. Sand and gravel mining has been a common regional operation since prior to the turn of the 20th century (Alameda County 1981; City of Livermore 2004a).

The California Geological Survey has mapped the mineral resources in much of the region. In these surveys, land is given one of four "mineral resources zone" (MRZ) designations, as defined below under the "Regulatory Setting" heading. Much of the valley floor south of I-580 is classified as an area of significant mineral resources, including areas mapped as either MRZ-2 or MRZ-3 (City of Livermore 2004a). The Specific Plan Area is mapped as MRZ-1, which means that there is little likelihood of significant mineral deposits occurring on the site. A portion of the alignment for the four-lane Jack London Boulevard Extension passes through land mapped as MRZ-2. Figure 3.10-1 shows the MRZ designations for the Project Area and the surrounding lands.

The City of Livermore General Plan incorporates the California Geological Survey map and considers the MRZ designations, specifically MRZ-2, in identifying certain "resource sectors" (sectors), or areas where mineral extraction is occurring and areas that have current land uses similar to areas where mining has occurred (City of Livermore 2004a). The Specific Plan Area is not currently utilized for mineral resource extraction and is not within one of the City's six resource sectors. However, an application for a surface mining permit (SMP) to mine the two R&J properties immediately south of the Specific Plan Area for sand and gravel was submitted to the County by R&J. Approval of this application is still pending. The alignment of the Jack London Boulevard Extension option is within a portion of these parcels, known as SMP-38 and SMP-39 in the mining permit application. The Jack London Boulevard Extension option would cross through the northeastern corner and lengthwise through the southeastern portion of the SMP-38 property, as well as along the northern boundary of the SMP-39 parcel. The R&J parcels are currently in agricultural production and are used for dry farming and equestrian boarding and other equestrian activities but are zoned OS/S&G and designated as MRZ-2.

Areas to the south of the Project Area do contain significant mineral resources and have active mining operations, though they are within the land jurisdiction of

the County. There are several quarries in current extractive operation south and southeast of the Specific Plan Area, and additional quarries are likely to be placed in operation in the future, as identified in the Draft EIR prepared for the Rhodes & Jamieson Aggregate Mines project (Douglas Herring & Associates 2004). The adjacent existing quarries, which all are owned by R&J but are leased and operated by Vulcan Materials Company (Vulcan), are utilized for gravel and sand extraction. The extraction operations typically occur between 4 a.m. and 3 p.m. Monday through Saturday, with occasional work beyond 3 p.m. when demand for resources necessitates it. Work also could occur on Sundays. Extracted materials are transported via conveyor or truck to the Vulcan processing plant, which is located approximately 1.5 miles south of the Specific Plan Area, near the intersection of Stanley Boulevard and El Charro Road. At the plant, the materials are crushed, washed, and sorted into different grades, and then they are stockpiled on the processing site and sold for use in construction. Finished materials are transported off the processing site to various regional locations, as needed, and primarily utilize I-580 for regional access. Sand and gravel also is transported from the processing site to adjacent Ready-Mix concrete and asphalt batch plants, processed, and sold for use in regional construction projects. Local extractive operations commonly utilize El Charro Road (privately owned by the quarry operators) as their primary site access and hauling route and utilize Quarry Road to connect to I-580 (City of Livermore 2004a; Douglas Herring & Associates 2004).

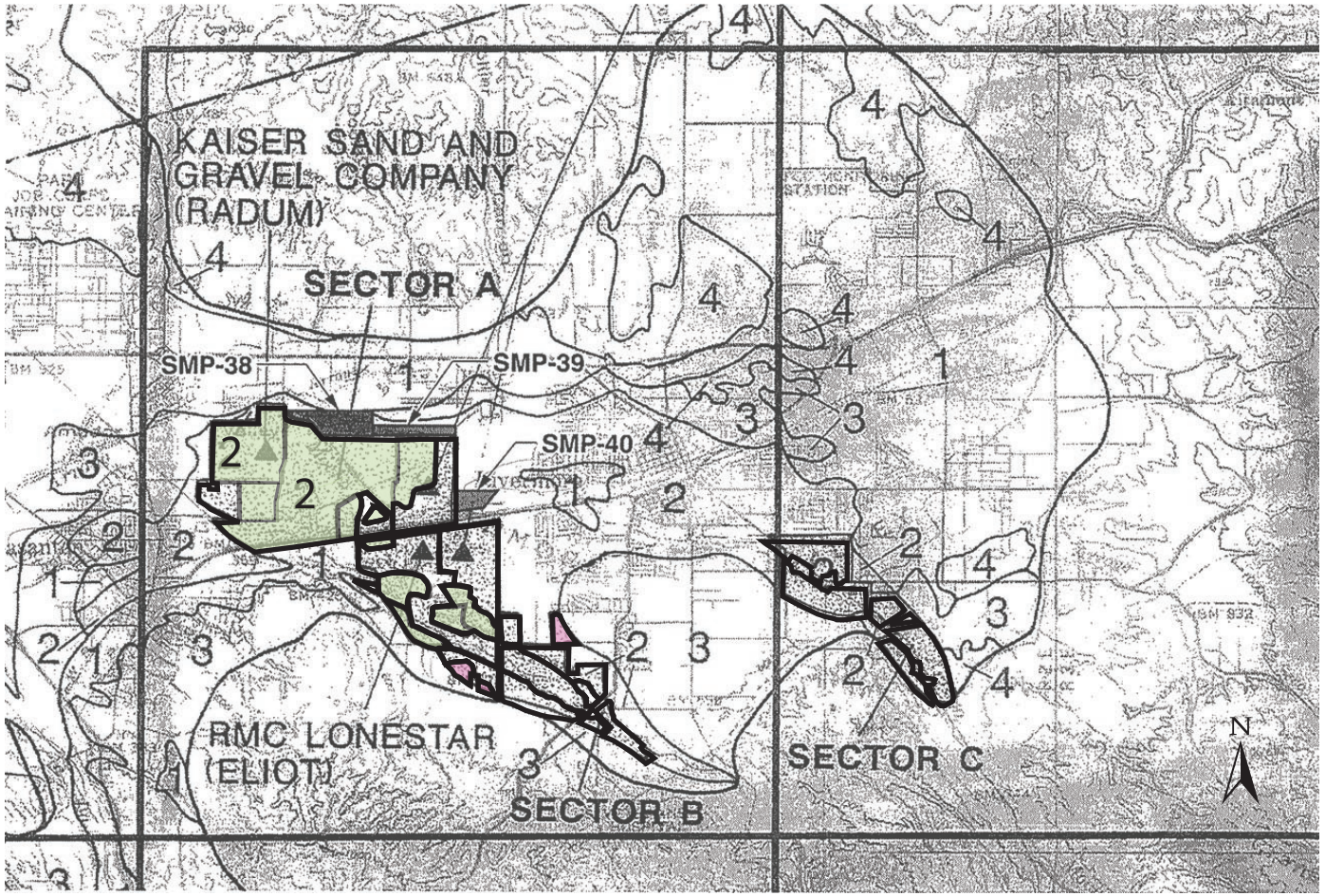
When mineral resources have been exhausted in the local quarries, the land is planned for various post-reclamation uses, as specified in the Specific Plan for Livermore-Amador Valley Quarry Reclamation (Alameda County 1981). Post-reclamation uses include water storage for Zone 7, light industrial development, right-of-way for a Jack London Boulevard Extension, and silt ponds for mining operations that may persist in the area (Alameda County 1981; Douglas Herring & Associates 2004).

Regulatory Setting

Surface Mining and Reclamation Act

SMARA was enacted for the dual purpose of identifying and mapping economically valuable mineral resources (including gold, sand, and gravel) and establishing a regulatory framework for the operation and eventual reclamation of surface mining operations. Pursuant to SMARA, the California Geological Survey has mapped the location of mineral resources throughout much of the developed portions of the state. The value of an area's mineral resources for extraction and use is indicated by one of four MRZ categories applied in this mapping. The MRZ categories are defined below:

- **MRZ-1—**Areas where adequate information indicates that no significant mineral deposits are present or where it is judged that little likelihood exists for their presence.



Legend

- SECTOR BOUNDARY
- PROPERTIES OWNED OR CONTROLLED BY AGGREGATE PRODUCERS
- DEPLETED RESOURCES
- AREAS URBANIZED OR URBANIZING

MRZ-1: Areas where adequate information indicates that no significant aggregate deposits are present, or where it is judged that little likelihood exists for their presence.

MRZ-2: Areas where adequate information indicates that significant aggregate deposits are present, or where it is judged that a high likelihood for their presence exists. Areas classified as MRZ-2 that also have existing land uses compatible with mining have been further delineated as Mineral Resource Sectors.

MRZ-3: Areas containing significant aggregate deposits, the significance of which cannot be evaluated from available data.

MRZ-4: Areas where available information is inadequate for assignment to any other MRZ.

Source: CDMG (1996) and Livermore General Plan.

project number - document

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Figure 3.10-1
Mineral Resource Zones in the Project Vicinity

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- **MRZ-2—**Areas where adequate information indicates that significant mineral deposits are present or where it is judged that a high likelihood for their presence exists.
- **MRZ-3—**Areas containing mineral deposits, the significance of which cannot be evaluated from available data.
- **MRZ-4—**Areas where available information is inadequate for assignment into any other MRZ.

Public Resources Code 2761-2762

Sections 2761 and 2762 of the PRC require that areas within the state that are subject to urban expansion or other irreversible land uses that would preclude mineral extraction be identified at 10 year intervals. The determination of these areas is based upon classifications made by the State Geologist. This information shall be transmitted to the appropriate lead agencies for incorporation into state policy and general plans.

City of Livermore General Plan

The Open Space and Conservation Element of the City of Livermore General Plan provides the following pertinent goals, objectives and policies.

> **Goal OSC-4:** Preserve and utilize mineral resources in the City and its Planning Area, while ensuring minimal adverse impact on environmental resources and surrounding uses.
>
> **Objective OSC-4.1:** Achieve a balance between the need to utilize mineral resources while minimizing negative environmental impacts of resource extraction to the greatest extent feasible.
>
> **Policy:**
>
> **P1.** When considering land use proposals the City shall take into account potentially available mineral resources on the property or in the vicinity.

Alameda County Surface Mining Ordinance

This ordinance, Chapter 6.80 of the Alameda County Code, specifies the County Grading and Permits Division's authority for monitoring local mining operations to ensure compliance with state regulations and the conditions of use granted by the board of supervisors and the planning commission. It requires County approval of a surface mining permit, reclamation plan, and financial assurances for reclamation, in accordance with SMARA, before mining operations may commence anywhere in the county. It also spells out requirements for CEQA review and public hearing of proposed mining operations, as well as annual

inspection and reporting of ongoing operations (Douglas Herring & Associates 2004).

Specific Plan for Livermore–Amador Valley Quarry Reclamation

The Project Area is located north of an extractive area subject to the Specific Plan for Livermore–Amador Valley Quarry Reclamation, which was adopted by the County in 1981 to set out a plan for the transition of local extractive areas to permanent, nonextractive uses (Alameda County 1981). This document sets out a phased plan to convert quarry areas into open water features (to be used as water storage for the Alameda County Water District [ACWD]) and other reclaimed uses. El Charro Road traverses the quarry planning area. The following policy of the reclamation plan directly relates to the proposed Project.

> **Policy:**
>
> **P15.** If El Charro Road becomes a public street, its alignment shall be coordinated with the appropriate public agencies. (Alameda County 1981.)

Impact Analysis

Thresholds of Significance

The proposed Project would have a significant impact on mineral resources if it would:

- result in the loss of availability of a known mineral resource that would be of value to the region and residents of the state or a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan; or
- result in the development of incompatible uses in and within 0.5 mile of a designated mineral resource area.

Approach and Methodology

Impacts on mineral resources are assessed based upon the determination of the presence of mineral resources and extraction operations within the Project Area.

Impacts and Mitigation Measures

Impact MIN-1: Loss of Availability of a Valuable Mineral Resource within the Specific Plan Area and Airway Boulevard Extension—No Impact

The Project Area, including the Specific Plan Area; the proposed circulation, flood control, and infrastructure improvements; and the potential golf course redesign areas are not currently utilized for mineral resource extraction, nor are they within a resource sector identified by the City of Livermore General Plan. The Specific Plan Area and the alignment for the extension of Airway Boulevard is delineated as MRZ-1, meaning that it is not underlain by significant extractable mineral resources. Development within the Specific Plan Area or construction of the Airway Boulevard Extension would not affect minerals-related objectives or policies in the General Plan and would not directly prevent or limit resource extraction from local quarries or materials processing in the nearby plants. Therefore, there would be no loss of availability of a valuable mineral resource. There would be no impact. No mitigation is required.

Impact MIN-2: Loss of Availability of a Valuable Mineral Resource within the Alignment of the Jack London Boulevard Extension Option—Less than Significant with Mitigation

A portion of the alignments for the two-lane interim and the four-lane ultimate design of the Jack London Boulevard Extension option pass through an area mapped as MRZ-2—the R&J-owned parcels south of the Specific Plan Area. As noted previously, an application for an SMP to mine these and other parcels for sand and gravel was submitted to the County by R&J. Approval of this application is still pending. If SMP-38 and -39 are mined prior to the buildout of the interim or ultimate alignments of Jack London Boulevard Extension option, then the impact regarding loss of mineral resources would be less than significant.

The interim Jack London Boulevard Extension option is proposed for an area identified for sand and gravel mining at the northeastern corner of the SMP-38 parcel, immediately west of the City-owned parcel 904-0001-007-25. As described in Chapter 2 of this EIR, if the Jack London Boulevard Extension option is selected, prior to the initiation of construction, the City would exchange portions of the City-owned parcel remnant south of the Jack London Boulevard Extension with the remnant of privately owned land north of the alignment to replace the loss of mineral-resource property. Therefore, under the interim Jack London Boulevard Extension option, loss of mineral resources would be less than significant.

However, construction of the ultimate Jack London Boulevard Extension option could preclude mining within some portions of the SMP-38 and SMP-39 properties, causing a permanent loss of the sand and gravel resource. This impact can be avoided by constructing the Airway Boulevard Extension option. However, if the Jack London Boulevard Extension option were selected, this impact would be significant. The impact of this option can be reduced to a less-than-significant level with the implementation of the following measures.

Mitigation Measure MIN-2a: Delay the Construction of a Four-Lane Extension of Jack London Boulevard

The City will delay the construction of the four-lane widening and relocation of the Jack London Boulevard Extension until cumulative traffic demand warrants its implementation. After construction of the two-lane roadway extension, the City will monitor the traffic LOS to identify the need for the widening to four lanes. This delay will allow for mining operations to occur within the mineral resource areas located within the proposed alignment area in the interim period.

Mitigation Measure MIN-2b: Accommodate Quarry Operations at the Northeast Portion of the SMP-38 Area

If the City determines, through traffic LOS studies, that the widening of Jack London Boulevard from two to four lanes is needed prior to mining operation occurring or being completed within the four-lane alignment corridor, the City will accommodate mining on the northeastern portion of the SMP-38 mining area by providing for a quarry truck underpass or other suitable means of access to the site without disrupting traffic on Jack London Boulevard.

Mitigation Measure MIN-2c: Compensate Property Owner for Loss of Mineral Resource under Roadway Footprint

If mining within the alignment of the four-lane widened roadway has not occurred prior to the need to widen the roadway, the City then will negotiate for compensation of the loss of that resource area.

Impact MIN-3: Incompatible Development within 0.5 Mile of Active Quarry Sites—Less than Significant

The Specific Plan proposes the development of commercial areas and the provision of open space in the vicinity of ongoing and future extractive uses. The entire Specific Plan Area is within 0.5 mile of operational quarries to the south that are used for gravel and sand extraction. Land in the southern portion of the Specific Plan Area would remain designated as open space with the proposed Project and would provide a buffer as wide as the City parcel between existing and future extractive operations and the commercial uses proposed as part of the Specific Plan. Elsewhere, the Las Positas Golf Course would provide a similar buffer. For further discussion of land use compatibility, see section 3.9 of this EIR.

Current quarry extraction operations would not be directly impeded by construction or operation of the Specific Plan, but the increased traffic and roadway realignment proposed as part of the Project would affect quarry-related traffic (see section 3.15 of this EIR). The City has coordinated and will continue to coordinate with Vulcan Materials Company on the environmental review for this Project, and, in particular, traffic and other land use compatibility issues. Conforming to Policy 15 of the Specific Plan for Livermore-Amador Valley Quarry Reclamation, the County will be involved in environmental review for the proposed Project (Alameda County 1981).

Proposed improvements to El Charro Road include the construction of three dedicated through lanes northbound from north of the Arroyo Las Positas approaching the new intersection with Jack London/Airway Boulevard that would be used predominantly by quarry truck traffic. Southbound, there would be two dedicated through lanes. Additional detail on traffic-related impacts and transportation-specific mitigation measures is provided in section 3.15 of this EIR. The *Assessment of Traffic Safety Impacts* conducted for the proposed Project found that, with proper design and mitigation, the proposed improvements to El Charro Road minimize the lane changing activity for the quarry trucks and provide adequate site distance for any of the potentially conflicting travel movements along El Charro Road between the quarry traffic and the other vehicular traffic generated by the proposed Project. The traffic safety study also found that with proper design and mitigation, the volume of trucks would not adversely affect traffic safety for the new intersection of El Charro Road and Jack London/Airway Boulevard (DKS Associates 2006). See section 3.15, "Transportation and Traffice," for a more extensive discussion of this issue.

The proposed Project, including the El Charro Road design that accommodates quarry truck traffic, is not considered incompatible with the active quarry sites, and the effects of the Project are considered less than significant. No mitigation is required.

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3.11 Noise

This chapter addresses noise impacts associated with the construction and added vehicle traffic associated with implementation of the proposed Project in the City of Livermore. This study includes a discussion of existing conditions; a summary of local general plan policies and regulations related to noise issues; and an analysis of direct, indirect, and cumulative environmental impacts of the Project. Where feasible, mitigation measures are recommended to reduce the level of significant impacts.

The key sources of data and information used in the preparation of this section are listed below:

- City of Livermore Municipal Code, Title 9, Chapter 36 of the City Code. (City of Livermore 1997).
- City of Livermore General Plan Noise Element (City of Livermore 2004a).
- Dowling Associates. Traffic Study—El Charro Specific Plan (Dowling Associates 2006).

The following are brief definitions of acoustical terms used in this discussion:

- *Sound*—A vibratory disturbance created by a vibrating object that, when transmitted by pressure waves through a medium such as air, is capable of being detected by a receiving mechanism such as the human ear or a microphone.
- *Noise*—Sound that is loud, unpleasant, unexpected, or otherwise undesirable.
- *Ambient noise*—The composite of noise from all sources near and far in a given environment, exclusive of particular noise sources to be measured.
- *Decibel (dB)*—A unitless measure of sound on a logarithmic scale that indicates the squared ratio of sound pressure amplitude to a reference sound pressure amplitude. The reference pressure is 20 micropascals.
- *A-Weighted Decibel (dBA)*—An overall frequency-weighted sound level in decibels that approximates the frequency response of the human ear. Typical A-weighted noise levels for various types of noise sources are shown in Table 3.11-1.
- *Equivalent Sound Level (L_{eq}).* L_{eq} represents an average of the sound energy occurring over a specified period. In effect, L_{eq} is the steady-state sound level containing the same acoustical energy as the time-varying sound that actually occurs during the same period.
- *Exceedance Sound Level (L_{xx}).* The sound level exceeded XX% of the time during a sound level measurement period. For example L_{50} is the sound level exceed 50% of the time and L_{90} is the sound level exceeded 90% of the time.

Table 3.11-1. Typical A-Weighted Sound Levels

Sound Source	Sound Level (dBA)	Typical Response
Carrier deck jet operation	140	Painfully loud
Limit of amplified speech	130	
Jet takeoff (200 feet) Auto horn (3 feet)	120	Threshold of feeling and pain
Riveting machine Jet takeoff (2,000 feet)	110	Very annoying
Shout (0.5 foot) New York subway station	100	
Heavy truck (50 feet) Pneumatic drill (50 feet)	90	Hearing damage (8-hour exposure)
Passenger train (100 feet) Helicopter (in flight, 500 feet) Freight train (50 feet)	80	Annoying
Freeway traffic (50 feet)	70	Intrusive
Air conditioning unit (20 feet) Light auto traffic (50 feet)	60	
Normal speech (15 feet)	50	Quiet
Living room Bedroom Library	40	
Soft whisper (15 feet)	30	Very quiet
Broadcasting studio	20	
	10	Just audible
	0	Threshold of hearing

- *Day-Night Level (L_{dn})*—The energy average of the A-weighted sound levels occurring during a 24-hour period, with 10 dB added to the A-weighted sound levels occurring during the period from 10 p.m. to 7 a.m.
- *Community Noise Equivalent Level (CNEL)*—The energy average of the A-weighted sound levels occurring during a 24-hour period with 5 dB added to the A-weighted sound levels occurring during the period from 7 p.m. to 10 p.m. and 10 dB added to the A-weighted sound levels occurring during the period from 10 p.m. to 7 a.m.

L_{dn} and CNEL values rarely differ by more than 1 dB. As a matter of practice, L_{dn} and CNEL values are considered to be equivalent and are treated as such in this assessment.

A doubling of acoustical energy from a noise source results in a 3-dB increase in sound. However, given a sound level change measured with precise instrumentation, the subjective human perception of a doubling of loudness usually will be different from what is measured.

Under controlled conditions in an acoustical laboratory, the trained, healthy human ear is able to discern 1-dB changes in sound levels, when exposed to steady, single-frequency ("pure-tone") signals in the mid-frequency (1,000–8,000 hertz) range. However, it is widely accepted that people are able to begin to detect sound level changes of 3 dB for typical noisy environments. Further, a 10-dB increase is generally perceived as a doubling of loudness. Therefore, doubling sound energy (e.g., doubling the volume of traffic on a highway) generally would be perceived as a detectable, but not substantial, increase in sound level.

Environmental Setting

Existing Conditions

Sensitive Land Uses and Sensitive Receptors

Noise-sensitive land uses generally are defined as locations where people reside or where the presence of unwanted sound could adversely affect the use of the land. Noise-sensitive land uses typically include residences, hospitals, schools, guest lodging, libraries, and certain types of recreational uses. Noise-sensitive receptors are people on this land.

The Specific Plan Area contains a small rural farm complex that includes residences (the Children's Hospital site) and a ranch that likely would remain until an application for construction of that property is proposed. Immediately east of the Specific Plan Area is the Las Positas Golf Course. Residential and commercial uses are located between 0.75 mile and 1.0 mile to the northwest of the Specific Plan Area in Pleasanton on the south side of I-580. Residential uses are also located approximately 0.5 mile to the southeast of the Specific Plan Area east of the intersection of Jack London Boulevard and Isabel Avenue. Agricultural uses are located immediately south of the Specific Plan Area, and scattered rural residential uses are located within 500 feet south of the Specific Plan Area.

Existing Noise Environment

The Project Area is located in a primarily open space and agricultural area within the city. The major existing sources of noise in the Project Area are traffic on freeways, arterial roadways, and local roads; the municipal airport; and general industry, quarry, and agricultural operations. The primary source of traffic noise

in the Project Area is I-580, which runs along the northern boundary of the Specific Plan Area.

The City's General Plan (City of Livermore 2004a) contains the results of ambient noise monitoring within the city. The monitoring results indicate that typical noise levels in noise-sensitive areas of the county are in the range of 50–65 dBA L_{dn}. In general, the areas of the city that contain noise-sensitive land use are relatively quiet except near major roadways, railroad tracks, and industrial areas.

Noise Monitoring

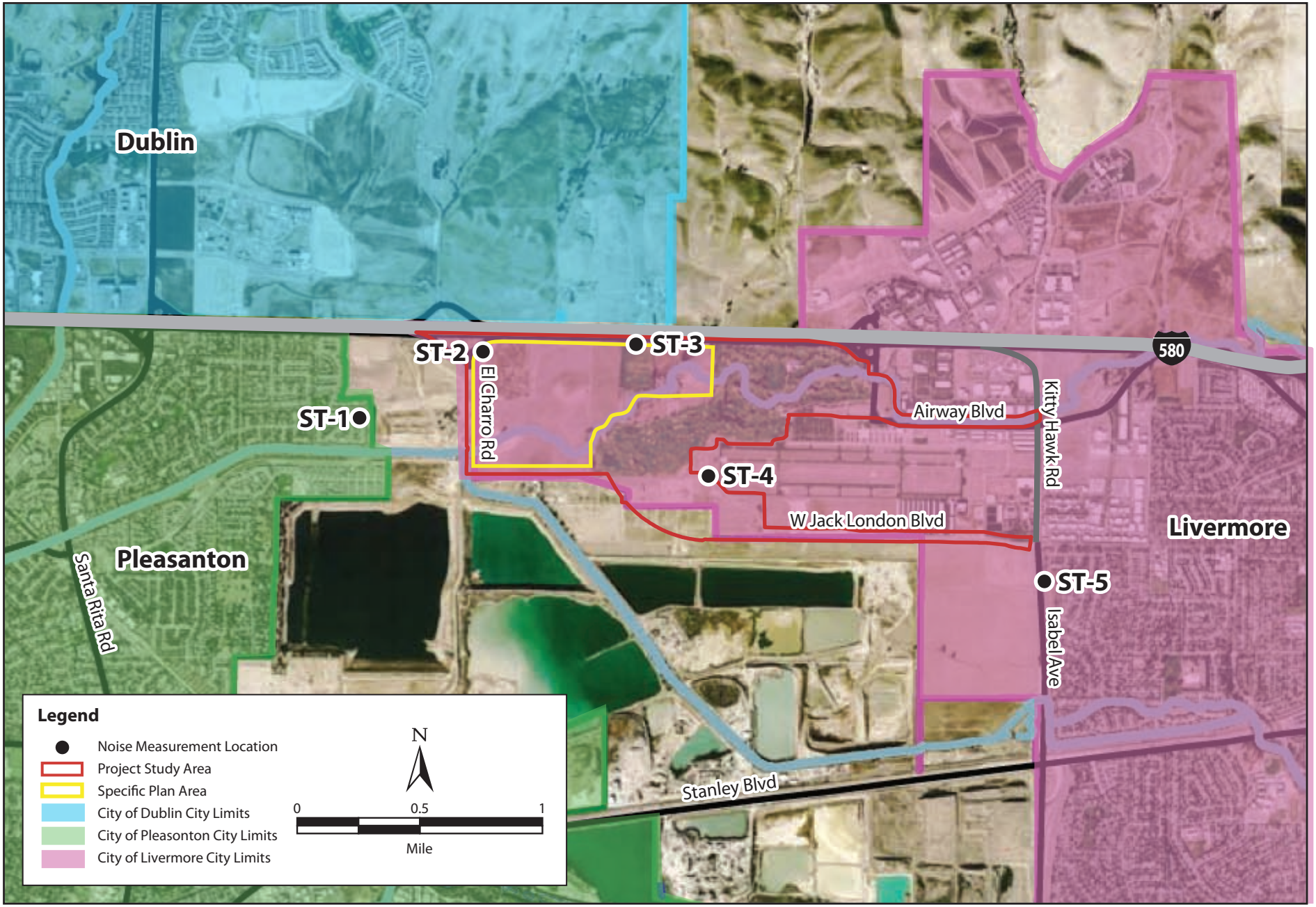
In order to characterize the existing noise environment, short-term measurements of 10–20 minutes in duration were conducted at various locations in the Project Area. Jones & Stokes selected the noise monitoring sites. Sites were selected to document existing ambient noise levels at representative locations in the Project Area where noise-sensitive land uses are currently located and at locations where future development is approved.

Short-term monitoring was conducted on Wednesday, November 8, 2006, using a Larson Davis Model 812 Type 1 precision sound level meter (serial number 0239). The meter was positioned on a tripod at a microphone height of 1.5 meters (5 feet) above the ground. Sound levels and audible noise sources were recorded on field data sheets in order to characterize the noise environment at each position. The short-term measurement positions are the positions indicated as ST-1 through ST-5 in Figure 3.11-1.

Measurements were conducted at five locations within the Project Area. Noise sources observed during the measurement periods included highway noise on I-580, local traffic noise, aircraft operations at Livermore Municipal Airport, and agricultural equipment noise. Measured L_{eq} noise levels for the measurement periods at each site ranged from 50.3 dBA at the end of Staples Ranch Road to 74.2 dBA on Freisman Road near I-580. Temperature and wind speed were recorded manually during monitoring from data obtained by a Kestrel 3000 portable weather station. During the short-term measurement session, skies were sunny. Wind speeds were typically in the range of 4–8 mph. Temperatures were in the range of 68–72°F.

For each measurement site, two sound levels are reported: the first is an average L_{eq} including all noise sources observed during the measurement period. The second sound level (traffic sources) is the average L_{eq} where traffic was the dominant noise source observed to contribute to sound levels at the monitoring position. This sound level was calculated by excluding 1-minute intervals where nontraffic noise sources (such as aircraft) were dominant.

The information gathered during the short-term monitoring is summarized in Table 3.11-2. At sites ST-2, ST-3, and ST-5, the noise level from all sources is less than 1 dB greater than the sound level from traffic sources only; thus, traffic



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Figure 3.11-1
Noise Measurement Locations

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was the dominant contributor at these measurement sites. At site ST-1, aircraft and wood processing equipment contributed significantly to the background noise level. At site ST-4, aircraft takeoffs and flyovers during noise monitoring resulted in average noise levels 6.9 dB higher than the average noise levels where traffic and agricultural equipment were the dominant noise sources.

Table 3.11-2. Summary of Short-Term Sound Level Measurements in the Specific Plan Area, November 8, 2006

Monitor Site	Monitor Location	Measurement Start Time	Duration of Measurement (Minutes)	Measured Sound Level, dBA L_{eq}, All Noise Sources	Measured Sound Level, dBA L_{eq}, Traffic Sources	Noise Sources Observed
ST-1	End of Staples Ranch Road	10:44	20	50.3	47.4	Wood chipper, small aircraft overflights, and traffic on I-580
ST-2	Freisman Road at El Charro Road (about 300 feet from I-580)	12:14	10	67.8	67.8	Traffic on I-580
ST-3	Freisman Road, near Las Positas Golf Course (about 100 feet from I-580)	13:02	10	74.2	74.2	Traffic on I-580
ST-4	Horse stable, near end of airport runway	13:54	20	60.9	54.0	Small aircraft, helicopters, tractors, agricultural equipment, and local traffic
ST-5	End of Logan Street at Trinity Circle	14:47	20	53.7	53.4	Traffic on Isabel Avenue and SR 84, and aircraft

Traffic Noise Modeling

Existing traffic noise levels were calculated using the FHWA Traffic Noise Model Version 2.5 (TNM) and existing traffic volumes provided by the project traffic engineers, Dowling Associates (Dowling Associates 2006) Table 3.11-3 summarizes the traffic noise modeling results based on existing traffic conditions. As shown in the table, areas adjacent to I-580, Dublin Boulevard,

and Isabel Avenue currently exceed the City's noise compatibility standard of 60 dBA L_{dn} at residential locations.

Table 3.11-3. Traffic Noise Modeling Results—2008 Baseline (Existing Conditions)

Roadway	Segment	Existing Land Use Description	2008 Baseline L_{dn} 100 Feet
Dublin Boulevard	Hacienda Drive to Tassajara Road	Existing subdivision	61
Airway Boulevard	Extension to Isabel Avenue (future)	Existing commercial site	61
Isabel Avenue	Airway Boulevard to West Jack London Boulevard	Existing subdivision	62
West Jack London Boulevard	Isabel Avenue to North Murrieta Boulevard	Existing subdivision	59
Isabel Avenue	West Jack London Boulevard to E Stanley Boulevard	Existing subdivision	62
Stoneridge Drive	Kamp Drive to El Charro Road	Existing subdivision	50
I-580[1]	near Hacienda Drive	Existing/planned subdivision	77
I-580[1]	near North Murrieta Blvd	Existing/planned subdivision	77
El Charro Road	I-580 westbound ramp to north of West Jack London Road	Specific Plan— Prime Outlets Livermore Valley	58
El Charro Road	North of West Jack London Boulevard	Specific Plan—Commercial	57
El Charro Road	South of West Jack London Boulevard	Specific Plan—Commercial	56
Freisman Road[1]		Open space, residential	73

Note:

[1] Noise level taken from noise monitoring data, converted to L_{dn}.

Regulatory Setting

Local Regulations

Alameda County

County of Alameda General Plan Policies

The County general plan, as adopted on May 5, 1994, and updated in May 2002, does not explicitly establish noise level performance standards and does not specify noise compatibility guidelines.

Alameda County Noise Code

Alameda County's Noise Code establishes noise standards for areas within the county (Tables 3.11-4 and 3.11-5). Construction activities that occur between the hours of 7 a.m. and 7 p.m. Monday through Friday, and between 8 a.m. and 5 p.m. Saturday and Sunday, are exempt from the County's noise ordinance.

Table 3.11-4. Alameda County Code Exterior Noise Level Standards[a]

Category	Cumulative Number of Minutes Allowable in Any 1-Hour Time Period	Daytime Limit (dBA) (7 a.m.–10 p.m.)	Nighttime Limit (dBA) (10 p.m.–7 a.m.)
1	30	50	45
2	15	55	50
3	5	60	55
4	1	65	60
5	0	70	65

Note:

[a] For residential, school, hospital, church, or public library land uses.

Table 3.11-5. Alameda County Code Exterior Noise Level Standards for Commercial Properties

Category	Cumulative Number of Minutes Allowable in Any 1-Hour Time Period	Daytime Limit (dBA) (7 a.m.–10 p.m.)	Nighttime Limit (dBA) (10 p.m.–7 a.m.)
1	30	65	60
2	15	70	65
3	5	75	70
4	1	80	75
5	0	80	80

City of Livermore

General Plan Noise Element

The purpose of the City's General Plan Noise Element is to identify and appraise noise generation in the community in order to minimize problems from intrusive sound and to ensure that new development does not expose people to unacceptable noise levels.

Within the Noise Element, the City establishes land use compatibility guidelines for community noise environments. These standards are summarized below in Table 3.11-6.

Table 3.11-6. General Plan Noise Element Land Use Compatibility Guidelines for Exterior Noise (dBA CNEL/L_{dn})

Land Use	Normally Acceptable[1]	Conditionally Acceptable[1]	Normally Unacceptable[1]	Clearly Unacceptable[1]
Residential—low density, single-family, duplex, and mobile homes	≤60	55-70	70-75	>75
Residential—multifamily	≤65	60-70	70-75	>75
Transient lodging, hotels, and motels	≤65	60-70	70-80	>80
Schools, libraries, churches, hospitals, and nursing homes	≤70	60-70	70-80	>80
Auditoriums, concert halls, and amphitheaters	–	<70	–	>65
Sports arenas and outdoor spectator sports	–	<75	–	>70
Playgrounds and neighborhood parks	≤70	–	70-75	>75
Golf courses, water recreation, and cemeteries	≤75	–	70-80	>80
Office buildings and business commercial, professional, and retail uses	≤70	70-75	>75	–
Industrial, manufacturing, utilities, and agricultural uses	≤75	70-80	>75	–

Note:

[1] Where dBA levels overlap between these categories, determination of noise level acceptability will be made on a project-by-project basis. dBA is measured in CNEL or L_{dn}.

Source: City of Livermore 2004a.

Relevant General Plan noise policies and objectives are provided below.

Objective N-1.1: Establish appropriate noise levels, design standards, and noise reduction techniques for all areas to minimize the adverse effects of noise.

Policies:

P1. The City shall emphasize noise considerations when making land use planning decisions.

P2. Noise analysis shall be measured in dBA CNEL or dBA L_{dn} as defined in this Element.

P3. The City shall maintain a pattern of land uses that separates noise-sensitive land uses from major noise sources to the extent possible.

P4. The City shall use the Land Use Compatibility Guidelines for Exterior Noise (measured in dBA CNEL or L_{dn}) contained in Table 9-7 [refer to Table 3.11-6 in this chapter] in this Element to direct the siting, design, and insulation of new development to reduce exposure to excessive noise. Where warranted, the City shall employ discretionary review of new development to ensure that the community will be protected from excessive noise levels. The City shall evaluate potential noise impacts and recommend mitigation measures through discretionary review procedures such as environmental review, design review, and evaluation of use permits.

P5. Review development proposals with respect to the Land Use Compatibility Guidelines for Exterior Noise in Table 9-7 [refer to Table 3.11-6 in this chapter] as follows: (a) Normally Acceptable: If the noise level is within the "normally acceptable" level, noise exposure would be acceptable for the intended land use. Development may occur without requiring an evaluation of the noise environment unless the use could generate noise impacts on adjacent uses. (b) Conditionally Acceptable: If the noise level is within the "conditionally acceptable" level, noise exposure would be conditionally acceptable; a specified land use may be permitted only after detailed analysis of the noise environment and the project characteristics to determine whether noise insulation or protection features are required. Such noise insulation features may include measures to protect noise-sensitive outdoor activity areas (e.g., at residences, schools, or parks) or may include building sound insulation treatments such as sound-rated windows to protect interior spaces in sensitive receptors. (c) Normally Unacceptable: If the noise level is within the "normally unacceptable" level, analysis and mitigation are required. Development should generally not be undertaken unless adequate noise mitigation options have been analyzed and appropriate mitigations incorporated into the project to reduce the exposure of people to unacceptable noise levels. (d) Clearly Unacceptable: If the noise level is within the "clearly unacceptable" level, new construction or development should not be undertaken unless all feasible noise mitigation options have been analyzed and appropriate mitigations incorporated into the project to adequately reduce exposure of people to unacceptable noise levels.

P7. The City shall work with LARPD to locate new neighborhood parks such that the existing and anticipated future noise environment is conducive to passive and active outdoor recreational activities, whenever possible.

Objective N-1.2: Adopt design standards and identify effective noise attenuation programs to prevent noise or reduce noise to acceptable levels.

Policies:

P1. When crafting mitigation programs for adverse noise exposure from new development, the City shall encourage the use of noise attenuation programs that avoid constructing sound walls.

P2. The City shall require applicants for new noise-sensitive development, such as private schools, residences, and private hospitals, in areas subject to noise levels greater than 65 dBA CNEL to obtain the services of a professional acoustical engineer to provide a technical analysis and to design mitigation measures to attenuate noise to acceptable levels.

P3. The City shall require the control of noise at the source for new development deemed to be noise generators through site design, building design, landscaping, hours of operation, and other techniques.

P4. The City shall require operational limitations and feasible noise buffering for new uses that generate significant noise impacts near sensitive uses.

P5. During all phases of construction, the City shall take measures to minimize the exposure of neighboring properties to excessive noise levels from construction-related activity.

P6. The City shall require mitigation measures to minimize noise impacts on surrounding areas as part of the permit review process for land uses of a temporary nature, such as fairs or exhibits. The noise level from the temporary use should be in conformance with the noise level guidelines for nearby land uses.

P7. The City shall seek to reduce impacts from ground borne vibrations associated with rail operations by requiring that habitable buildings are sited at least 100-feet from the centerline of the tracks, whenever feasible. An interior noise level of up to 45 dBA, with windows closed, must not be exceeded.

P8. It shall be the responsibility of new development or new land uses to be consistent with noise standards appropriate and sensitive to adjacent land uses.

Objective N-1.3: Increase public awareness of the negative effects of noise through public education and the enforcement of existing noise control measures.

Objective N-1.4: Reduce noise levels from traffic, which is the single largest continual source of unacceptable noise in the City.

Polices:

P1. The City shall support federal and State legislation to attain lower operating noise levels on motor vehicles.

P2. The City shall minimize potential transportation noise through proper design of street circulation, coordination of routing, and other traffic control measures.

P3. The City shall provide planned industrial areas with truck access routes separated from residential areas to the maximum feasible extent. Consider methods to restrict truck travel times in sensitive areas.

P4. The City shall require exterior noise in backyards to be Normally Acceptable at a maximum of 60 dBA CNEL for single-family development and a maximum of 65 dBA CNEL for multi-family development.

P5. The City will consider sound walls as a means of noise mitigation along proposed and existing roadway segments and railroad right-of-ways only after other noise attenuation programs such as building construction, larger landscaped berms, and distances have been considered to reduce noise to appropriate levels in residential areas.

Objective N-1.5. Reduce the level of noise generated by mechanical and other noise generating equipment by means of public education, regulation, and/or political action.

Policies:

P1. The City shall require that industrial and commercial uses be designed and operated so as to avoid the generation of noise effects on surrounding sensitive land uses (e.g., residential, churches, schools, hospitals) from exceeding the following noise levels for exterior environments: (a) 55 dBA L_{50} (7:00 a.m. to 10:00 p.m.) (b) 45 dBA L_{50} (10:00 p.m. to 7:00 a.m.).

P2. In order to allow for temporary construction, demolition or maintenance noise and other necessary short-term noise events, the stationary source noise standards in Policy N-1.5.P1, above, may be exceeded within the receiving land use by: (a) 5 dBA for a cumulative period of no more than fifteen (15) minutes in any hour. (b) 10 dBA for a cumulative period of no more than five (5) minutes in any hour. (c) 15 dBA for a cumulative period of no more than one (1) minute in any hour.

P3. In order to allow for temporary construction, demolition or maintenance noise and other necessary short-term noise events, the stationary noise standards in Policy N-1.5.P1, above, shall not be exceeded within the receiving land use by more than 15 dBA for any period of time.

P4. The following sources of noise are exempt from the standard in N-1.5.P1: motor vehicles on public streets; trains; emergency equipment, vehicles, devices, and activities; temporary construction, maintenance, or demolition activities conducted between the hours of 7:00 a.m. and 8:00 p.m. [City of Livermore 2004a].

City of Livermore Municipal Code

The City's noise ordinance does not explicitly establish maximum noise levels, nor does it limit noise from construction activities. Rather, the ordinance

prohibits "any loud, disturbing, unnecessary, unusual or habitual noise, or any noise which annoys, disturbs, injures or endangers the comfort, health, repose, peace or safety of other persons within the city" (Section 9.36.020). The operation of blowers, fans, and internal combustion engines is prohibited, unless the noise is muffled and the device is equipped with a muffler to muffle the noise so that it is not "plainly audible" either at a distance of 75 feet from the source of the noise, or between the hours of 6 p.m. Saturday to 7 a.m. Monday; 8 p.m. to 7 a.m. Monday, Tuesday, Wednesday, and Thursday; 8 p.m. Friday to 9 a.m. Saturday; or anytime on City-observed holidays. The operation of steam engines, stationary internal-combustion engines, motorboats, and other motor vehicles is prohibited, unless equipped with a muffler or other device that will render noise inaudible either at a distance of 75 feet from the source, or at the property line, whichever is greater. The operation of pile drivers, pneumatic tools, derricks, electric hoists, sandblasters or other equipment used in construction, demolition, or other repair work is prohibited between the hours of 6 p.m. Saturday and 7 a.m. Monday; 8 p.m. and 7 a.m. Monday through Thursday; 8 p.m. Friday and 9 a.m. Saturday; and anytime on City-observed holidays. However, specific construction activities can be exempted from the ordinance in the conditions of approval for a project at the time of its public hearing.

Other Relevant Criteria

Vibration Guidelines

Dynamic construction equipment such as a pile driver can create seismic waves that radiate along the surface of the earth and downward into the earth. These surface waves can be felt as ground vibration. Ground vibration can result in effects ranging from the annoyance of people to the damage of structures. Varying geology and distance will result in different vibration levels containing different frequencies and displacements. In all cases, vibration amplitudes will decrease with increasing distance from the vibration source.

As seismic waves travel outward from a source, they excite the particles of rock and soil through which they pass and cause them to oscillate. The actual distance that these particles move is usually only a few ten-thousandths to a few thousandths of an inch. The rate or velocity (in inches per second) at which these particles move is the commonly accepted descriptor of the vibration amplitude, referred to as the peak particle velocity (ppv).

Neither the City nor the County has adopted standards relating to groundborne vibration. The potential for annoyance and physical damage to buildings from vibration are the primary issues associated with groundborne vibration. Table 3.11-7 shows the human response to continuous groundborne vibration reported in Whiffen and Leonard 1971.

Table 3.11-7. Human Response to Continuous Vibration from Traffic

PPV (inches/second)	Human Response
0.4–0.6	Unpleasant
0.2	Annoying
0.1	Begins to annoy
0.08	Readily perceptible
0.006–0.019	Threshold of perception

Source: Whiffen and Leonard 1971.

Table 3.11-8 shows damage potential thresholds for vibration generated by construction activities (American Association of State Highway and Transportation Officials [AASHTO] 1990).

Table 3.11-8. AASHTO Maximum Vibration Levels for Preventing Damage

Type of Situation	Limiting Velocity (PPV in inches/second)
Historic sites or other critical locations	0.1
Residential buildings, plastered walls	0.2 to 0.3
Residential buildings in good repair with gypsum board walls	0.4 to 0.5
Engineered structures, without plaster	1 to 1.5

Source: AASHTO 1990.

Impact Analysis

Approach and Methodology

This section analyzes the Project impacts on existing conditions and receptors in the year 2008 with the Prime Outlets Livermore Valley project and full buildout. Cumulative buildout with project conditions in 2030 is analyzed in Chapter 4, "Cumulative Impacts."

Construction Impacts

Evaluation of construction noise impacts associated with the proposed Project is based on methodology developed by the Federal Transit Administration (FTA) (Federal Transit Administration 2006).

Construction noise levels are commonly described on the basis of average noise levels during operation, such as L_{eq} or L_{50}, rather than day-night metrics, such as L_{dn} or CNEL. Consequently, L_{50} is used in this analysis, and County noise standards are used to determine the significance of construction noise impacts.

Aircraft Impacts on the Specific Plan Area

The evaluation of aircraft noise from operations at Livermore Municipal Airport is based on noise contours presented in the General Plan. Existing case noise contours are used for the 2008 case.

Operational Impacts

CEQA requires the significance of noise impacts to be determined for proposed projects. The process of assessing the significance of noise impacts associated with a proposed project starts by establishing thresholds at which significant impacts are considered to occur. Next, noise levels associated with project-related activities are predicted and compared with the significance thresholds. A significant impact is considered to occur when a predicted noise level exceeds a threshold.

Noise from traffic on roadways in the Project Area has been evaluated under the conditions listed below.

- 2008 baseline versus 2008 baseline plus plus Prime Outlets Livermore Valley project and partial buildout of the Jack London/Airway Boulevard Extension option.
- 2008 baseline versus 2008 baseline plus full project buildout and the Jack London Boulevard Extension option.
- 2008 baseline versus 2008 baseline plus full project buildout and the Airway Boulevard Extension option.

These conditions are further described in section 3.15, "Transportation and Traffic." The FHWA TNM noise model was used for calculating future traffic noise levels, using traffic information provided by Dowling Associates (2006). Noise levels were calculated along roadway segments potentially affected by the Project and at specific prediction locations that would be directly affected by traffic noise along existing and future roadway alignments.

Thresholds of Significance

Construction

The proposed Project would have a significant impact on the noise-sensitive receivers if it would result in the following.

- Noise-generating construction activity that would occur between the hours of 6 p.m. Saturday and 7 a.m. Monday; 8 p.m. and 7 a.m. Monday, Tuesday, Wednesday, and Thursday; 8 p.m. Friday and 9 a.m. Saturday; or at all on City-observed holidays and that would exceed the following levels for sensitive land uses (e.g., residential uses, churches, schools, and hospitals): 55 dBA L_{50} (7 a.m. to 10 p.m.) or 45 dBA L_{50} (10 p.m. to 7 a.m.). These noise standards may be exceeded within the receiving land use by: (a) 5 dBA for a cumulative period of no more than 15 minutes in any hour; (b) 10 dBA for a cumulative period of no more than five (5) minutes in any hour; and (c) 15 dBA for a cumulative period of no more than one (1) minute in any hour (per General Plan Policy N1.5-P1).
- Ground vibration that is predicted to exceed 0.2 inches/second ppv at residences.

Operations

Operations of the proposed Project would have a significant impact on the noise-sensitive receivers if any of the following occurs.

- New proposed land uses would be exposed to traffic or aircraft noise in excess of City land use compatibility standards identified in the General Plan Noise Element (refer to Table 3.11-6).
- Existing land uses in the project vicinity would be exposed to traffic noise in excess of City land use compatibility standards identified in the General Plan Noise Element (refer to Table 3.11-6) *and* an increase in noise of more than 3 dB at those land uses, relative to no-project conditions.
- Noise generated from commercial uses exceeds the following levels for sensitive land uses (e.g., residential uses, churches, schools, and hospitals): 55 dBA L_{50} (7 a.m. to 10 p.m.) and 45 dBA L_{50} (10 p.m. to 7 a.m.). These noise standards may be exceeded within the receiving land use by: (a) 5 dBA for a cumulative period of no more than 15 minutes in any hour, (b) 10 dBA for a cumulative period of no more than five (5) minutes in any hour, and (c) 15 dBA for a cumulative period of no more than one (1) minute in any hour (per General Plan Policy N1.5-P1).
- Ground vibration is predicted to exceed 0.2 in/sec PPV at residences.

Impacts and Mitigation Measures

Impact N-1: Exposure of Noise-Sensitive Land Uses to Vibration and Noise During Construction Activities—Less than Significant with Mitigation

Vibration

The use of heavy equipment during construction activities may be a source of groundborne vibration. With the exception of pile driving activities and other

highly dynamic equipment such as pavement breakers, the operation of typical heavy construction equipment does not result in substantial groundborne vibration. For example, a large bulldozer typically produces a peak particle velocity vibration level of 0.09 inch per second at 25 feet (Federal Transit Administration 2006), which is well below the 0.2 inch per second significance threshold. The use of high-impact construction activities such as pile driving is not anticipated. Exposure to noise-sensitive land uses to vibration from construction is therefore considered to be less-than-significant.

Noise

Construction of the proposed Project would temporarily increase noise levels at noise-sensitive locations in the vicinity of the Project Area. Noise increases would result both from on-site construction activities, especially during site preparation, grading, and other earth-moving activities, as well as from construction-related vehicle traffic delivering materials to and from the construction site.

A detailed inventory of construction equipment that would be used for the proposed Project was not available; therefore, this analysis estimates project-related construction noise assuming that typical construction equipment would be used during construction activities. Table 3.11-9 presents a list of noise generation levels for these typical equipment types (Federal Transit Administration 2006). To determine a combined-source noise level, a reasonable worst-case assumption is that the three loudest pieces of equipment (i.e., bulldozer, scraper, and truck) would operate simultaneously and continuously over at least a one-hour period.

Table 3.11-9. Construction Equipment Noise Emission Levels

Equipment	Typical Noise Level 50 Feet from Source (dBA)
Air Compressor	81
Backhoe	80
Concrete Mixer	85
Concrete Pump	82
Concrete Vibrator	76
Bulldozer	85
Excavator/Shovel	82
Generator	81
Grader	85
Loader	85
Scraper	89
Truck	88

Source: Federal Transit Administration 2006.

Based on the noise levels summarized in Table 3.11-9, Table 3.11-10 presents estimated construction sound levels as a function of distance. Simultaneous operation of a bulldozer, scraper, and truck, for a combined-source noise level of 92 dBA at 50 feet, is assumed. "Soft" site attenuation was assumed. The magnitude of construction noise impacts was assumed to depend on the type of construction activity, the noise level generated by various pieces of construction equipment, and the distance between the activity and noise-sensitive land uses.

Table 3.11-10. Estimated Construction Noise in the Vicinity of an Active Construction Site

Construction Condition: Site Leveling	
Source 1: Bulldozer—Sound Level (dBA) at 50 Feet =	85
Source 2: Truck—Sound Level (dBA) at 50 Feet =	88
Source 3: Scraper—Sound Level (dBA) at 50 Feet =	89
Average Height of Sources (Hs) (feet) =	10
Average Height of Receiver (Hr) (feet) =	5
Ground Type (Soft or Hard) =	Soft
All Sources Combined—Sound Level (dBA) at 50 Feet =	92

Distance Between Source and Receiver (Feet)	Geometric Attenuation (dB)	Ground Effect Attenuation (dB)	Calculated Sound Level (dBA)
50	0	0	92
100	-6	-2	85
200	-12	-4	77
300	-16	-5	72
400	-18	-6	69
500	-20	-6	66
600	-22	-7	64
700	-23	-7	62
800	-24	-7	61
1,000	-26	-8	58
1,200	-28	-9	56
1,400	-29	-9	55
1,600	-30	-9	53
1,800	-31	-10	52
2,000	-32	-10	50
2,500	-34	-10	48
3,000	-36	-11	46

Notes:

Calculations based on FTA 2006.

These calculations do not include the effects, if any, of local shielding that may reduce sound levels further.

The results in Table 3.11-10 indicate that noise from construction activities has the potential to exceed the daytime noise standard of 50 dBA within a distance of about 2,500 feet from the noise source and the nighttime noise standard of 45

dBA within about 3,000 feet of the noise source. Construction noise that occurs outside the exempt daytime hours is therefore considered significant. Implementation of the following mitigation measures would reduce this impact to a less-than-significant level.

Mitigation Measure N-1a: Limit Hours of Construction
Construction activities that cause noise levels to exceed City standards will be prohibited between the hours of 6 p.m. Saturday and 7 a.m. Monday, 8 p.m. and 7 a.m. Monday through Thursday, 8 p.m. Friday and 9 a.m. Saturday, or anytime on City-observed holidays.

Mitigation Measure N-1b: Employ Noise-Reducing Construction Practices
The construction contractor will employ noise-reducing construction practices such that City noise ordinance standards are not exceeded. Measures that will be used to limit noise include:

- locating equipment as far as practical from noise-sensitive uses,
- not using equipment that is louder than standard equipment,
- selecting haul routes that affect the fewest number of people,
- using noise-reducing enclosures around noise-generating equipment, and
- constructing barriers between noise sources and noise-sensitive land uses or taking advantage of existing barrier features (terrain and structures) to block sound transmission.

In the event that the construction engineer is unable to mitigate construction-related noise to the levels above, the construction contractor will cease construction activities and employ additional mitigation measures sufficient to meet the noise levels above or offer to temporarily relocate residents (i.e., by providing hotel vouchers).

Mitigation Measure N-1c: Prepare a Noise Control Plan
The construction contractor will prepare a detailed noise control plan based on the construction methods proposed. This plan will identify specific measures that will be taken to ensure compliance with the noise limits specified above. The noise control plan will be reviewed and approved by City staff before any noise-generating construction activity begins.

Mitigation Measure N-1d: Disseminate Essential Information to Residences and Implement a Complaint/Response-Tracking Program
The construction contractor will notify residences within 300 feet of the construction areas of the construction schedule in writing, prior to construction. The construction contractor will designate a noise disturbance coordinator who will be responsible for responding to

complaints regarding construction noise. The coordinator will determine the cause of the complaint and will ensure that reasonable measures are implemented to correct the problem. A contact telephone number for the noise disturbance coordinator will be conspicuously posted on construction site fences and will be included in the written notification of the construction schedule sent to nearby residents.

Impact N-2: Exposure of Existing Noise-Sensitive Land Uses to Noise Originating from the Specific Plan Area—Less than Significant

Traffic noise from parking lots and heating, ventilation, and air conditioning (HVAC) noise from commercial outlets would result in increased noise levels adjacent to the Specific Plan Area. However, the source of this noise is effectively stationary, and the environmental effects of noise from sources inside the Specific Plan Area would be confined to a small area adjacent to the source. For instance, the residents on the Children's Hospital property could be exposed to noise originating from a development project on the Sywest property if the Children's Hospital property is not developed first. However, noise from the Specific Plan Area is expected to conform to the requirements of the Livermore Municipal Code. This impact is therefore considered to be less than significant. No mitigation is required.

Impact N-3: Exposure of Planned Noise-Sensitive Land Uses within the Specific Plan Area to Aircraft Noise from Livermore Municipal Airport—Less than Significant

The City of Livermore General Plan contains noise contours for existing conditions. Under the General Plan, commercial development, parks, hospitals, and churches are considered normally acceptable compatible land uses at noise levels up to 70 dB CNEL/L_{dn}. Aircraft noise levels do not presently exceed 70 dB CNEL/L_{dn} at the Specific Plan Area and are not projected to substantially increase. Therefore, this impact is considered to be less than significant.

Impact N-4: Exposure of Existing Noise-Sensitive Land Uses to Increased Traffic Noise Resulting from Implementation of the El Charro Specific Plan—Less than Significant

Tables 3.11-11 and 3.11-12 summarize the predicted traffic noise levels along roadway segments in the Project Area under the following conditions.

- 2008 baseline versus 2008 baseline plus Prime Outlets Livermore Valley project and a partial Jack London/Airway Boulevard Extension option.
- 2008 baseline versus 2008 baseline plus full project buildout and the Jack London Boulevard Extension option.
- 2008 baseline versus 2008 baseline plus full project buildout and the Airway Boulevard Extension option.

The traffic noise modeling results in Table 3.11-12 provide information on project conditions in 2008.

Table 3.11-11. Traffic Noise Modeling Results—2008 Baseline

Roadway	Segment	Existing Land Use Description	Noise Standard dBA CNEL/L_{dn}	2008 Baseline L_{dn} 100 Feet
Dublin Boulevard	Hacienda Drive to Tassajara Road	Existing subdivision	60	61
Airway Boulevard	Extension to Isabel Avenue (future)	Existing commercial	70	61
Isabel Avenue	Airway Boulevard to West Jack London Boulevard	Existing commercial	70	62
West Jack London Boulevard	Isabel Avenue to North Murrieta Boulevard	Existing subdivision	60	59
Isabel Avenue	West Jack London Boulevard to East Stanley Boulevard	Existing subdivision	60	62
Stoneridge Drive	Kamp Drive to El Charro Road	Existing subdivision	60	50
I-580[1]	Near Hacienda Drive	Existing/planned subdivision	60	76
I-580[1]	Near North Murrieta Boulevard	Existing/planned subdivision	60	76
El Charro Road	Near West Jack London Boulevard	Specific Plan—Prime Outlets Livermore Valley	70	57
El Charro Road	South of West Jack London Boulevard	Specific Plan—commercial	70	56
Freisman Road[1]		Specific Plan—commercial	70	73
West Jack London Boulevard	El Charro Road to the Arroyo Las Positas	Specific Plan—commercial	70	–
West Jack London Boulevard (Jack London Boulevard Extension)	The Arroyo Las Positas to Isabel Avenue	Recreational/ open space	70	52
Airway Boulevard (Airway Boulevard Extension)	Cottonwood Creek to the existing Airway Boulevard	Golf course	75	–

Note:

[1] Noise level for worst-case condition of 2,000 vehicles per hour per lane at posted speed on I-580, converted to L_{dn}.

The results in Table 3.11-12 indicate that implementation of the proposed Project would not result in significant traffic noise impacts at existing noise-sensitive

land uses in the Project Area. This impact is therefore considered to be less than significant.

Impact N-5: Exposure of Planned Future Noise-Sensitive Land Uses within the Specific Plan Area to Traffic Noise—Less than Significant with Mitigation

Table 3.11-13 summarizes predicted traffic noise levels in the Specific Plan Area adjacent to I-580. These results indicate that the planned retail uses and possible church campus development adjacent to I-580 within the Specific Plan Area would be exposed to traffic noise exceeding the corresponding land use compatibility standard of 70 dB L_{dn}. Noise level contour distances are shown in Table 3.11-13.

Table 3.11-13. Noise Level Contour Distances at Properties Adjacent to I-580

Sound level, dB L_{dn}	75 dB	**70 dB**	65 dB	60 dB
Distance, feet	170	**300**	520	870

Since the 70 dB L_{dn} noise level contour lies inside the property line of these Specific Plan land uses, this impact is considered to be significant.

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

Mitigation Measure N-5: Design Land Uses to Comply with Land Use Compatibility Standards for Exterior Noise

Land use development adjacent to I-580 shall be designed such that noise at noise-sensitive outdoor use areas does not exceed 70 dB L_{dn}. This can be accomplished by locating noise-sensitive outdoor use areas at least 300 feet away from the centerline of I-580 or by incorporating shielding elements such as buildings, walls, or earth berms into the development design to ensure that the 70 dB L_{dn} standard is not exceeded at outdoor noise-sensitive use areas on the property. Examples of noise-sensitive outdoor uses that should be protected include areas of frequent human use such as park areas, game courts, picnic areas, and outdoor dining areas. Parking lots are not considered noise-sensitive outdoor use areas.

Table 3.11-12. Traffic Noise Modeling Results—2008 Baseline Versus 2008 Baseline with Project, and 2008 Full Buildout Scenarios

Roadway	Segment	Existing Land Use Description	Noise Standard dBA CNEL/L_{dn}	2008 Baseline L_{dn} 100 Feet	2008 Plus Phase I L_{dn} 100 Feet	2008 Change with Prime Outlets Livermore Valley L_{dn} 100 Feet	2008 Full Project with Jack London Boulevard Extension L_{dn} 100 Feet	2008 Change with Full Project and Jack London Boulevard Extension dB 100 Feet	2008 Full Project and Airway Boulevard Extension L_{dn} 100 Feet	Change with 2008 Full Project and Airway Boulevard Extension dB 100 Feet
Dublin Boulevard	Hacienda Drive to Tassajara Road	Existing subdivision	60	61	62	+1	63	+2	62	+1
Airway Boulevard	Golf course to Isabel Avenue (future)	Existing commercial	70	61	61	0	61	0	61	0
Isabel Avenue	Airway Boulevard to West Jack London Boulevard	Existing commercial	70	62	62	0	62	0	63	+1
West Jack London Boulevard	Isabel Avenue to North Murrieta Boulevard	Existing subdivision	60	59	59	0	61	+2	60	+1
Isabel Avenue	West Jack London Boulevard to East Stanley Boulevard	Existing subdivision	60	62	62	0	63	+1	62	0
Stoneridge Drive	Kamp Drive to El Charro Road	Existing subdivision	60	50	50	0	50	0	50	0
I-580[1]	Near Hacienda Drive	Existing/ planned subdivision	60	76	76	0	76	0	76	0

Roadway	Segment	Existing Land Use Description	Noise Standard dBA CNEL/L_{dn}	2008 Baseline L_{dn} 100 Feet	2008 Plus Phase I L_{dn} 100 Feet	2008 Change with Prime Outlets Livermore Valley L_{dn} 100 Feet	2008 Full Project with Jack London Boulevard Extension L_{dn} 100 Feet	2008 Change with Full Project and Jack London Boulevard Extension dB 100 Feet	2008 Full Project and Airway Boulevard Extension L_{dn} 100 Feet	Change with 2008 Full Project and Airway Boulevard Extension dB 100 Feet
I-580[1]	Near North Murrieta Boulevard	Existing/ planned subdivision	60	76	76	0	76	0	76	0
El Charro Road	North of West Jack London Boulevard	Specific Plan—Prime Outlets Livermore Valley	70	57	62	+5	64	+7	64	+7
El Charro Road	South of West Jack London Boulevard	Specific Plan—commercial	70	56	56	0	56	0	56	0
Freisman Road[1]		Specific Plan—commercial	70	73	73	–	73	–	73	–
West Jack London Boulevard	El Charro Road to the Arroyo Las Positas	Specific Plan—commercial	70	–	58	–	60	–	60	–
West Jack London Boulevard (Jack London Boulevard Extension option)	The Arroyo Las Positas to Isabel Avenue	Recreational/ open space	70	52	52	0	60	+8	52	0
Airway Boulevard (Airway Boulevard Extension option)[2]	Cottonwood Creek to the existing Airway Boulevard	Golf course	75	74	74	–	74	–	74	–

Notes:

[1] Noise level for worst-case condition of 2,000 vehicles per hour per lane at posted speed on I-580, converted to L_{dn}.

[2] All noise levels based on existing conditions 100 feet south of I-580. Change with Project not modeled.

Significant impacts shown in **Bold** (none in this table).

3.12 Population and Housing

This section describes the setting and potential population and housing impacts of the proposed Project. Specifically, it describes existing conditions related to population and housing and summarizes the overall regional/local regulatory framework that would affect implementation of the Project. This section then analyzes the potential impacts of the Specific Plan on population and housing.

Environmental Setting

Population and housing information for the Project Area was obtained from the California Department of Finance (2004; 2006a; and 2006b), the City of Livermore General Plan Land Use Element (City of Livermore 2004a), the City of Livermore General Plan Housing Element (City of Livermore 2004a), and the ABAG Regional Housing Needs Allocations (Association of Bay Area Governments 2006).

Existing Conditions

Alameda County

Alameda County, with a population of approximately 1.5 million, is the second largest county in the Bay Area. Between 1995 and 2000, the county economy added 80,000 new jobs, a marked contrast compared with the negative job growth associated with the previous 5-year period. Strong residential growth during the 1995–2000 period accommodated 24,000 new households, 8,000 of which were in the eastern county (City of Livermore 2004a).

The population of Alameda County in 2000 was approximately 1,451,109. It is projected to reach approximately 1,651,164 by 2010, 1,864,145 by 2020 (an increase of about 28.5% from year 2000 conditions) (California Department of Finance 2004).

City of Livermore

The city accounts for 5.4% of the total population of the county. Between 1980 and 2000, the population of Livermore grew from 48,349 to 73,345, an increase of 52%. Between 1990 and 2000, the population in Alameda County increased at a slower rate, by about 13%; however, during the same period, the Livermore population growth was more than twice that of the county, at approximately 29%. The California Department of Finance (2006a) estimated the population of the city to be 81,443 in January 2006, an increase of 1.4% over the population of

80,326 in January 2005. The Livermore population is projected to increase to almost 100,000 by the year 2020 (City of Livermore 2004a).

As of January 1, 2006, there were 23,754 single-family and 5,231 multifamily dwelling units in the city (California Department of Finance 2006b).

As of 2002, Livermore had approximately 1.5 jobs for each housing unit, resulting in about one job for every employed resident. At the same time, Livermore had relatively expensive housing units compared with relatively lower paying jobs; it lacked affordable housing for lower-paid workers and higher-paying jobs for residents of more expensive housing. The process of matching types of jobs and wages with housing costs is identified in the General Plan as critical to address potential traffic congestion and other growth impacts (City of Livermore 2004a).

Regulatory Setting

State Regulations

California Planning and Zoning Law (Government Code 65000 et seq.) requires each city and county to adopt a general plan for the physical development of the land within its planning area. The general plan must contain land use, housing, circulation, open space, conservation, noise, and safety elements as well as any other elements that the city or county may wish to adopt.

The housing element of a local general plan must incorporate policies and programs that will allow sufficient housing to be built to meet the community's share of the region's projected housing need. The housing element must include policies and programs for housing for all economic sectors, including very low-, low-, and moderate-income residents. A copy of the draft housing element must be sent to the California Department of Housing and Community Development (HCD) for review and comment before it may be adopted by the city or county. HCD will advise the local jurisdiction about the element's compliance with the Housing Element Law (Government Code 65580 et seq.) A housing element that has been approved by HCD is presumed to meet the requirements of the Housing Element Law.

As part of its responsibilities in the process of preparing local housing elements, HCD provides regional housing need projections to the regional councils of government around the state approximately every 5 years. In turn, the councils are responsible for preparing a regional housing needs assessment that specifically enumerates each city's and county's fair share of the regional housing need by economic segment. Each city or county then must amend its housing element to recognize that fair share.

ABAG prepared the regional housing needs determinations for the County and its cities in 2000. The resultant 1999–2006 regional housing needs determinations establish the following fair share numbers for the County and the Cities of

Livermore, Pleasanton, and Dublin (Association of Bay Area Governments 2006). The fair share allocations are summarized in Table 3.12-1.

Table 3.12-1. Regional Housing Needs Allocations

Jurisdiction	Total Projected Need	Very Low Income	Low Income	Moderate Income	Above Moderate Income
Alameda County (unincorporated included in total)	5,310 (629)	1,785	767	1,395	1,393
Livermore (unincorporated SOI need included in total)	5,107 (917)	875	482	1,403	2,347
Pleasanton	5,059 (112)	729	455	1,239	2,636
Dublin	5,436 (695)	796	531	1,441	2,668

Note:

Total projected need includes residential units within the cities' unincorporated SOIs. ABAG assigns 75% of the portion of the total need to each city and 25% to the county. The need assigned to the unincorporated SOIs is listed in parentheses under Total Projected Need.

Source: Association of Bay Area Governments 2006.

Local Regulations

Alameda County General Plan

The County's Housing Element was updated in October 2003 (Alameda County 2003). HCD has reviewed the element and found that it complies with State Housing Law. The Housing Element does not include updated goals and policies at the time of this writing. The County's Ordinance Review Advisory Committee will be developing draft language for the various housing ordinance amendments needed to implement the Housing Element. Once this process is complete, the Housing Element goals, policies, and objectives will be finalized. However, the Housing Element does contain the quantified objective of 918 nonsubsidized units for unincorporated Alameda County 2001–2007.

City of Livermore General Plan

The City adopted a residential growth policy in 1976 that established a residential growth rate of 2% on a first-come, first-served basis for developers. As part of the 2004 General Plan update, the growth rate was changed to a numerical range between 140 and 700 dwelling units per year, equivalent to a 0.5% to 2.5% annual growth rate, based on the existing number of dwelling units in November 2002.

Livermore is completely surrounded by a UGB, intended to protect existing agricultural uses and natural resources outside the city from future urban development. The South Livermore Urban Growth Boundary Initiative (passed

in 2000) and the North Livermore Urban Growth Boundary Initiative (passed in 2002) established the UGB around the southern and northern edges of the city. In the Specific Plan Area, the UGB runs contiguous with the city limit line on the northern and western boundaries of the Specific Plan Area, along I-580 and El Charro Road, respectively. The UGB's southern boundary continues along El Charro Road just south of the Specific Plan Area boundary.

The City's General Plan Housing Element was updated in September 2003 (City of Livermore 2004a). HCD has reviewed the element and found that it complies with State Housing Law. The Housing Element includes the following goal related to population and housing that is relevant to the Specific Plan:

> **Goal 2:** Well Managed Growth. Manage residential growth to promote (1) the production of housing to meet local and regional housing needs; (2) a growth rate commensurate with the provision of infrastructure capacity and public services, (3) a balanced relationship between residential and non-residential development; and (4) the highest quality design for all residential units and neighborhoods.

The City's General Plan Land Use Element (City of Livermore 2004a) includes the following goal and policy related to population and housing that are relevant to the proposed Project:

> **Goal LU–2:** The City recognizes that it has an overriding responsibility to promulgate policies and programs which will result in the management of growth to best serve the health, safety, and general welfare of its residents.
>
> **Policy:**
>
> **P3.** Future growth shall not exceed the community's capability to provide services. School classroom facilities, sewage treatment capacity, treated domestic water, public parks and recreation, and public safety services shall be the principal factors considered.

Impact Analysis

Thresholds of Significance

The proposed Project would have a significant impact on population, employment, and housing if it would:

- induce substantial, unanticipated population growth within the city, either directly (by proposing new homes and businesses) or indirectly (through the extension of roads or other infrastructure);
- substantially alter the location, distribution, or density of the population of the city;
- displace existing housing, especially affordable housing;

- create a substantial demand for additional housing;
- hinder the accomplishment of projected "fair share" housing needs; or
- create a substantial jobs/housing imbalance.

Approach and Methodology

The proposed Project was evaluated for potential housing displacement impacts, population growth inducement impacts (also see Chapter 4, "Other CEQA Considerations"), and consistency with relevant local plans and policies.

Impacts and Mitigation Measures

Impact POP-1: Displacement of a Substantial Number of Existing Housing Units or People—Less than Significant

Existing housing in the Specific Plan Area consists of residences located on the Children's Hospital property. Buildout of the Specific Plan ultimately would result in commercial uses on the Children's Hospital property and would result in the displacement of residences on this property. However, the General Plan EIR (LSA Associates 2003) does not identify a housing shortage in the city, and a substantial number of residential units would not be displaced. Therefore, the proposed Project would result in less-than-significant displacements, and no mitigation is required.

Impact POP-2: Direct Inducement of Substantial, Unanticipated Population Growth—No Impact

The proposed Project does not include housing units. Therefore, the Project will not directly induce population growth. There would be no impact, and no mitigation is required.

Impact POP-3: Indirect Inducement of Substantial Population Growth—Less than Significant

The proposed Project has the potential to indirectly induce substantial population growth due to the creation of new jobs from the retail and other commercial uses proposed by the Project.

The relationship between jobs and employed residents in an area, the jobs/housing balance, affects housing market conditions, commute patterns, traffic congestion, and air quality. The relatively simple ratio of jobs to employed residents reflects the results of a complex set of interactions and factors that determine where people choose to live and their travel patterns. Regional planning efforts in the Bay Area seek to "balance" the number of jobs and the number of employed residents, or to improve an existing imbalance, for the purposes of achieving goals related to improved housing affordability, commute patterns, congestion, and air quality.

The General Plan EIR indicates that Livermore would have a jobs/housing ratio of 1.5 to 1 at General Plan buildout (LSA Associates 2003). According to the General Plan EIR, a jobs/housing ratio of 1.5 to 1 is considered desirable for a balanced community because this translates into sufficient jobs to employ the community's working residents and the potential to minimize in-and out-commuting, while not anticipating every individual in a household to work. (LSA Associates 2003)**.** The General Plan EIR determined that the projected citywide increase in the ratio of jobs to employed residents under the General Plan would not be a significant impact because the 2004 General Plan redesignated many commercial/industrial uses to residential and mixed uses, effectively increasing future residential densities over the previous 1973 General Plan (LSA Associates 2003). The proposed Project includes commercial uses consistent with the General Plan. Therefore, this impact is less than significant, and no mitigation is required.

3.13 Public Services and Utilities

This section describes the environmental setting and impacts to public services and utilities of the proposed Project, including development proposals and associated infrastructure improvements. These are described and analyzed with respect to public services and demand, not the construction of additional public facilities, which are analyzed in other chapters of this document.

Environmental Setting

This section describes the setting and potential public services and utilities impacts of the proposed Project. Sources of data used in the preparation of this section include the most recent version of the City of Livermore General Plan 2003–2025 (City of Livermore 2004a), adopted February 9, 2004, El Charro Specific Plan (EDAW|AECOM 2006), and the City's Utility Master Plans.

Existing Conditions

Table 3.13-1, below, lists public service and utility providers in the Project Area. These services are described further in the sections below.

Table 3.13-1. Public Service and Utility Providers in the Project Area

Public Service or Utility	City of Livermore
Police	Livermore Police Department
Fire	Livermore-Pleasanton Fire Department
Schools	Livermore Valley Joint Unified School District
Parks	City of Livermore, Livermore Area Recreation and Park District, and East Bay Regional Park District
Solid waste	Alameda County Waste Management Authority
Wastewater	City of Livermore, Public Works Department
Water (raw)	State Water Project South Bay Aqueduct
Water (treated)	Livermore Municipal Water (City of Livermore)
Water (recycled)	Livermore Municipal Water (City of Livermore) Water Resources Division
Storm drainage	Zone 7 Water Agency and City of Livermore, Water Resources Division
Gas and electric	Pacific Gas & Electric Company (PG&E)
Communication	AT&T and Comcast Corporation
Other utilities	Zone 7 Water Transmission

Source: City of Livermore General Plan 2003–2025 (City of Livermore 2004a).

Police and Fire

The Livermore Police Department operates one station at the Civic Center on South Livermore Avenue. The department totaled 170 staff members in May 2003. Livermore is divided into five areas that are regularly patrolled by officers. Response times within the city limits vary according to the priority of the call (City of Livermore 2004a).

Outside city limits, police services are provided by the Alameda County Sheriff's Department and the California Highway Patrol.

The Livermore-Pleasanton Fire Department provides fire protection services to the city. The department operates five stations within the city. The fire stations are spread along the proposed project alignment. As of May 2003, the Livermore-Pleasanton Fire Department comprised 128 staff members, including 30 fire captains, 30 fire engineers, and 45 firefighters (City of Livermore 2004a). A seven-minute total reflex time measure is composed of five minutes travel time, plus one minute dispatch processing and one minute for the crew to get dressed in protective safety clothing and start the engine rolling to the emergency call.

Unincorporated areas of the county are protected from fire hazards by the Alameda County Fire Department. The department operates one station in the city. This station has two engines and three squads. Its response area is the largest in the area, encompassing 280 square miles of open-range land and freeway (Alameda County Fire Department 2004). The California Department of Forestry and Fire Protection (CDF) and Lawrence Livermore National Laboratory also provide fire response in the unincorporated areas. The CDF also has a station just north of the project site in Dublin, off Fallon Road.

Parcels within the Project Area contain grasslands, weedy areas, and agricultural fields as well as vegetated riparian areas along the Arroyo Las Positas and Cottonwood Creek. The Las Positas Golf Course includes vegetated riparian areas along the Arroyo as well as the maintained lawn areas of the golf course. The General Plan notes that the Specific Plan Area is located in an area of moderate wildland fire hazard, based upon the Fire Hazard Severity Scale (City of Livermore 2004a).

Solid Waste

The Alameda County Waste Management Authority has the responsibility for the collection and disposal of solid waste in the county and contracts this service to Waste Management, Inc., a private waste collection and disposal firm. Solid waste from the city is transported for disposal to the Vasco Road Landfill, operated by Republic Services, LLC, or the Altamont Landfill, operated by Waste Management. The Vasco Road Landfill is designated to receive Class II and III wastes, which allow disposal of municipal solid waste, asbestos, auto-shredder waste, recycling, construction and demolition debris, green waste,

wood, concrete, bricks, and residential recyclable materials. The landfill is permitted to receive 2,500 tons per day of general nonhazardous waste materials (California Integrated Waste Management Board 2004).

In 2002, the Vasco Road Landfill received approximately 81,000 tons of solid waste from the Livermore area (City of Livermore 2004a). The permitted capacity of the landfill is 32 million cubic yards, while the remaining capacity, as of 2001, was 12 million cubic yards. The General Plan EIR and General Plan (LSA Associates 2003; City of Livermore 2004a) identify Vasco Road Landfill as having capacity for the development identified in the General Plan..

The Altamont Landfill is permitted to receive Class II and III waste. The landfill has current capacity for 59 million cubic yards. As of 2001, the remaining capacity of the landfill was approximately 16 million cubic yards. In 1999, a conditional use permit (C-5512) was approved for an expansion of the landfill. The new permit allows for the disposal of an additional 40 million tons of waste. The Altamont Landfill is permitted to receive 11,000 tons per day of general nonhazardous waste. The expected closure date for this landfill is estimated to be in 19 to 28 years (ESA 2000).

Underground and Overhead Utilities

PG&E has several natural gas pipelines that traverse the east Alameda County area, and five oil pipelines that traverse the northeastern portion of the county. In the Project Area, PG&E has a 16-inch gas line running parallel to I-580 and under Freisman Road just south of I-580, crossing under El Charro Road just outside of the Caltrans road right-of-way. Other underground and overhead utilities in the proposed Project Area include communication lines for telephone, cable, and Internet services, including an AT&T underground fiber optic line (the fiber easement transects the Specific Plan Area).

SBC Pacific Bell (SBC) provides residential and commercial telephone service within the Livermore area. SBC has indicated to the City that it is nearing capacity for additional phone service. However, the PUC requires that SBC anticipate and serve new growth, necessitating SBC to upgrade its facilities and infrastructure. Cable services within the City of Livermore are provided by Comcast Corporation, which merged with AT&T Cable Services in 2002. Comcast has a franchise agreement with the City for cable communication services, including television. During the three to five years prior to the 2004 General Plan, the Planning Area underwent cable infrastructure upgrades associated with the installation and use of fiber optics.

In addition, sewer, storm, and potable water pipelines are located underground, such as the 36-inch Zone 7 Cross Valley Water Line , which, with the PG&E gas line, runs parallel to I-580 and under Freisman Road just south of I-580, crossing under El Charro Road just outside of the Caltrans road right-of-way. As part of Zone 7's Well Master Plan (ESA 2004), the agency intends to connect this pipeline to Cope Lake from Zone 7's turnout on Freisman Road. The location of

these lines is documented and managed by the City and County. Coordination between utility companies is required when construction is planned in close proximity to buried lines.

Energy

As noted in the General Plan (City of Livermore 2004a), in addition to maintaining six natural gas regulator stations within the City, PG&E provides electricity to the City via a 230-kilovolt (kV) transmission line, from where it is distributed to local substations. PG&E operates several 69-kV electrical substations within and in the vicinity of Livermore, including the Livermore Substation near Stanley Boulevard/First Street, the Las Positas Substation near First Street/I-580, and the Vasco Substation south of I-580/east of Vasco Road. As of 2003, electrical demand in the region was more than 98 percent of the area's existing electrical system capacity on an average daily basis. In October 2001, the California Public Utilities Commission approved PG&E's Tri-Valley 2002 Capacity Increase Project. The General Plan stated:

> The Certificate of Public Convenience and Necessity included the authorization for the following new electrical substations in North Livermore and Dublin, along with associated transmission lines:
>
> - Construction of two new distribution substations; one in Dublin, named Doolan Canyon, scheduled to be completed in June 2005, and another in North Livermore named Cayetano, at the intersection of May School Road and North Livermore Avenue, and scheduled to be completed in December of 2003.
>
> - Installation of 7.9 miles of 230-kV overhead double-circuit transmission line in PG&E's existing vacant easement to serve the Dublin and North Livermore Substations.
>
> - Construction of approximately 10 miles of new 230-kV double-circuit transmission line in PG&E's existing vacant easement from the Contra Costa-Newark 230-kV line southeast to the Tesla Substation connecting the Dublin and North Livermore substations directly to the Tesla Substation.
>
> - Upgrading the Vineyard Substation in Pleasanton. As of March 2003, the timing of the development of the Cayetano North Livermore substation was not defined. At this time, PG&E was monitoring loads and conducting peak load studies to determine approximately when electricity demand in the Tri-Valley region will exceed capacity. Based on 2002 peak load, PG&E anticipated that the construction of the Cayetano North Livermore substation will be completed in December 2003 to avoid exceeding the electricity capacity in the Tri-Valley region.

With regard to alternative energy, the General Plan (City of Livermore 2004a) notes several alternative energy sources in and around Livermore that provide

energy to the City, including the Altamont Landfill, which captures landfill gases to generate 6,600 kW of energy for all on-site operations, as well as approximately 6,000 homes in the area. In addition, the Altamont Pass contains numerous wind energy projects, and PG&E is the primary purchaser and user of the energy generated by these wind projects.

> The annual energy output for year 1998 was estimated at 637 million kilowatt hours. Two new projects, with a total capacity of 136.6 kW, are currently proposed and are anticipated to begin operation in 2004 or later (City of Livermore 2004a).

Storm Drainage

Stormwater in the proposed Project Area drains toward Cottonwood Creek and the Arroyo Las Positas. The City recently updated its Storm Drainage Master Plan to outline improvements and progress toward compliance with the stormwater permit from the SFBRWQCB under the Alameda Countywide Clean Water Program. Much of the storm runoff within the city limits is captured through pipe inlets that transport water to creeks or detention basins. There are also open drainage ditches that divert stormwater to nearby creeks or detention basins. The Alameda County Public Works Agency and Zone 7 manage storm drainage in unincorporated areas of the Project Area. Storm drainage mechanisms in unincorporated areas of the county commonly consist of open drainage ditches leading to creeks.

Water Supply and Demand

Water Supply

Livermore Municipal Water purchases treated water from the Zone 7 Water Agency, and such water would supply municipal and industrial water to the proposed project. Zone 7 currently treats the water at either their Patterson Pass Treatment Plant or their Del Valle Treatment Plant. By 2011, Zone 7 will have finished the Altamont Water Treatment Plant (AWTP), which will be their third in the valley. Water from all the treatment plants will be delivered to Livermore Municipal Water by Zone 7's transmission lines. A brief overview of water supply sources is given below.

Four sources of water supply the Livermore Valley. These are the State Water Project, the safe groundwater yield from the Livermore Valley groundwater basin, the Del Valle reservoir, and the Byron Bethany Irrigation District. As of 1999, these sources supply an estimated long-term average sustainable yield of 62.5 thousand acre-feet (TAF) per year to the Livermore Valley, of which approximately one-third is supplied locally from the Livermore Valley groundwater basin and runoff that fills the Del Valle reservoir (Water Transfer Associates 1999).

The major water supply source for the proposed Project would be from the State Water Project. Zone 7, the Alameda County Water District (ACWD), and the Santa Clara Valley Water District (SCVWD) currently contract use of the South Bay Aqueduct (SBA) conveyance facility to receive delivery under contract with the State Water Project operated by the Department of Water Resources. The current SBA design capacity is 290 cfs (210,000 acre feet per year [af/yr]); however, only 260 cfs (188,000 af/yr) of this capacity were originally allocated to the contractors (Water Transfer Associates 1999). In 1998, Zone 7 agreed to purchase the remaining SBA capacity of 30 cfs (22,000 af/yr). Zone 7 has a contractual agreement with the Department of Water Resources to receive 80.6 TAF of water via the SBA (Fong pers. comm.). The Department of Water Resources contract provides Zone 7 with 46 TAF of water supply, with long-term yields for the contract amount of 34.8 TAF (Water Transfer Associates 1999). Expansion of the SBA is needed to utilize this full contract amount. Construction of the SBA expansion is expected to be done in 2009.

The two existing treatment plants take water from the SBA. The Del Valle Treatment Plant is also able to withdraw water from Lake Del Valle during certain times of the year. The capacity of the Patterson Pass Treatment Plant is 19 million gallons per day (mgd). The capacity of the Del Valle Treatment Plant is 36 mgd giving a total amount of treated water of 55 mgd. Both of these treatment plants deliver water to Livermore Municipal Water, which can supply water to the Project. Zone 7 also has seven wells in three well fields that produce a peak capacity of 32 mgd.

The future AWTP, which would treat water for subsequent distribution in the Altamont Pipeline, would be built in phases. Initial capacity of the transmission to the AWTP would be 12 to 24 million gallons per day. Ultimate plant capacity would be 42 mgd. Raw water for treatment at the AWTP would be pumped from SBA, which would obtain this water from the Delta at the South Bay Pumping Plant and then transfer it through the Bethany Reservoir northeast of Altamont Pass. The water then would be conveyed to the future Dyer Reservoir Pool and ultimately to the AWTP. Treated water would travel from all treatment plants through the Zone 7 distribution system to Livermore Municipal Water and then through Livermore's distribution system to the Project. This water would supply the Specific Plan Area with fire supply, recycled water supply, and potable water supply.

Water Demand

The Livermore Municipal Water agency prepared a Water Supply Assessment (WSA) for the proposed Project pursuant to SB 610, which is included as Appendix D to this document. The following is a summary of the pertinent contents of the WSA.

- Calculated water demand for the proposed Project would be 140 af/yr based on 156 acres of BCP at 800 gallons per day (gpd) per acre.
- The source of treated water is the Zone 7 Water Agency as described above. Supply is guaranteed by Zone 7 through 2030.

- In addition to treated water, Zone 7 has a maximum of 5,600 af/ yr of recycled water available, which is sufficient for outdoor irrigation uses.
- Section 7 of the Urban Water Master Plan (UWMP shows that water supply reliability, both present and future, is sufficient for normal, dry, and multiple dry years through 2030.
- The City has no groundwater supply.
- The UWMP shows that there is sufficient water based on the Project's estimated water use.

Regulatory Setting

State Regulations

California Public Utilities Commission

The California Public Utilities Commission (CPUC) regulates privately owned telecommunications, electric, natural gas, water, railroad, rail transit, and passenger transportation companies. CPUC is responsible for ensuring California utility customers have safe, reliable utility service at reasonable rates, protecting utility customers from fraud, and promoting the health of California's economy. The CPUC establishes service standards and safety rules and authorizes utility rate changes as well as enforcing CEQA for utility construction. The CPUC also regulates the relocation of power lines by public utilities under its jurisdiction, such as PG&E. The CPUC works with other state and federal agencies in promoting water quality, environmental protection, and safety.

California's Energy Efficiency Standards for Residential and Nonresidential Buildings (Title 24)

The Energy Efficiency Standards for Residential and Nonresidential Buildings were established in 24 CCR Part 6 in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow for consideration and possible incorporation of new energy efficiency technologies and methods. New standards were adopted by the CPUC in 2001 as mandated by Assembly Bill (AB) 970 to reduce California's electricity demand. The new standards went into effect on June 1, 2001. The standards (along with standards for energy efficient appliances) have saved more than $20 billion in electricity and natural gas costs. It is estimated that the standards will save $57 billion by 2011.

California Integrated Waste Management Act

In 1989, AB 939, known as the Integrated Waste Management Act, was passed into law. Enactment of AB 939 established the California Integrated Waste Management Board (CIWMB), and set forth aggressive solid waste diversion requirements. Under AB 939, every city and county in California is required to reduce the volume of waste sent to landfills by 50%, through recycling, reuse, composting, and other means. AB 939 requires counties to prepare a Countywide Integrated Waste Management Plan (CIWMP). An adequate

CIWMP contains a summary plan that includes goals and objectives, a summary of waste management issues and problems identified in the incorporated and unincorporated areas of the county, a summary of waste management programs and infrastructure, information about existing and proposed solid waste facilities, and an overview of specific steps that will be taken to achieve the goals outlined in the components of the CIWMP.

Local Regulations

City of Livermore General Plan

The General Plan describes the following objectives and policies regarding impacts to public services and utilities (City of Livermore 2004a).

> **Goal INF-1:** Provide sufficient water supplies and facilities to serve the City in the most efficient and financially sound manner, while maintaining the highest standards required to enhance the quality of life for existing and future residents.
>
> **Objective INF-1.1:** Plan, manage and develop the public water treatment, storage and distribution systems in a logical, timely and appropriate manner.
>
> **Policy:**
>
> **P2.** The City shall maintain a water system capable of sustaining required fire flows at all times. The City shall work with California Water Service Company to insure its system also meets required fire flows.
>
> **Objective INF-1.2:** Require coordination between land use planning and water facilities and service to ensure that adequate water supplies are available for proposed development.
>
> **Policy:**
>
> **P1.** The potable water distribution and storage system shall be sized to serve development anticipated under the General Plan and shall not provide for additional growth and development beyond that anticipated under the General Plan.
>
> **Objective INF-1.3:** Identify potential water conservation and recycling opportunities that could be served by the City's existing recycled water system.
>
> **Policy:**
>
> **P3.** The City shall adopt a series of Best Management Practices for water conservation measures that will be mandatory in new development and strongly encouraged in existing developments.

The General Plan Infrastructure and Public Services Element has the following goals, objectives, and policies regarding wastewater.

Goal INF-2: Collect, treat and dispose of wastewater in ways that are safe, sanitary, environmentally acceptable and financially sound while maintaining the highest standards required to enhance the quality of life for existing and future residents.

Objective INF-2.1: Plan, manage and develop wastewater collection, treatment and disposal systems in a logical, timely and appropriate manner.

Policies:

P1. Municipal sewer treatment shall be available to the City's residents and businesses.

P2. Septic tanks shall be allowed only in agricultural zones if approved by Zone 7 and the Alameda County Health Department.

P3. The approval of new development shall be conditioned on the availability of adequate long-term capacity of wastewater treatment, conveyance and disposal sufficient to service the proposed development.

P4. The City shall implement a wastewater disposal master plan designed to provide for the disposal of peak wet weather flows anticipated under buildout of the General Plan. No new development entitlements shall be granted once the Average Dry Weather Flow reaches 7.0 million gallons per day at the Water Reclamation Plant until a master plan for sewer has been adopted that addresses the capacity shortfall, including a schedule for implementation. This master plan may include any, or a combination of the following components: (a) Increased water reclamation, storage and disposal via agriculture irrigation and/or other uses. (b) Increased water reclamation, storage within an approved Zone 7 facility such as the Chain of Lakes, and disposal via irrigation within Livermore and the surrounding vicinity. (c) The purchase of additional capacity in the Livermore-Amador Valley Watershed Management Agency (LAVWMA) export pipeline. This option must be approved by the voters of Livermore through a subsequent ballot measure. (d) Other options as may be developed that are more cost effective and/or environmentally superior.

P5. All new development shall demonstrate to the City that the downstream sanitary sewer system is adequately sized and has sufficient capacity to accommodate anticipated sewage flows. If the downstream mains are found to be inadequate, the developer shall provide additional facilities to accept the additional sewage expected to be generated by the development.

P6. Structures with plumbing that are located within City limits shall connect to the public wastewater collection system, unless topography, or distance from the public sewer system indicate a need for an exemption.

P7. Major sewer collection and transmission systems shall be carefully planned where they cross a seismic fault. They shall cross at right angles, or nearly so, be accessible for rapid repair, and be provided with safety features such as automatic switches, expansion joints and sufficient drop between manholes to accommodate vertical displacement across faults. Other equipment shall be

provided to ensure minimal adverse impact on adjacent and surrounding areas and to facilitate restoration of service in the event of fault displacement.

P8. Sewer collection and transmission systems shall be designed and constructed in such a manner as to minimize potential inflow and infiltration.

P9. The criteria used to design the sanitary sewer system shall be in the master plan prepared for sewer as well as the guidelines for facilities planning, including reliance on gravity drainage to minimize pumping to the extent feasible and basing pipe size on the wet weather flow required per the master plan prepared for sewer.

P10. All new development projects shall be responsible for construction of a sanitary sewer collection and conveyance system as part of the Citywide infrastructure plan. This system shall be designed to serve developments within the approved General Plan only and shall not be extended to serve uses outside of the Urban Area.

P11. The sanitary sewer system shall be designed and constructed in such a manner as to minimize potential environmental impacts.

P12. The City of Livermore shall pursue the implementation of Water Reclamation Plant capacity improvements necessary to accommodate the peak hour wet weather flows anticipated under buildout of the General Plan.

Objective INF-2.2: Enforce City wastewater regulations.

Policies:

P1. Restaurants and others that discharge grease into the wastewater treatment system shall be required to reduce impacts through individual or collective pretreatment facilities that retain wastewater long enough to permit solids to settle and oil and grease to separate.

P2. Regulations related to the discharge of mud and silt into the wastewater treatment system shall be enforced.

The General Plan Infrastructure and Public Services Element has the following goals, objectives, and policies regarding stormwater.

Goal INF-3: Collect, store and dispose of stormwater in ways that are safe, sanitary, environmentally acceptable and financially sound while maintaining the highest standards required to enhance the quality of life for existing and future residents.

Objective INF-3.1: Plan, manage and develop the City's stormwater collection system in a logical, timely and appropriate manner.

Policy:

P1. Design local storm drainage improvements to carry appropriate design-year flows resulting from build out of the General Plan.

Objective INF-3.2: Encourage coordination between land use planning, site design and stormwater pollution control.

Policies:

P1. All new development projects shall be responsible for constructing a stormwater collection system and contributing stormwater collection fees to construct additional necessary facilities. These fees include the City storm drain fees as well as Zone 7 regional storm drainage fees.

P2. Criteria used to design the stormwater system shall be in the master plan prepared for storm drainage.

P3. The City shall take all necessary measures to regulate runoff from urban uses to protect the quality of surface and ground-waters and other resources from detrimental conditions.

P4. Installation of stormwater collection systems should occur concurrently with construction of new roadways to maximize efficiency.

The General Plan Infrastructure and Public Services Element has the following goals, objectives, and policies regarding utilities.

Goal INF-4: Provide utilities in ways that are safe, environmentally acceptable and financially sound.

Objective INF-4.1: Facilitate the development and maintenance of all utilities at the appropriate levels of service to accommodate the City's projected growth.

Policy:

P1. The City shall ensure that utilities, including electricity, natural gas, telecommunications, and cable, are available or can be provided to serve the projected population within the City in a manner which is fiscally and environmentally responsible, aesthetically acceptable to the community, and safe for residents. However, the ultimate responsibility for ensuring that the utilities are available to support new development rests on the sponsor of proposed projects.

Objective INF-4.2: Provide reliable utility service in a way that balances the public's need and Livermore's natural environment.

Policies:

P1. The energy-efficiency of proposed development shall be considered when land use and development review decisions are made.

P2. Process permits and approvals for utility expansions in a fair and timely manner in accordance with the expansion of new development.

P3. The City's design review shall consider solar access, siting structures to maximize natural heating and cooling, and landscaping to aid passive cooling protection from prevailing winds and maximize year-round solar access.

P4. Require the placement of personal wireless communication facilities in a manner that minimizes the adverse impacts on adjacent land uses. New freestanding facility towers and structures should only be considered when no feasible alternative exists or when visual intrusion would be less than that associated with placement on an existing structure or building.

The General Plan Infrastructure and Public Services Element has the following goals, objectives, and policies regarding police services.

Goal INF-5: Maintain a safe environment in Livermore through enforcement of the law, prevention of crime and the function of partnerships with the community.

Objective INF-5.1: Promote coordination between land use planning and law enforcement.

Policies:

P1. Major land use development proposals shall be reviewed for site design criteria and other law enforcement concerns.

P2. The City shall request notification from the County of development projects within the unincorporated part of the Planning Area that could call for law enforcement services from the City.

P3. It is the policy of the City to review annual [Livermore Police Department] staffing levels and development trends to determine whether additional police staffing or facilities are needed.

Objective INF-5.2: Maintain and improve law enforcement and crime prevention services to keep pace with Livermore's changing population.

Policies:

P1. Information on crime prevention should continue to be disseminated to the community.

P2. Livermore's crime rates and types of crime should continue to be monitored to determine the most appropriate methods to target and reduce crime in the City.

The General Plan Infrastructure and Public Services Element has the following goals, objectives, and policies regarding fire, medical, and public emergencies.

Goal INF-6: Minimize loss of life and property from fires, medical emergencies and public emergencies.

Objective INF-6.1: Plan for ongoing management and development of fire protection services.

Policies:

P1. The City shall continue to participate in the joint powers authority agreement governing the consolidated Livermore-Pleasanton Fire Department.

P2. The City shall continue to provide fire fighting equipment, facilities and manpower sufficient to assure: (a) quick response to all calls by the "first due" company (b) availability of additional companies for serious fires in high value areas (c) capability for handling simultaneous fires (d) a water system capable of sustaining prerequisite fire flow at all times.

P3. The City shall maintain its mutual aid agreements with both Lawrence Livermore National Laboratory and Alameda County in order to provide adequate fire protection to unincorporated parts of the Planning Area.

P4. The City will continuously strive to improve performance and efficiency in the Fire Department.

P5. It is the policy of the City to review annual [Livermore-Pleasanton Fire Department] staffing levels and development trends to determine whether additional fire staffing or facilities are needed.

Objective INF-6.2: Promote coordination between land use planning and fire protection.

Policies:

P1. Major land use development proposals in fire hazard areas shall be reviewed for site design criteria and appropriate preventive and self-protective measures.

P2. The City shall request notification from the County of development projects within the unincorporated part of the Planning Area that could call for fire protection services from the City.

P3. Future stations should be located on sites of at least 5/8 to 3/4 acre in size. This allows adequate on-site parking and turn-around and storage space for equipment. A somewhat larger site is desirable if a central office, multi-purpose community meeting room, training center, maintenance yard or fire prevention bureau is to be included as a part of the station.

Objective INF-6.3: Enforce codes related to fire protection.

Policies:

P1. The City shall continue to cooperate with State, County and [Lawrence Livermore National Laboratory] fire protection agencies.

P2. The City shall build and require roadways that are adequate in terms of width, radius, and grade to facilitate access by City fire-fighting apparatus, while considering maintenance of Livermore's character.

P3. The City shall work to reduce demand for public fire protection services through emphasis on fire prevention education and on fire protection measures for private and public structures.

The General Plan Infrastructure and Public Services Element has the following goals, objectives, and policies regarding schools.

Goal INF-7: Provide education facilities sufficient to meet the demands of existing and new development.

Objective INF-7.1: Assist the Livermore Valley Joint Unified School District in developing new school facilities to serve Livermore's current and future population.

Policies:

P1. To the extent allowed by State law, the City shall ensure that school facilities to serve new development are available concurrently with need.

P2. The City will collaborate with the Livermore Valley Joint Unified School District to ensure the provision of educational facilities sufficient for the existing and anticipated K-12 population.

P3. The City shall support efforts to expand State funding of the public school system, as long as it is not to the detriment of municipal funding.

P4. The City shall support School District efforts to develop a technical high school.

Objective INF-7.2: Coordinate land use planning with the school facility planning function of the Livermore Valley Unified School District.

Policies:

P1. The City shall give the School District the opportunity to review proposed residential developments and make recommendations based on school-child projections, existing school capacity, access, traffic issues, need for additional facilities and other such factors in order to assist the City in acting on the proposal.

P2. The City shall consider the comments of the School District concerning availability of educational facilities before approving new residential development.

Objective INF-7.3: Work with the Livermore Joint Unified School District to identify appropriate locations for schools and means of school expansion in order to prevent negative impacts on the health, safety and welfare of students.

Policies:

P1. Elementary schools should be located centrally to the student populations they will serve. Sites shall serve areas bounded by major streets so that children do not have to cross such streets to get to school.

P2. Elementary school sites should be located away from major streets to avoid vehicular noise and traffic hazards which interfere with the educational process.

P3. Wherever possible, school sites should be integrated with recreation parks and community recreation/non-motorized transit corridors to permit recreational experiences as part of the educational process and to allow pedestrian and bicycle access.

P4. Intermediate and high schools should be located centrally to the student populations they will serve. Sites shall have access to collector or major streets to permit access by pedestrians, bicycles and public transit with a minimal impact on surrounding residential areas.

P5. The City shall work with the School District to identify potential future school sites.

P6. The City recognizes that the School District has the final authority to determine appropriate locations for future school sites.

P7. If the School District cannot identify an appropriate future high school site within the urban growth boundary, the City shall support the efforts of the School District to seek a high school site outside the urban growth boundary, in accordance with the NLUGBI.

The General Plan Infrastructure and Public Services Element has the following goals, objectives, and policies regarding solid waste and recycling.

Goal INF-8.1: Collect, store, transport, recycle and dispose of solid waste in ways that are safe, sanitary and environmentally acceptable.

Objective INF-8.1: Promote the recovery of recyclable materials and energy from solid waste generated within Livermore.

Policies:

P1. The City will seek to meet or exceed State requirements with regard to waste diversion and recycling.

P2. The City shall seek to meet the Alameda County Measure D waste diversion goal.

P3. Livermore's businesses shall be encouraged to expand their recycling efforts and to reduce packaging.

Impact Analysis

Thresholds of Significance

Public Services

The proposed Project would have a significant impact on public services if it would:

- result in an increased demand for police and fire services exceeding existing or planned staffing levels;
- result in response times to calls for fire and police services beyond established levels;
- increase the potential risk for urban fire hazards;
- increase the risk of wildland fire hazards;
- result in a demand for school services beyond the existing or planned capacity of the school district served; or
- create a demand for school services or other public facilities that would require the building of new facilities that caused an adverse physical impact.

Utilities

Water Supply and Infrastructure:

The proposed Project would have a significant impact on water supply and infrastructure if it would:

- have insufficient water supplies available to serve the Project from existing entitlements and resources, requiring new or expanded entitlements;
- require the extension or substantial reconstruction of major water and wastewater lines to serve new development, the construction of which could cause significant environmental impacts;
- create substantial demand for water beyond the existing or planned city water supply, requiring additional water storage capacity;
- conflict with the use, operation, or maintenance of an existing utility line or increase the risk of accidental damage to an existing utility line.

Wastewater:

The proposed Project would have a significant effect on wastewater if it would:

- result in the need for extension of new wastewater services into a currently unserviced area;
- result in an increased demand for wastewater conveyance or treatment that requires construction of new wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;
- result in a determination that there is inadequate wastewater treatment or disposal capacity to serve the projected demand, in addition to existing service commitments;
- conflict with the current infrastructure plans of wastewater service providers; or
- exceed the wastewater treatment requirements of the RWQCB.

Storm Drainage:

The proposed Project would have a significant effect on storm drainage if it would:

- require or result in the construction of new stormwater facilities or the expansion of existing facilities, the construction of which could cause significant environmental effects;
- generate additional stormwater runoff that would exceed the existing or planned capacity of the City's storm drain system and require the construction or substantial expansion of existing facilities the construction of which could cause significant environmental impacts; or
- conflict with the use, operation, or maintenance of an existing utility line or increase the risk of accidental damage to an existing utility line.

Other Utilities:

The proposed Project would have a significant effect on other utilities if it would:

- require the substantial expansion or construction or utility infrastructure, which would result in significant physical impacts;
- conflict with the use, operation, or maintenance of an existing utility line or increase the risk of accidental damage to an existing utility line;
- result in a substantial unanticipated decrease in remaining available space at a landfill;
- interfere with the accomplishment of waste diversion goals mandated by the California Integrated Waste Management Act;
- use fuel or energy in a wasteful manner;
- result in an increase of the city's dependence on nonrenewable energy resources; or

- require substantial increases on peak and base period demand for electricity and other forms of energy and additional capacity of local or regional energy supplies.

Approach and Methodology

The analysis of potential impacts on utilities and public services is based on a review of the Specific Plan design guidelines, goals, and policies, the General Plan's guidelines and policies, and the City's and other agencies' utility master plan. Impacts were evaluated based on the likeliness to increase demand, and interfere with or exceed capacity of existing utilities and public service systems, not the construction of additional public facilities.

Impacts and Mitigation Measures

Public Services

Impact PSU-1: Increased Demand for Fire Protection Services—Less than Significant

Project implementation would increase demand on the City of Livermore for fire protection services to serve the proposed Project.

The Livermore-Pleasanton Fire Department requires the first fire engine to arrive within 7 minutes of a call. Station 10, one of the newest stations in Livermore, is currently the closest station to the Specific Plan Area. It is unlikely that the proposed Project will prevent fire services from providing current levels of service to Livermore and Pleasanton residents. In addition, all roads within the Specific Plan Area will provide adequate travel space for fire protection and other emergency vehicles. Typically, the narrowest permitted fire lane is 20 feet wide (16 feet paved with 2-foot shoulders on each side) (EDAW|AECOM 2006).

Required participation in Specific Plan capital improvement financing would ensure that adequate funding is available to ensure timely construction of roadways serving the area. In addition, the Specific Plan's proposed land uses are consistent with General Plan assumptions for the Specific Plan Area (City of Livermore 2004a). The General Plan EIR states that General Plan policies INF-5.1.P3 and INF-6.1.P5 would ensure adequate staffing levels and capital improvements to accommodate an increase in demand for fire protection services. Potential impacts from the General Plan were considered less-than-significant in the General Plan EIR (LSA Associates 2003). For these reasons, the proposed Project would have a less-than-significant impact related to the need for new or physically altered fire protection facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable levels of performance for fire protection.

Impact PSU-2: Exposure of People or Structures to Increased Risk of Loss, Injury, or Death Involving Urban or Wildland Fires—Less than Significant with Mitigation

The Project Area is located in rural areas with ruderal vegetation, agricultural fields and structures that may be susceptible to wildland fire. However, the proposed Project would consist primarily of commercial development and would not include any structures that would house people (except for the Crosswinds' caretaker), putting them at risk to urban or wildland fire.

Certain permitted land uses in the proposed Project, such as a gas station, would include the storage of highly flammable substances that could ignite if transported, handled, or stored improperly, increasing the risk of a fire. However, the construction and operation of a gas station and associated storage tanks would be in accordance with the Certified Unified Program Agency program administered by the Livermore-Pleasanton Fire Department, which regulates the construction and maintenance of, and permits the disposal of, both above-ground and underground storage tanks. Implementation of these regulations reduces this risk to a less-than-significant level.

The proposed Project Area is a moderately hazardous area and at risk of wildfire during construction. After full development of the proposed Project, minimal wildland fire risk would remain. During construction, when the possibility of igniting flammable materials is greatest, this impact is considered significant, but it can be reduced to a less-than-significant level with the implementation of Mitigation Measure PSU-2.

Mitigation Measure PSU-2: Implement Procedures to Reduce Fire Risk During Construction

During construction, all staging areas or areas slated for development using spark-producing equipment will be cleared of dried vegetation or other materials that could serve as fire fuel. Any construction equipment that normally includes a spark arrester will be equipped with an arrester in good working order. In addition, during construction, adequate water will be made available for fire protection.

Impact PSU-3: Potential Increased Need for or Adverse Effects on Police Services (Response Times or Facilities)—Less than Significant

Project implementation would increase the need for City-provided law enforcement services on the Project Area.

The City of Livermore's police services are housed at the Livermore Police Department station in the Civic Center area, approximately 5.5 miles southeast of the Specific Plan Area. The proposed Project Area falls within the first beat of the five beats that the department operates with its almost 100 sworn officers (EDAW|AECOM 2006). Police service standards require priority one calls to be answered within 3 minutes (emergencies, felonies, or life/property threatening), and priority two calls within 10 minutes (potential for danger

Although the commercial development of the proposed Project would increase the need for police services, it does not contain a housing component that would dramatically increase the demand for police services or increase the need for routine patrols, which would degrade current levels of services. In addition, the Specific Plan's proposed land uses are consistent with General Plan assumptions for the (City of Livermore 2004a). The General Plan EIR states that General Plan policies INF-5.1.P3 and INF-6.1.P5 would ensure adequate staffing levels and capital improvements to accommodate an increase in demand for police services. Potential impacts from the General Plan were considered less than significant in the General Plan EIR (LSA Associates 2003). Therefore, it is unlikely that the proposed Project would significantly degrade current levels of police service to Livermore residents. The impact will be less than significant. No mitigation is required.

Impact PSU-4: Disruption of or Adverse Effects on Public Schools or Other Public Services—Less than Significant

The proposed Project involves the construction of commercial floor space, roads, and open space/ recreational areas. No permanent residences, except the Crosswinds caretaker's home if a church campus is constructed, would be created. Therefore, the proposed Project would not result in additional demand on public facilities or substantial effects on public schools or libraries.

Following the City's Park Facilities Fee, a fee for the development of any required new facilities is collected at the time building permits are obtained. These fee revenues are collected to fund acquisition and improvement of parks in the City. The fee is based on dwelling units or gross floor area of commercial or industrial use and is collected at the time building permits are obtained (LMC § 12.60.020 et seq.). With the provision of recreational area and payment of fees, the impact is less than significant. No mitigation is required.

Utilities

Water Supply and Infrastructure

Impact PSU-5: Construction-Related Water Service Interruptions—Less than Significant with Mitigation

The proposed Project would involve grading, construction, and placement/relocation of water service infrastructure within existing open space. This impact would be less than significant with the implementation of Mitigation Measure PSU-5.

> #### Mitigation Measure PSU-5: Conduct an Investigation of Utility Line Locations and Maintain Utility Services
>
> A detailed study identifying the locations of utilities along the proposed project alignment will be conducted during the design phase of the Project. For areas with the potential for adverse impacts on utility services, the following measures will be implemented.

- Utility excavation or encroachment permits will be required from the appropriate agencies. These permits include measures to minimize utility disruption. The City and its contractors will comply with permit conditions. Such conditions will be included in construction contract specifications.
- Utility locations will be verified through a field survey (potholing) and use of the Underground Service Alert services.
- Detailed specifications will be prepared as part of the design plans to include procedures for the excavation, support, and fill of areas around utility cables and pipelines. All affected utility services will be notified of the City's construction plans and schedule. Arrangements will be made with these entities regarding the protection, relocation, or temporary disconnection of services.
- Residents and businesses in the Project Area will be notified of planned utility service disruption 2 to 4 days in advance, in conformance with County and state standards.
- Disconnected cables and lines will be reconnected promptly.
- The City will observe California Department of Health Services (DHS) standards, which require:
  - a 10-foot horizontal separation between parallel sewer and water mains, and
  - a 1-foot vertical separation between perpendicular water and sewer line crossings.

  In the event that separation requirements cannot be maintained, the City will obtain a DHS variance through provisions of water encasement or other means deemed suitable by the department.

Impact PSU-6: Adverse Effects on the Capacity of Water Services—Less than Significant

An average potable water demand of 124,800 gpd or 140 af is estimated for the Specific Plan Area based on the 156 acres of BCP uses and 800 gallons per acre. Maximum daily demand is estimated at 249,600 gpd (based on twice the average demand), and peak hourly demand is 374,400 gpd (three times the average demand) (EDAW|AECOM 2006).

The City's Water Master Plan has outlined the major water infrastructure improvements required for the Project Area. These include fire protection water storage and pumping station waterline projects expected to be completed by the end of 2007 as part of City project 2002-38 and those constructed by the Oaks Business Park development. Development within the Project Area would fund and construct a looped water pipeline extension system consisting of a 12-inch pipeline south of I-580 that would tie in with the City's waterline projects. As stated in the Specific Plan, the City is currently constructing a pump station that would be sized to handle estimated flows for the Project Area. The City also is

scheduled to construct a 3 million gallon reservoir that would provide operational, emergency, and fire storage for the Specific Plan Area.

Zone 7 has anticipated the buildout of the Specific Plan Area through coordination with the City during the General Plan planning process. Existing and planned Zone 7 facilities and water sources are adequate to provide for the proposed Project. The SB 610 WSA, prepared by the Livermore Municipal Water agency for the Specific Plan Area, concludes that Zone 7 deliveries through 2030 would be sufficient for treated water demand in the Project Area and that recycled water would be sufficient for outdoor irrigation uses. Therefore, this impact is considered less than significant. No mitigation is required.

Wastewater Capacity and Infrastructure

Impact PSU-7: Adverse Effects on the Capacity of Wastewater Services—Less than Significant

The Specific Plan Area would be served by City wastewater facilities. Average daily base dry weather flow for the Specific Plan Area is estimated at 91,200 gpd based on 152 acres of BCP with 600 gpd per acre of base sewer flow. Peak hourly wet weather flow is estimated at 316,160 gpd (EDAW|AECOM 2006).

The proposed Project calls for sewer lines to be connected to the City sewer system. Wastewater would be pumped by a new pump station, which would need to have a capacity of 325,000 gpd and would discharge through a new force main into the existing trunk line that feeds the airport pump station at the west end of Jack London Boulevard. The existing 10-inch force main between the airport pump station (capacity of 1.65 million gpd) and the Water Reclamation Plant is adequately sized to handle the combined ultimate peak hourly wet weather flow of 1.325 million gpd (EDAW|AECOM 2006). The Specific Plan outlines the need for a new pump station and connections to connect the Project Area's flows with the existing lines. Some of these planned connections would require pipelines that traverse areas that could impact biological and cultural resources; these impacts are discussed in sections 3.4 and 3.5, respectively. In addition, all of these improvements would be constructed by development within the Specific Plan Area. Because sufficient collection, conveyance, and treatment exists or would be built for the proposed Project, impacts to wastewater services and water services are less than significant, and no mitigation is required.

Storm Drainage

Impact PSU-8: Result in Demand for Additional Stormwater Drainage Infrastructure—Less than Significant

Flooding and water quality impacts associated with stormwater runoff are addressed in section 3.8, "Hydrology and Water Quality." This impact discussion concerns infrastructure demand.

The Specific Plan includes the following policies applicable to stormwater and drainage.

Policy 5.1.2. Provide a storm drainage system sufficient to serve the build out capacity of the El Charro Specific Plan Area.

Objective 5.1.2a: Ensure adequate land for stormwater conveyance within the Plan Area.

Objective 5.1.2b: Design the stormwater conveyance system to serve as a functional component of the stormwater system as well as an attractive recreational amenity within the El Charro Specific Plan Area.

Objective 5.1.2c: Design floodwater conveyance to be consistent with regional as well as Citywide floodwater conveyance objectives.

Objective 5.1.2d: All storm drainage improvements to serve the Plan Area must be consistent with the City's Storm Drainage Master Plan.

As discussed in the section 2, "Project Description", the project includes flooding and stormwater treatment infrastructure to accommodate development of the Specific Plan Area. As discussed in secton 3.8, Prime Outlets has developed a conceptual drainage and stormwater plan that, with revision pursuant to final review, can handle drainage and treat stormwater for that project adequately. The Specific Plan requires that developers within the Plan Area provide for on-site drainage and stormwater treatment devices that, in combination with the infrastructure included within the project as a whole, are capable of handling floodwaters and of treating stormwater so that significant downstream flooding or water quality impacts would not occur. The physical impacts of the proposed drainage and water quality treatment infrastructure are included in the evaluation of other physical impacts in the other section of this EIR (such as concerning biological resources or cultural resources).

Thus, the project, as designed includes the infrastructure and future development controls to ensure that drainage and stormwater treatment infrastructure is built to handle flooding and stormwater runoff adequately. This is considered a less than significant impact related to infrastructure demand.

The reader is referred to other sections of this EIR for discussion of the impacts of the project related to flooding and water quality and the physical impacts of proposed infrastructure improvements.

Other Utilities

Impact PSU-9: Adverse Effects on Other Utilities—Less than Significant

Utility infrastructure is addressed in Impacts PSU-5 and PSU-7 above. Waste diversion goals are discussed in Impact PSU-9 below.

The General Plan EIR (LSA Associates 2003) states that implementation of General Plan Policy INF.41.P1 would ensure that utilities can be provided to serve the project population within the City.

> In addition, utility providers of electricity, natural gas, telephone services are regulated by the [PUC] and are mandated to extend infrastructure and supply these utilities if service is requested. [As of the date of the General Plan EIR], PG&E [was] implementing the Tri-Valley 2002 Capacity Increase Project [. . .] to address the increased demand for electricity associated with future growth. With the capacity increase project and the ability to transfer electricity as needed from adjacent substations with additional capacity, PG&E has stated that future demand from new housing and jobs projected under the Draft General Plan will be met. PG&E estimates future gas needs by performing a five0year projected growth analysis every three years to assess demand increases and identify the potential need for infrastructure improvements, Performing projected growth analysis on a three-year cycle allows PG&E to anticipated future increases in demand and make necessary improvements to meet demand. PG&E has stated that they have the capacity to meet the future demand for natural gas in the City of Livermore over the next 20 years.

In addition, implementation of General Plan policy OSC 7.1.P1,OSC-7.1.P2, INF-4.2.P1, and INF-4.2.P3 would promote alternative energy sources and energy conservation practices. The General Plan EIR found that no significant impacts associated with energy supply are anticipated to result from General Plan buildout.

Development of the proposed Project would not result in an increase in dependence on nonrenewable energy resources or result in substantial increases in peak and base period use of energy. Under CEQA, a project's impacts would be significant if they result in "wasteful, inefficient, and unnecessary consumption of energy" (PRC 21100[b][3]). All new development would be required to incorporate energy conservation measures in compliance with Title 24 of the UBC. As a result, impacts on energy would be less than significant. No mitigation is required.

Finally, both Comcast and SBC have stated that they anticipate being able to provide cable and telephone services, respectively, to the City and to meet the increased demand associated with General Plan buildout. The General Plan EIR found that there would be no impacts related to the provision of these services.

The proposed Project is consistent with the buildout identified in the General Plan. The Project's impacts on other utilities is considered less than significant. No mitigation is required.

Solid Waste Capacity

Impact PSU-10: Adverse Effects on the Capacity of Solid Waste Landfills—Less than Significant

The proposed Project is expected to generate solid waste from commercial uses at buildout of the Specific Plan designs. As described in the "Environmental Setting" part of this section, Livermore's solid waste is transported and stored in the Vasco Road and Altamont landfills, which have permitted capacity to last approximately 15 to19 years to accept municipal solid waste and construction and demolition debris (Class III disposal site). As such, the landfill would have

ample capacity to accept routine solid waste associated with both the construction and operation of the proposed Project. In addition, as described in the General Plan EIR (LSA Associates 2003), adherence to General Plan policies INF-8.1P1 through A3 and INF-8.2.A1 through A4 (see "Local Regulations" above) would decrease the amount of generation of solid waste, thereby increasing the life span of the Vasco Road Landfill, and the Project would participate in the citywide recycling and source reduction efforts. Based on these considerations and consistencies with the City's General Plan buildout, the proposed Project would not substantially reduce the capacity of the Vasco Road Landfill. Therefore, this impact is considered less than significant. No mitigation is required.

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3.14 Recreation

This section describes the existing setting and potential recreational impacts of the proposed Project, which is composed of the Specific Plan, the Prime Outlets Livermore Valley retail project, and off-site road and infrastructure improvements. Specifically, it describes existing conditions related to recreational opportunities and facilities and summarizes the overall federal, state, and regional/local regulatory framework for recreation that would affect implementation of the proposed Project. This section also analyzes the potential impacts of the proposed Project on recreation and identifies mitigation measures to address significant impacts.

Environmental Setting

Existing Conditions

City of Livermore

The LARPD maintains parks within the city limits, including 27 community parks, four regional parks, and 10 special use parks (City of Livermore 2004a). The City Public Works Department operates the Las Positas Golf Course, located immediately east of the Specific Plan Area (City of Livermore 2004a). The golf course includes an 18-hole course and an executive-level 9-hole course. Other than the golf course, the nearest recreational facilities are between 2 and 2.5 miles from the Specific Plan Area (see Figure 3.14-1).

Neighborhood parks are typically 6 to 10 acres in size and serve residents within a 0.75- to 1-mile radius. This equates to one park per 3,000 to 5,000 Livermore residents. The parks do not have permanent restrooms or sports lighting, and they typically include open play fields, small picnic areas, and safe toddler play areas.

Arroyo Las Positas Multiuse Trail

The Arroyo Las Positas multiuse trail, located within Livermore, is used by recreational bicyclists, equestrians, walkers, and joggers. Several reaches of the Arroyo Las Positas trail have been constructed in the Springtown area in eastern Livermore, north of I-580. An existing asphalt trail also extends along the Arroyo Las Positas south of I-580 from the Las Colinas overpass to near Portola Avenue. From Portola Avenue westward, there is no dedicated trail to Isabel Avenue along the Arroyo Las Positas.

Livermore to Pleasanton Trail Connector

A regional trail is planned to run from Jack London Boulevard at Isabel Avenue to El Charro Road and then westward to Pleasanton. The City of Pleasanton's Arroyo Mocho trail ultimately would connect to the regional trail from

Livermore, but the portion of the trail from the eastern Pleasanton city limits to El Charro Road has not yet been constructed and is dependent on the approval and timing of the Staples Ranch project (Ventura pers. comm.). However, the trail ultimately would connect the City of Livermore's trail system to the City of Pleasanton's trail system.

The Livermore to Pleasanton Arroyo Trail Connection Initial Study/Mitigated Negative Declaration (Jones & Stokes 2006c) evaluated the impacts of the trail connection. The Arroyo Trail is an independent project that has already been approved. The proposed Project includes a regional multiuse trail that ultimately would have a 25-foot right-of-way with a 2-foot shoulder, 8-foot decomposed granite equestrian trail, 3-foot separation, 10-foot paved trail, and another 2-foot shoulder and would connect to the City of Pleasanton's Arroyo Mocho trail. This would modify the approved Arroyo Trail design by changing its location to conform to the selected east-west roadway extension options, making it wider and paving the trail. The impacts of this change are included in this EIR.

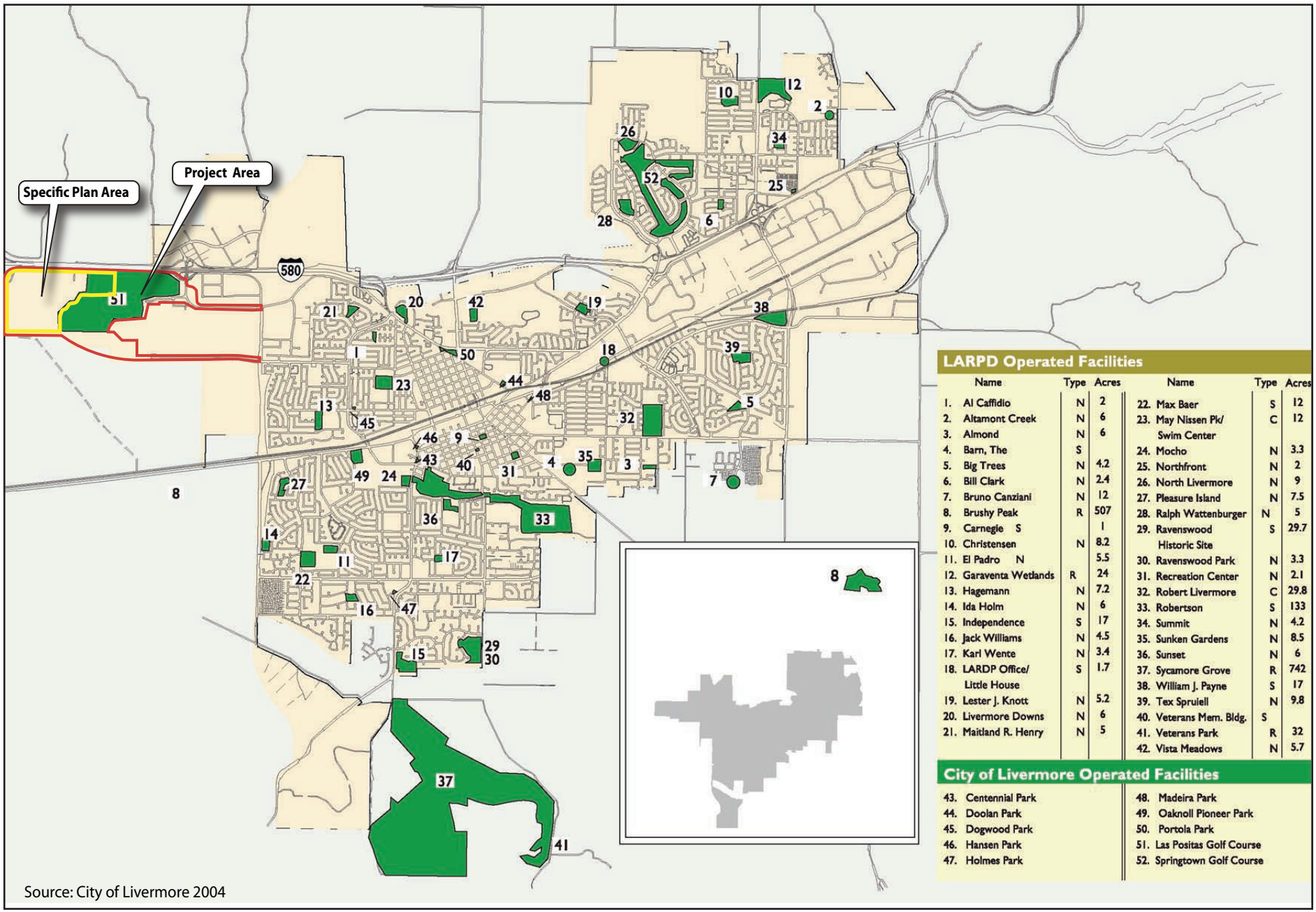
Bikeways in Livermore and Pleasanton

Existing bikeways can be found along the following roadways within or adjacent to the Project Area:

- Class I multiuse trail on Isabel Avenue from East Jack London Boulevard southward to Vineyard Avenue;
- Class II bike lanes on Isabel Avenue from Vineyard Avenue southward to Vallecitos Road;
- Class II bike lanes on East Jack London Boulevard, east of Isabel Avenue;
- Class II bike lanes on North Canyon Parkway from Collier Canyon Road to Airway Boulevard, north of I-580;
- Class II bike lanes along Stoneridge Drive in Pleasanton; and
- Class I multiuse trail in Pleasanton along the Arroyo Mocho from the eastern city limit to I-680.

East Bay Regional Parks District

The nearest regional parks are Brushy Peak and Del Valle. Brushy Peak Regional Preserve is owned and maintained by the EBRPD and the LARPD. The preserve is approximately 2,000 acres and is located approximately 7 miles northeast of the Specific Plan Area northeast of Livermore. Del Valle Regional Park is operated by the EBRPD and is located approximately 12 miles southeast of the Specific Plan Area south of Livermore and contains facilities for active recreation associated with the reservoir and passive recreation on trails in the adjacent area.



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Figure 3.14-1
Parks and Recreational Facilities in the City of Livermore

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Regulatory Setting

City of Livermore

General Plan

Action CIR-3.3-A2 states that the City will develop bicycle routes and multiuse trails in accordance with the City's adopted master plan for a bikeway and trails network.

The following objectives and policies are described in the City of Livermore General Plan (City of Livermore 2004a).

> **Objective INF-3.3:** Maintain creeks and arroyos in as natural a state as possible, while maintaining the health and safety of residents, providing flood control, preserving habitat and providing recreational use.
>
> **Policy:**
>
> **P3.** Recreational opportunities adjacent to the arroyos and creeks shall be incorporated where possible. Primarily bikeways and trails shall be located adjacent to the arroyo and creek corridors as outlined in a master plan prepared for bikeways and trails.
>
> **Objective OSC-5.4:** Maintain and enhance public access to Livermore's unique natural resources.
>
> **Policies**:
>
> **P1.** The City shall continue to encourage public access to, and maintenance of, existing recreational trails in the Planning Area.
>
> **P2.** Recreational access to the open space surrounding the City shall be encouraged to the extent that it is compatible with provisions of the Land Use Element.

Bikeways and Trails Master Plan

The following goals and policies are described in the City's Bikeways and Trails Master Plan (Wilbur Smith Associates and 2M Associates 2002) and are applicable to the analysis of the proposed Project.

> **Goal 1:** Develop a comprehensive bikeway and trail system as a viable alternative to the automobile for all trip purposes in order to maximize the number of daily trips made by non-motorized means for all residents of all abilities.
>
> **Policies:**
>
> **P1.2.** Provide connectivity between the on-street bikeways and multi-use trail segments of the existing and proposed system.

P1.3. Develop an interconnected local and regional trail network that is safe and accessible for different modes and users of all abilities, utilizing existing trail easements and alignments, where possible.

P1.5. In all new development projects, include trail and bikeway facilities to facilitate on-site circulation for non-motorized modes of travel, on-site bicycle parking and connections to the proposed system.

P1.6. Develop a multi-use trail and bikeway system that enhances safety and convenience of walking and bicycling to work and school as means to reduce dependence on the automobile and to improve air quality.

Goal 2: Consider bicycle, pedestrian, and equestrian access in all aspects of City Planning and coordinate with other agencies to improve non-motorized access within the City of Livermore and surrounding regional areas and facilities.

Policy:

P2.4. Ensure that new development and redevelopment maximize the potential for bicycle and pedestrian trips consistent with the Bikeways and Trails Plan.

Goal 3: Provide the related facilities and services necessary to allow bicycle, pedestrian, and equestrian travel to assume a significant role as a local alternative mode of transportation and recreation.

Policy:

P3.4. New commercial and industrial development shall provide a variety of support facilities such as bike racks and shower/locker facilities.

Goal 5: Maintain all roadways and multi-use trails so that they provide safe and comfortable bicycling, walking, and equestrian conditions.

Impact Analysis

Thresholds of Significance

The proposed Project would have a significant impact on recreation if it would:

- substantially increase demand for neighborhood parks, regional parks, or recreational facilities that would accelerate their physical deterioration, or decrease the quality of the facilities or users' experience; or
- result in the removal of a neighborhood park, regional park, recreational facility, or publicly owned open space.

Approach and Methodology

Information about existing conditions regarding recreation was gathered from:

- the LARPD;
- the Alameda County General Plan (Alameda County 2002);
- the General Plan (City of Livermore 2004a);
- the General Plan EIR (LSA Associates 2003);
- the East Bay Regional Parks District Master Plan (East Bay Regional Parks District 1997);
- other EIRs for projects in the area;
- information gathered during a site visit on September 25, 2006; and
- a review of preliminary project plans.

Existing recreational opportunities and facilities were identified based on city maps in the City of Livermore General Plan (City of Livermore 2004a). No recognized federal, state, or county facilities were identified in the study area. Therefore, this section only addresses potential impacts associated with City-owned facilities within the Project Area. This impact analysis describes the impacts on recreation associated with the implementation of the proposed Project.

Impacts and Mitigation Measures

Impact REC-1: Change in Demand for Neighborhood Parks, Regional Parks, or Recreational Facilities—Beneficial Impact

Because the Project consists primarily of commercial and recreational uses, it would not directly or significantly result in the increased use of or the need for new parks or recreational facilities. As the development allowed throughout the Specific Plan Area would not include any residential uses, standards for adequate provisions of park and recreation facilities per additional population do not apply. Nevertheless, the Specific Plan outlines opportunities and associated policies for the provision of minimal public facilities on the open space parcels located on the northern side of the Arroyo Las Positas.

Open space within the Specific Plan Area makes up approximately 97 acres of the 250-acre Specific Plan Area. Approximately 46 acres of open space located north of the Arroyo Las Positas would provide small picnic areas and benches to allow for gathering and resting spots. The approximately 35-acre parcel south of the Arroyo Las Positas would remain in passive open space.

Implementation of the following Specific Plan goal and policies would create a beneficial impact on residents of Livermore and surrounding areas by providing

passive recreational opportunities, bike lanes on Project Area roadways, and a regional multiuse trail for public use.

Policy:

P2.2.1. Provide passive recreation opportunities within the City-owned open space areas, such as small gathering spaces and trails. Active recreation uses that concentrate more than 50 people per acre are not permitted. Some relocations of Los Positas Golf Course may occur, if necessary, to accommodate the Plan's infrastructure requirements.

Goal 4.3: Newly constructed roadways should accommodate bicycle and pedestrian traffic in order to provide transportation alternatives to and within the Specific Plan.

Policies:

P4.3.1. Construct a section of the regional multi-use trail along Arroyo Las Positas, which will eventually connect the City of Livermore's existing trail system to the east with the City of Pleasanton's multi-use trail system on the west side of El Charro Road.

P4.3.2. Provide Class II bike lanes on City streets, where appropriate, throughout the Plan Area.

A plan for a regional multiuse trail has been adopted by the City to connect the City's trail system to that in the City of Pleasanton. The regional multiuse trail will follow the Arroyo Las Positas to the east, cross over the Arroyo, and continue southeast to link up with the rest of the regional bike network. Multiuse trails also will connect the regional trail to the proposed Jack London/Airway Boulevard at its signalized intersections to facilitate safe crossing opportunities for its users. Direct access to this trail from Jack London/Airway Boulevard would be provided along connections from the proposed Jack London/Airway Boulevard intersections with either Road A (Airway Boulevard Extension option) or both Road A and Road B (Jack London Boulevard Extension option). The proposed Project would be compatible with the planned multiuse trail but would change the trail to be paved and widened and would change the planned location of portions of the trail. If the proposed Jack London Boulevard Extension option is selected, the regional multiuse trail would be shifted farther southeast of the Arroyo Las Positas crossing. As part of the proposed Project, the approved Arroyo Trail also would be realigned to follow the south side of the existing Jack London Boulevard rather than the north side as was evaluated in the Livermore to Pleasanton Arroyo Trail Connection Initial Study/Mitigated Negative Declaration (Jones & Stokes 2006c). Nonrecreational impacts associated with the realignment, widening and paving of the trail are addressed in other sections of this EIR.

Other impacts, related to increased demand for recreational facilities, resulting from the Prime Outlets Livermore Valley retail project, the Jack London/Airway Boulevard roadway extension, and other off-site infrastructure improvements

would not be uniquely different from those arising from implementation of the Specific Plan itself.

Because the proposed Project would not create an increased demand for recreational facilities but would provide additional recreational facilities, a beneficial impact would occur. No mitigation is required.

Impact REC-2: Construction or Operational Impacts on a Neighborhood Park, Regional Park, Recreational Facility, or Publicly Owned Open Space—Less than Significant with Mitigation

A golf driving range is located on the Sywest property. This property would eventually be developed with commercial uses as a result of Specific Plan implementation. Although the future loss of the 21-acre driving range would result in a negative impact to recreational facilities in the Specific Plan Area, the Las Positas Golf Course includes a driving range that would remain available to the public. On balance with the addition of 97 acres of active and passive open space in the Specific Plan Area, this impact is considered less than significant.

The Las Positas Golf Course is located adjacent to the Specific Plan Area. As described in further detail in Chapter 2 of this EIR, reconfiguration of the course would be required under either east-west roadway extension option to maintain a complete 18-hole championship course and a nine-hole executive course. The Airway Boulevard Extension option would likely require reconfiguration of 8 championship holes and 2 executive holes, while the Jack London Boulevard Extension option likely would require the reconfiguration of 3 championship holes and 2 executive holes. The proposed Project includes a conceptual golf course redesign plan and construction of relocated holes (see Figures 2-11 and 2-12). Reconfiguration could prevent the full use of the course for one to two years during construction and would cause, at a minimum, temporary partial loss of a public recreation facility. This is considered a short-term significant impact. Implementation of Mitigation Measure REC-2 would allow for the continued use of portions of the facility during the reconfiguration and would reduce this impact to a less-than-significant level. It should be noted that this impact analysis evaluates recreational experience only and not the physical impacts of redesign of the golf course, which are evaluated in the relevant chapters of this EIR.

Mitigation Measure REC-2: Maintain Partial Public Golf Course Availability during Reconfiguration

During reconfiguration of the Las Positas Golf Course, the City will maintain an 18-hole active-play course open to the public, as feasible, to allow the continued partial use of the facility.

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3.15 Transportation and Traffic

This section summarizes the transportation and traffic analysis prepared by Dowling Associates for the City of Livermore (Dowling Associates 2006) and discusses the traffic and circulation impacts of the proposed Project on the transportation system in the Project Area and the traffic study area, which includes the Project Area and other adjacent areas in neighboring cities and unincorporated Alameda County. Transportation and traffic conditions were analyzed under the baseline, or near-future (2008), and cumulative, or long-term (2030), conditions. Near-future impacts are discussed in this section. Cumulative impacts are discussed in Chapter 4, "Other CEQA Considerations."

The transportation systems evaluated in this analysis include vehicular traffic, transit services, bicycle and pedestrian facilities, and parking, which are described below under "Environmental Setting." The methodology used to evaluate potential impacts of the proposed Project is discussed under "Transportation/Traffic Methodology." Transportation and circulation, transit, bicycle and pedestrian, and parking impacts generated by the Project and its effects on these issue areas are described under "Impacts and Mitigation Measures." Detailed tables of traffic data and analysis results are located in Appendix E. Long-term setting and impact conditions (cumulative) also are described in Chapter 4, "Other CEQA Considerations."

For the purposes of this analysis, the City established specific baseline (2008) Project scenarios. A summary of these scenarios is given here to provide a context for the discussion of existing transportation/traffic conditions.

- Existing conditions 2006 (no project).
- Future baseline conditions 2008 (no project).
- Future baseline conditions 2008 plus Prime Outlets Livermore Valley project with partial Jack London Boulevard Extension option.
- Future baseline conditions 2008 plus full Specific Plan Area buildout with Jack London Boulevard Extension option.
- Future baseline conditions 2008 plus full Specific Plan Area buildout with Airway Boulevard Extension option.

A detailed description of these scenarios is given under the "Transportation/Traffic Methodology" section to provide the context for the impact analysis.

Environmental Setting

Study Area

The traffic study area includes the Specific Plan Area; the Project Area; and transportation facilities in the cities of Livermore, Dublin, and Pleasanton; as well as roadways owned and operated by the State of California (Caltrans) and Alameda County (see Figure 3.15-1).

The Specific Plan Area is approximately 250 acres and is bounded by I-580 on the north, El Charro Road on the west, active mining quarries and undeveloped quarry land to the south, and Las Positas Golf Course and Livermore Municipal Airport to the east. The Project Area is located in eastern Alameda County on the western edge of Livermore's UGB in close proximity to the cities of Pleasanton and Dublin. It is located about 3.5 miles from downtown Livermore.

Within the vicinity of the Project Area are several major developments and operations, including quarry lands to the south and the Livermore Water Reclamation Plant and Livermore Municipal Airport to the east.

Pleasanton is preparing to annex the area located west of El Charro Road for the Staples Ranch development, a senior housing, recreational area, and auto mall project that is currently in the EIR process. Expansion of surface mining operations in quarry lands located directly south of the Specific Plan Area has been proposed.

Existing Roadway Facilities

Regional vehicular access to the Specific Plan Area is provided primarily by the I-580/El Charro Road–Fallon Road interchange. Local street access is provided by way of El Charro Road (which becomes Fallon Road in Dublin north of I-580) and Freisman Road. Trucks from the quarry lands make up a large percentage of existing traffic on El Charro Road. There are currently no facilities for bicyclists, pedestrians, or transit in the immediate Project Area. The following is a detailed description of roadways in close proximity to the Project Area. On-street parking is not allowed on any roadways listed unless otherwise noted.

Interstate 580

I-580 is an eight-lane, east-west freeway carrying from 187,000 to 193,000 average daily vehicles and from 12,600 to 13,000 peak-hour vehicles along the segment from Airway Boulevard to El Charro Road (Caltrans 2004). Trucks account for about 11% of the average daily vehicles in this segment. The freeway is divided by a wide median that runs the length of the corridor. The interchanges of El Charro Road–Fallon Road and Airway Boulevard (SR 84) cross I-580 as overpasses. Several planning and environmental studies are

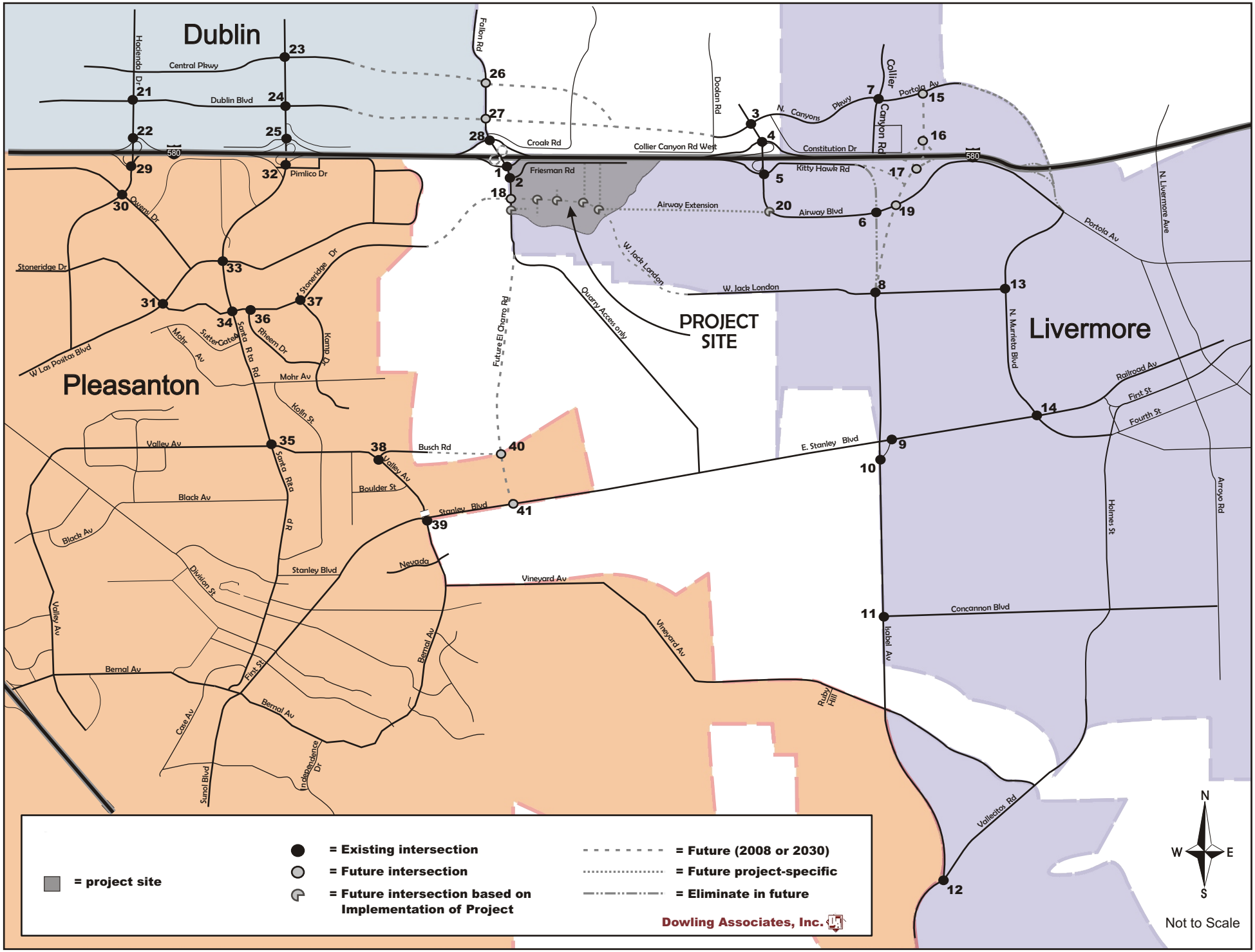


Figure 3.15-1 Traffic Study Area and Intersections (1-41)

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currently under way for reconfigurations along the I-580 corridor. These proposed changes include high occupancy vehicle (HOV) lanes, high occupancy toll (HOT) lanes, auxiliary lanes, ramp metering, preservation of right-of-way for a rail corridor in the median, truck climbing lanes, and improvements to the I-580/I-680 interchange.

State Route 84

SR 84 is a regional north-south highway near the western edge of Livermore and has its northern terminus at the I-580 junction with Airway Boulevard. Average daily traffic (ADT) is about 47,000 near I-580, of which trucks account for 2.77% (Caltrans 2004). From I-580 to Kitty Hawk Road, SR 84/Airway Boulevard is a three-lane road with a 45 mile-per-hour (mph) speed limit, a shared turn-lane median, and limited on-street parking. From Airway Boulevard to Jack London Boulevard, SR 84/Kitty Hawk Road is a four-lane roadway with a speed limit of 40 mph that contains a raised median for most of the segment. From Jack London Boulevard south, SR 84/Isabel Avenue is a two-lane roadway, with a 50 mph speed limit, divided by a painted median. South of Livermore, SR 84 becomes a two-lane highway that connects to I-680 in Sunol and continues through Fremont and across the Dumbarton Bridge to San Mateo County. Planning and environmental studies are currently under way for widening sections of SR 84 to four or six lanes, upgrading SR 84 between I-580 and I-680 to expressway standards, and constructing a new I-580 interchange at Isabel Avenue.

El Charro Road

El Charro Road is a two-lane, north-south roadway that becomes Fallon Road from the I-580 overpass north into Dublin. South of Freisman Road, the roadway is privately owned and is used predominantly by trucks accessing the quarries. However, Alameda County has received irrevocable offers to dedicate the segment of El Charro Road between I-580 and the Arroyo Las Positas to Alameda County for use as a public road. El Charro Road is planned to be an arterial roadway extending between I-580 and Stanley Boulevard, in Pleasanton's general plan.

Fallon Road

Fallon Road is a two-lane, north-south roadway in Dublin from I-580 north. As part of an approved project, at the interchange of I-580 the freeway ramps will be signalized and reconfigured to include partial loops. The roadway will be widened across the interchange to Antoine Way to a four-lane divided arterial by 2008, and it will be widened to six lanes and extended to Tassajara Road by 2030.

Freisman Road

Freisman Road is a two-lane, east-west, 1-mile-long roadway that terminates at a privately owned parcel and provides access to several agricultural properties and a handful of single-family residences. Land uses along this road are primarily agricultural, open space, and a golf driving range.

West Jack London Boulevard

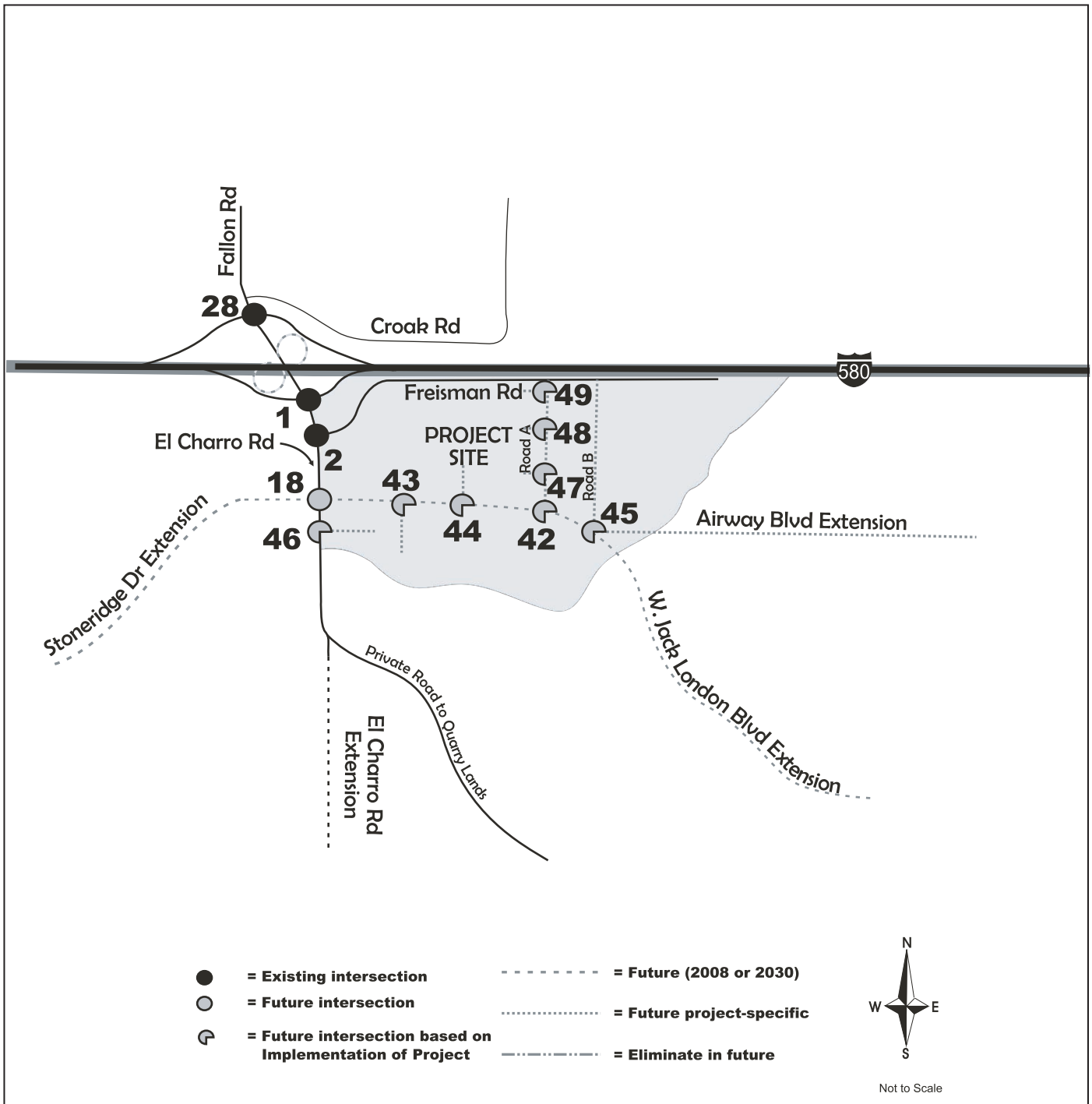
West Jack London Boulevard is a two-lane, east-west roadway that is just under 1 mile long, currently terminating at the Livermore Amador Valley Transit Authority (LAVTA) bus storage yard. It connects to Kitty Hawk Road–Isabel Avenue and East Jack London Boulevard. The roadway borders Livermore Municipal Airport, located to the north, and the Oaks Business Park and undeveloped, privately owned quarry lands within unincorporated Alameda County to the south. Portions of West Jack London Boulevard are being widened to a four-lane divided arterial in conjunction with development of the Oaks Business Park. The City's General Plan Circulation Element (City of Livermore 2004a) identifies the extension of Jack London Boulevard from Isabel Avenue to El Charro Road and the ultimate widening of the roadway to four lanes.

Club House Drive and Terminal Circle

Club House Drive is a two-lane, 0.4-mile-long roadway, providing access from Airway Boulevard (SR 84) to the Las Positas Golf Course clubhouse. Terminal Circle is a two-lane, 0.3-mile-long roadway, providing access from Airway Boulevard (SR 84) and Club House Drive to the Livermore Municipal Airport. On-street parking is permitted on this roadway segment.

Study Area Intersections and Access Points

A total of 41 intersections (1–41) and eight access points (42–49) were studied. Of the eight access points, Access Points 42, 43, and 45 as identified in Table 3.15-1 below are also intersections. Table 3.15-1, below summarizes these intersections and access points. Figures 3.15-1 and 3.15-2 depict the locations of the study intersections and access points within the study area.



Source: Dowling Associates, Inc.

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Figure 3.15-2
Study Area Access Points (42-49)

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Table 3.15-1. Study Intersections

Intersection/ Access Point	Location
Study Area Intersection	
1	El Charro Road at I-580 eastbound ramps
2	El Charro Road at Freisman Road
3	Airway Boulevard at North Canyons Parkway
4	Airway Boulevard (SR 84) at I-580 westbound ramps
5	Airway Boulevard (SR 84) at I-580 eastbound ramps
6	Airway Boulevard (SR 84) at East Airway Boulevard–Kitty Hawk Road
7	Collier Canyon Road at North Canyons Parkway
8	Isabel Avenue (SR 84) at Jack London Boulevard
9	Isabel Avenue (SR 84) at East Stanley Boulevard offramp (north)
10	Isabel Avenue (SR 84) at Stanley Boulevard onramp (south)
11	Isabel Avenue (SR 84) at Concannon Boulevard
12	East Vallecitos Road (SR 84) at Isabel Avenue
13	Murrieta Boulevard at East Jack London Boulevard–Pine Street
14	Murrieta Boulevard at East Stanley Boulevard
15	Isabel Avenue–Campus Drive at Portola Avenue [1]
16	Isabel Avenue (SR 84) at I-580 westbound ramps [1]
17	Isabel Avenue (SR 84) at I-580 eastbound ramps [1]
18	El Charro Road at West Jack London Boulevard [1]
19	Isabel Avenue (SR 84) at Airway Boulevard [1]
20	Airway Boulevard at Airway Extension [2]
21	Hacienda Drive at Dublin Boulevard
22	Hacienda Drive at I-580 westbound ramps
23	Tassajara Road at Central Parkway
24	Tassajara Road at Dublin Boulevard
25	Tassajara Road at I-580 westbound ramps
26	Fallon Road at Central Parkway [1]
27	Fallon Road at Dublin Boulevard [1]
28	El Charro Road–Fallon Road at I-580 westbound ramps
29	Hacienda Drive at I-580 eastbound ramps
30	Hacienda Drive at Owens Drive
31	West Las Positas Boulevard at Stoneridge Drive

Intersection/ Access Point	Location
32	Santa Rita Road at Pimlico Drive–I-580 eastbound ramps
33	Santa Rita Road at West Las Positas Boulevard
34	Santa Rita Road at Stoneridge Drive
35	Santa Rita Road at Valley Avenue
36	Rheem Drive–Milani Avenue at Stoneridge Drive
37	Kamp Drive–Garden Circle at Stoneridge Drive
38	Busch Road at Valley Avenue
39	Valley Avenue–Bernal Road at Stanley Boulevard
40	El Charro Road at Busch Road [1]
41	El Charro Road at Stanley Boulevard [1]
Study Area Access Points	
42	Road A at Jack London/Airway Boulevard [3]
43	Road C access at Jack London/Airway Boulevard [3]
44	Prime Outlets access at Jack London/Airway Boulevard [3]
45	Road B at Jack London/Airway Boulevard [3]
46	Johnson-Himsl access at El Charro Road [3]
47	Road A at Prime Outlets southerly access[3]
48	Road A at Prime Outlets middle access[3]
49	Road A at Prime Outlets northerly access [3]

Notes:

[1] Planned future intersection

[2] Potential future intersection planned with implementation of the El Charro Specific Plan

[3] Future intersection based on implementation of the El Charro Specific Plan

Source: Dowling Associates, Inc., 2006.

Level of Service Criteria

The level of service (LOS) for baseline and with project conditions were calculated for signalized intersection analyses were conducted using the operational methodology outlined in the HCM (Transportation Research Board, Washington, D.C., 2000, Chapter 16), and as required by the City. This procedure calculates an average stopped delay in seconds per vehicle at a signalized intersection and assigns an LOS designation based upon the delay. The method also provides a calculation of the volume-to-capacity (v/c) ratio of

the critical movements at the intersection. Table 3.15-2 below shows 2000 HCM LOS criteria for signalized intersections.

Table 3.15-2. Highway Capacity Manual Level of Service Criteria, Signalized Intersections

Level of Service (LOS)	Average Delay (seconds/vehicle)	Description
A	$\leq$ 10	Very low delay: This LOS occurs when progression is extremely favorable and most vehicles arrive during a green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.
B	> 10 and $\leq$ 20	Minimal delays: This LOS generally occurs with good progression, short cycle lengths, or both. More vehicles stop than at LOS A, causing higher levels of average delay.
C	> 20 and $\leq$ 35	Acceptable delay: Delay increases due to fair progression, longer cycle lengths, or both. Individual cycle failures may begin to appear at this LOS. The number of vehicles stopping is significant, though many still pass through the intersection without stopping.
D	> 35 and $\leq$ 55	Approaching unstable operation/significant delays: The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high volume / capacity ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.
E	> 55 and $\leq$ 80	Unstable operation/substantial delays: These high delay values generally indicate poor progression, long cycle lengths, and high volume-to-capacity ratios. Individual cycle failures are frequent occurrences.
F	> 80	Excessive delays: This LOS, considered unacceptable to most drivers, often occurs with oversaturation (that is, when arrival traffic volumes exceed the capacity of the intersection). It may also occur at high volume-to-capacity ratios below 1.0 with many individual cycle failures. Poor progression and long cycle lengths may also be major contributing causes to such delay levels.

Source: *Highway Capacity Manual*, Transportation Research Board, Washington, DC, 2000, Chapter 16 (Signalized Intersections).

Unsignalized, or stop-sign-controlled, intersections were analyzed utilizing the operational methodology outlined in the HCM (Transportation Research Board 2000). This methodology determines the LOS by calculating an average total delay in seconds per vehicle for each controlled movement and for the intersection as a whole. An LOS designation is assigned based upon the weighted average control delay per vehicle on the intersection leg with the worst delay at two-way stop-controlled intersections. For all-way stop-controlled intersections, LOS is based upon the weighted average control delay for all intersection legs, similar to the LOS basis for signalized intersections. Table 3.15-3 shows the HCM LOS criteria for unsignalized intersections.

Table 3.15-3. Highway Capacity Manual Level of Service Criteria, Unsignalized Intersections

Level of Service (LOS)	Average Delay (seconds/vehicle)	Description
A	$\leq$ 10	Very low delay
B	> 10 and $\leq$ 15	Minimal delays
C	> 15 and $\leq$ 25	Acceptable delay
D	> 25 and $\leq$ 35	Approaching unstable operation and/or significant delays
E	> 35 and $\leq$ 50	Unstable operation and/or substantial delays
F	> 50	Excessive delays

Source: *Highway Capacity Manual*, Transportation Research Board, Washington, DC, 2000, Chapter 17 (Unsignalized Intersections).

Existing (2006) Traffic Conditions

This section describes traffic volumes and intersection LOS for freeways and local roadways within the study area under the existing conditions (2006) project scenario. This section is included for informational purposes only; the existing conditions are not being used as the "baseline" for determining the Project's impacts. State CEQA Guidelines provide that, normally, the baseline consists of the existing environment at the time the NOP is released for review. However, as described under "Future Baseline (2008) Traffic Conditions," the selected baseline is projected traffic levels within 2 years of publication of the NOP ("near term"). This term was selected as the baseline for impacts because the Prime Outlets Livermore Valley project or the entire proposed Project would be complete by 2008, and using existing (2006) conditions as the baseline also would not take into account road system improvements that will be in place by 2008, as discussed below.

Existing (2006) Freeway Conditions

Existing freeway operations conditions were taken from the 2006 Level of Service Monitoring Report prepared by the Alameda County Congestion Management Agency (ACCMA) (Alameda County Congestion Management Agency 2006b). The ACCMA monitors congestion on freeways in the region by measuring the average travel speed during the p.m. peak period (4 to 6 p.m.). Freeway traffic conditions then are described in terms of LOS, a standard measure for traffic operations on freeways defined by the average travel speed, with LOS A representing free-flow conditions and LOS F representing gridlocked conditions.

According to the ACCMA, traffic speeds of 49 mph or higher on the freeway indicate LOS A through C. At LOS D, traffic operating conditions become unstable, and speeds can drop to as low as 41 mph. At LOS E, there are virtually no usable gaps in the traffic stream, and speeds can drop to as low as 30 mph. Below 30 mph, stop-and-go traffic operations often occur, and the LOS is F.

Existing freeway LOS conditions for eastbound and westbound I-580 within the study area are summarized in Table 3.15-4. A total of eight freeway segments were included in the study area:

- Eastbound I-580—Hacienda Drive to Santa Rita Road (LOS F in the p.m. peak hour),
- Eastbound I-580—Santa Rita Road to El Charro Road (LOS E in the p.m. peak hour),
- Eastbound I-580—El Charro Road to Airway Boulevard (LOS E in the p.m. peak hour),
- Eastbound I-580—Airway Boulevard to Portola Avenue (LOS E in the p.m. peak hour),
- Westbound I-580—Portola Avenue to Airway Boulevard (LOS E in the p.m. peak hour),
- Westbound I-580—Airway Boulevard to El Charro Road (LOS E in the p.m. peak hour),
- Westbound I-580—El Charro Road to Santa Rita Road (LOS E in the p.m. peak hour), and
- Westbound I-580—Santa Rita Road to Hacienda Drive (LOS D in the p.m. peak hour).

Table 3.15-4. Freeway Mainline Operations—Existing Conditions (2006)

Location	A.M. Peak LOS[1]	P.M. Peak LOS[1]
I-580 Eastbound		
Hacienda Drive to Santa Rita Road	A	F
Santa Rita Road to El Charro Road	A	E
El Charro Road to Airway Boulevard	A	E
Airway Boulevard to Isabel Avenue	A	E
I-580 Westbound		
Isabel Avenue to Airway Boulevard	E	A
Airway Boulevard to El Charro Road	E	A
El Charro Road to Santa Rita Road	E	A
Santa Rita Road to Hacienda Drive	D	B

Note:

[1]LOS = level of service

Source: 2006 level of service monitoring, Alameda County Congestion Management Agency, July 2006.

Existing (2006) Roadway Intersection Conditions

One freeway ramp intersection within the study area currently operates at an unacceptable LOS, as shown in Table 3.15-5. This ramp intersection is:

- 1—El Charro Road at I-580 eastbound ramps in the p.m. peak hour.

Two local roadway intersections within the study area currently operate at an unacceptable LOS, as shown in Table 3.15-5. These intersections are:

- 12—East Vallecitos Road at Isabel Avenue in the a.m. peak hour; and
- 13—Murrieta Boulevard at East Jack London Boulevard–Pine Street in the a.m. peak hour.

Each of these intersections is approved for improvements, which are scheduled to be completed by 2008.

Table 3.15-5. Intersection Level of Service Using Highway Capacity Manual (HCM) Existing Conditions (2006)

Signalized Intersections[1]	LOS Threshold	Count Date	A.M. Peak Hour LOS	A.M. Peak Hour Average Delay[2]	A.M. Peak Hour V/C	P.M. Peak Hour LOS	P.M. Peak Hour Average Delay[2]	P.M. Peak Hour V/C
Livermore								
3 Airway Blvd at North Canyons Pkwy	E	2005	B	19.4	0.478	B	10.4	0.457
4 Airway Blvd (SR 84) at I-580 westbound ramps	E	2005	B	18.3	0.647	B	20.0	0.431
5 Airway Blvd (SR 84) at I-580 eastbound ramps	E	2005	D	36.6	0.855	C	31.7	0.574
6 Isabel Ave–Kitty Hawk Rd (SR 84) at Airway Blvd	E	2005	C	26.0	0.841	C	20.7	0.630
7 Collier Canyon Rd at North Canyons Pkwy	Midlevel D	2005	A	9.3	0.339	B	10.2	0.402
8 Isabel Ave (SR 84) at Jack London Blvd	Midlevel D	2005	B	11.5	0.464	B	11.5	0.642
9 Isabel Ave (SR 84) at East Stanley Blvd offramp (north)	Midlevel D	2005	B	19.7	0.697	B	18.3	0.886
10 Isabel Ave (SR 84) at Stanley Blvd onramp (south)	Midlevel D	2005	C	22.5	0.571	C	25.5	0.539
11 Isabel Ave (SR 84) at Concannon Blvd	Midlevel D	2005	C	22.0	0.529	C	25.9	0.740
12 East Vallecitos Rd (SR 84) at Isabel Ave	Midlevel D	2005	**E**	**58.2**	**1.011**	D	43.1	1.012
13 Murrieta Blvd at East Jack London Blvd–Pine St	Midlevel D	2005	**E**	**71.5**	**1.012**	C	31.8	0.491
14 Murrieta Blvd at East Stanley Blvd	Midlevel D	2005	D	43.6	0.900	C	32.0	0.707
15 Isabel Ave–Campus Dr at Portola Ave	E	*Future Intersection*						
16 Isabel Ave (SR 84) at I-580 westbound ramps	E	*Future Intersection*						
17 Isabel Ave (SR 84) at I-580 eastbound ramps	E	*Future Intersection*						
18 El Charro Rd at West Jack London Blvd	Midlevel D	*Future Intersection*						
19 Isabel Ave (SR 84) at Airway Blvd	E	*Future Intersection*						
20 Airway Blvd at Airway Extension	Midlevel D	*Future Project Intersection*						
Dublin								
21 Hacienda Dr at Dublin Blvd	E	Feb-04	C	25.0	0.300	C	25.0	0.424
22 Hacienda Dr at I-580 westbound ramps	E	Jun-04	B	16.3	0.469	B	12.1	0.519
23 Tassajara Rd at Central Pkwy	E	Jun-04	A	3.1	0.275	A	4.0	0.329
24 Tassajara Rd at Dublin Blvd	E	Jun-04	B	16.9	0.267	C	21.1	0.391
25 Tassajara Rd at I-580 westbound ramps	E	Jun-04	B	15.0	0.423	B	15.3	0.454
26 Fallon Rd at Central Pkwy	E	*Future Intersection*						
27 Fallon Rd at Dublin Blvd	E	*Future Intersection*						

Table 3.15-5. Continued

Signalized Intersections[1]	LOS Threshold	Count Date	A.M. Peak Hour LOS	A.M. Peak Hour Average Delay[2]	A.M. Peak Hour V/C	P.M. Peak Hour LOS	P.M. Peak Hour Average Delay[2]	P.M. Peak Hour V/C
Pleasanton								
29 Hacienda Dr at I-580 eastbound ramps	E	2003	B	18.5	0.569	B	18.1	0.581
30 Hacienda Dr at Owens Dr	E	2003	C	20.2	0.362	C	31.8	0.591
31 West Las Positas Blvd at Stoneridge Dr	E	2003	C	24.5	0.325	C	28.3	0.488
32 Santa Rita Rd at Pimlico Dr–I-580 eastbound ramps	E	2003	D	41.4	0.568	C	20.4	0.613
33 Santa Rita Rd at West Las Positas Blvd	E	2003	C	26.1	0.472	C	31.1	0.574
34 Santa Rita Rd at Stoneridge Dr	E	2003	C	27.9	0.739	C	31.2	0.665
35 Santa Rita Rd at Valley Ave	E	2003	D	36.6	0.758	C	34.5	0.773
36 Rheem Dr–Milani Ave at Stoneridge Dr	E	2003	B	13.3	0.166	B	12.1	0.202
37 Kamp Dr–Garden Cir at Stoneridge Dr	E	2003	B	13.3	0.161	A	3.7	0.082
38 Busch Rd at Valley Ave	E	2003	D	35.2	0.931	C	20.9	0.667
39 Valley Ave–Bernal Rd at Stanley Blvd	E	2003	C	26.2	0.760	C	31.7	0.826
40 El Charro Rd at Busch Rd	E	*Future Intersection*						
41 El Charro Rd at Stanley Blvd	E	*Future Intersection*						

Unsignalized Intersections[3]			A.M. Peak-Hour LOS	A.M. Peak-Hour Worst Delay[4]	A.M. Peak-Hour Average Delay[2]	P.M. Peak-Hour LOS	P.M. Peak-Hour Worst Delay[4]	P.M. Peak-Hour Average Delay[2]
1 El Charro Rd at I-580 eastbound ramps[5]	Mid-level D	Oct-06	A	9.7	4.9	*F*	*Overflow*	*Overflow*
2 El Charro Rd at Freisman Rd	None	Oct-06	A	0.0	0.0	A	8.7	2.1
28 El Charro Rd–Fallon Rd at I-580 westbound ramps[5]	E	Oct-06	A	4.2	9.7	B	13.8	0.9

Notes:

LOS = level of service; V/C = volume-to-capacity ratio

[1] Calculations for LOS at signalized intersections are based on weighted average delay.

[2] Weighted average control delay per vehicle in seconds.

[3] Calculations for LOS at side-street stop-controlled intersections are based on the intersection leg with the worst delay, but the weighted average delay was also calculated for reference.

[4] Weighted average control delay per vehicle on the intersection leg with the worst LOS.

[5] Offramp stop-controlled with free right turns, which will be signalized in the future.

Source: TRAFFIX, Dowling Associates, Inc., October 2006.

Future Baseline (2008) Traffic Conditions

This section describes traffic volumes and intersection LOS for freeways and local roadways within the study area under the baseline (2008) conditions project scenario. As described above, the 2008 term was selected as the baseline for impacts because either Prime Outlets Livermore Valley or the entire proposed Project would be complete by 2008, and other road system improvements that will be in place by 2008, described below, would not be taken into account using existing (2006) conditions as the baseline. The following approved and funded roadway improvements are scheduled to be completed before 2009 and therefore were assumed to be implemented under the future baseline (2008) project scenario:

- Dublin Boulevard extension (six lanes) from Keegan Street to Fallon Road;
- Central Parkway extension (four lanes) from Keegan Street to Fallon Road;
- I-580 auxiliary lanes from Santa Rita Road to Airway Boulevard—both directions;
- I-580 ramp metering in both directions at all onramps between Greenville and Hopyard Roads;
- Fallon Road–El Charro Road at the I-580 interchange—installation of partial loop ramps, signalization of ramp intersections, and widening of the overpass (from two lanes to four lanes);
- East Vallecitos Road at Isabel Avenue intersection;
- Murrieta Boulevard at East Jack London Boulevard–Pine Street signal phasing modification;
- Fallon Road widening (from two to four lanes) from I-580 to Antoine Way
- Dublin Boulevard extension (two lanes) from Fallon Road east to Dublin city limits; and
- Central Parkway extension (four lanes) from Fallon Road to Croak Road.

Traffic growth was projected by projecting forward average rates of growth in recent years.

Future Baseline (2008) Freeway Conditions

Baseline (2008) freeway LOS conditions and freeway volumes for eastbound and westbound I-580 within the study area are summarized in Tables 3.15-6 and 3.15-7a and 3.15-7b. Two segments are expected to operate at LOS F under baseline conditions:

- Eastbound I-580—El Charro Road to Airway Boulevard in the p.m. peak hour, and

- Westbound I-580—Airway Boulevard to El Charro Road in the p.m. peak hour.

Future Baseline (2008) Ramp and Roadway Conditions

Freeway ramp intersections are included in Table 3.15-8. In the baseline scenario, all freeway study ramps meet their LOS threshold.

A number of intersections in the study area are expected to be congested under future baseline conditions. Table 3.15-8 summarizes expected LOS at all study intersections. One intersection did not meet the appropriate LOS threshold:

- 13—Murrieta Boulevard at East Jack London Boulevard–Pine Street in the a.m. and p.m. peak hour.

Truck Traffic Conditions

As described earlier, quarry operations are a major land use within the study area and account for heavy truck use and traffic on local roadways. Compatibility of existing and future truck use of local roadways with new land uses under the proposed Project is of concern in relation to vehicular, pedestrian, and bicycle safety within the Project Area. Consequently, the traffic analysis includes detailed information on existing truck traffic volumes within the study area to provide a baseline for comparing potential truck traffic compatibility and safety impacts with and without the proposed Project.

Existing (2006) Truck Traffic Conditions

Some cities establish truck routes that are designated for through traffic. Trucks are directed to travel on certain roadways unless the roadway is a direct connection from the truck route to the truck's origin or destination. Livermore's adopted truck routes are Stanley Boulevard west of Isabel Avenue and all of SR 84. The City of Pleasanton requires all gravel trucks to use the El Charro Road route as the sole access to I-580, as stated under Chapter III, Policy 4, Program 4.3 in the City of Pleasanton's 1996 general plan (City of Pleasanton 1996).

A 12-hour truck count was conducted in October 2006 from 6 a.m. to 6 p.m. on El Charro Road between I-580 and Freisman Road because of the high percentage of trucks at this location. Truck counts were conducted in October because it is typically the busiest month for quarry operations. El Charro Road provides the sole access roadway to I-580 from the quarries located north of Stanley Boulevard in unincorporated Alameda County to the south of the Specific Plan Area. The most common truck types observed were gravel trucks, accounting for 55.8% of all northbound traffic and 60.2% of all southbound traffic in the studied 12-hour period. Trucks accounted for the majority of traffic

Table 3.15-6. Freeway Operations—2008 with Prime Outlets Livermore Valley

Location	Type	Baseline			2008 with Prime Outlets Livermore Valley		
		Volume[1]	Density[2]	LOS[3]	Volume[1]	Density[2]	LOS[3]
I-580 Eastbound—A.M. Peak							
Hacienda Dr to Santa Rita Rd	Weave	6,044	21.1	C	6,094	21.3	C
Santa Rita Rd to El Charro Rd	Mainline	6,476	22.0	C	6,521	22.2	C
El Charro Rd to Airway Blvd	Mainline	6,880	30.2	D	6,829	29.9	D
Airway Blvd to Portola Ave	Mainline	5,573	23.7	C	5,545	23.6	C
I-580 Westbound—A.M. Peak							
Portola Ave to Airway Blvd	Mainline	8,258	41.8	E	8,245	41.6	E
Airway Blvd to El Charro Rd	Mainline	8,651	>45	F	8,565	>45	F
El Charro Rd to Santa Rita Rd	Mainline	7,701	36.1	E	7,662	35.8	E
Santa Rita Rd to Hacienda Dr	Weave	8,276	29.7	D	8,261	29.8	D
I-580 Eastbound—P.M. Peak							
Hacienda Dr to Santa Rita Rd	Weave	9,088	35.3	E	8,967	34.8	D
Santa Rita Rd to El Charro Rd	Mainline	8,351	29.1	D	8,480	29.7	D
El Charro Rd to Airway Blvd	Mainline	9,011	>45	F	9,005	>45	F
Airway Blvd to Portola Ave	Mainline	8,237	41.6	E	8,230	41.5	E
I-580 Westbound—P.M. Peak							
Portola Ave to Airway Blvd	Mainline	5,811	24.8	C	5,840	24.9	C
Airway Blvd to El Charro Rd	Mainline	6,588	28.6	D	6,663	29.0	D
El Charro Rd to Santa Rita Rd	Mainline	6,248	26.8	D	6,306	27.1	D
Santa Rita Rd to Hacienda Dr	Weave	6,579	23.2	C	6,677	23.7	C

Notes:

Significance criteria = Decline to F; if already F, velocity-to-capacity ratio increase by 3%; significant impacts in **bold** (none in this table)

[1] Volume = vehicles per hour (vph)

[2] Density = passenger car per mile per lane (pc/m/ln)

[3] LOS = level of service

Source: Dowling Associates, Inc., 2006.

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Table 3.15-7a. Freeway Operations—2008 Full Project (Jack London Boulevard Extension)

Location	Type	Baseline			2008 Full Project		
		Volume[1]	Density[2]	LOS[3]	Volume[1]	Density[2]	LOS[3]
I-580 Eastbound—A.M. Peak							
Hacienda Dr to Santa Rita Rd	Weave	6,044	21.1	C	6,368	22.3	C
Santa Rita Rd to El Charro Rd	Mainline	6,476	22.0	C	6,910	23.5	C
El Charro Rd to Airway Blvd	Mainline	6,880	30.2	D	6,751	29.5	D
Airway Blvd to Portola Ave	Mainline	5,573	23.7	C	5,661	24.1	C
I-580 Westbound—A.M. Peak							
Portola Ave to Airway Blvd	Mainline	8,258	41.8	E	8,047	39.5	E
Airway Blvd to El Charro Rd	Mainline	8,651	>45	F	8,301	42.3	E
El Charro Rd to Santa Rita Rd	Mainline	7,701	36.1	E	7,722	36.3	E
Santa Rita Rd to Hacienda Dr	Weave	8,276	29.7	D	8,135	29.1	D
I-580 Eastbound—P.M. Peak							
Hacienda Dr to Santa Rita Rd	Weave	9,088	35.3	E	9,245	35.9	E
Santa Rita Rd to El Charro Rd	Mainline	8,351	29.1	D	8,736	30.9	D
El Charro Rd to Airway Blvd	Mainline	9,011	>45	F	8,864	>45	F
Airway Blvd to Portola Ave	Mainline	8,237	41.6	E	8,127	40.3	E
I-580 Westbound—P.M. Peak							
Portola Ave to Airway Blvd	Mainline	5,811	24.8	C	5,848	24.9	C
Airway Blvd to El Charro Rd	Mainline	6,588	28.6	D	6,630	28.8	D
El Charro Rd to Santa Rita Rd	Mainline	6,248	26.8	D	6,581	28.5	D
Santa Rita Rd to Hacienda Dr	Weave	6,579	23.2	C	6,910	24.6	C

Notes:

Significance criteria = Decline to F; if already F, velocity-to-capacity ratio increase by 3%; significant impacts in **bold** (none in this table)

[1] Volume = vehicles per hour (vph)

[2] Density = passenger car per mile per lane (pc/m/ln)

[3] LOS = level of service

Source: Dowling Associates, Inc., 2006.

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Table 3.15-7b. Freeway Operations—2008 Full Project (Airway Boulevard Extension)

Location	Type	Baseline			P.M. Peak Hour		
		Volume[1]	Density[2]	LOS[3]	Volume[1]	Density[2]	LOS[3]
I-580 Eastbound—A.M. Peak							
Hacienda Dr to Santa Rita Rd	Weave	6,044	21.1	C	6,353	22.2	C
Santa Rita Rd to El Charro Rd	Mainline	6,476	22.0	C	6,927	23.6	C
El Charro Rd to Airway Blvd	Mainline	6,880	30.2	D	6,735	29.4	D
Airway Blvd to Portola Ave	Mainline	5,573	23.7	C	5,699	24.3	C
I-580 Westbound—A.M. Peak							
Portola Ave to Airway Blvd	Mainline	8,258	41.8	E	8,286	42.2	E
Airway Blvd to El Charro Rd	Mainline	8,651	>45	F	8,125	40.3	E
El Charro Rd to Santa Rita Rd	Mainline	7,701	36.1	E	7,666	35.8	E
Santa Rita Rd to Hacienda Dr	Weave	8,276	29.7	D	8,126	29.1	D
I-580 Eastbound—P.M. Peak							
Hacienda Dr to Santa Rita Rd	Weave	9,088	35.3	E	9,212	35.6	E
Santa Rita Rd to El Charro Rd	Mainline	8,351	29.1	D	8,644	30.5	D
El Charro Rd to Airway Blvd	Mainline	9,011	>45	F	8,849	>45	F
Airway Blvd to Portola Ave	Mainline	8,237	41.6	E	8,380	43.3	E
I-580 Westbound—P.M. Peak							
Portola Ave to Airway Blvd	Mainline	5,811	24.8	C	5,941	25.4	C
Airway Blvd to El Charro Rd	Mainline	6,588	28.6	D	6,566	28.4	D
El Charro Rd to Santa Rita Rd	Mainline	6,248	26.8	D	6,584	28.5	D
Santa Rita Rd to Hacienda Dr	Weave	6,579	23.2	C	6,897	24.6	C

Notes:

Significance criteria = Decline to F; if already F, velocity-to-capacity increase by 3%; significant impacts in **bold** (none in this table)

[1] Volume = vehicles per hour (vph)

[2] Density = passenger car per mile per lane (pc/m/ln)

[3] LOS = level of service

Source: Dowling Associates, Inc., 2006.

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Table 3.15-8. Peak Hour Intersection Level of Service (2008)

	Intersections	LOS Threshold	Time Period	LOS from 2008 Scenarios: No Project	Prime Outlets Livermore Valley Only	Full Project –Jack London Boulevard Extension option	Full Project – Airway Boulevard Extension option
	Livermore						
1	El Charro Rd at I-580 eastbound ramps	Midlevel D	a.m.	B	C	F	E
			p.m.	A	C	F	F
2	El Charro Rd at Freisman Rd	None	a.m.	A	N/A	N/A	N/A
			p.m.	A	N/A	N/A	N/A
3	Airway Blvd at North Canyons Pkwy	E	a.m.	C	C	C	C
			p.m.	B	B	B	B
4	Airway Blvd (SR 84) at I-580 westbound ramps	E	a.m.	B	B	B	B
			p.m.	B	B	B	C
5	Airway Blvd (SR 84) at I-580 eastbound ramps	E	a.m.	D	D	D	E
			p.m.	C	C	C	D
6	Isabel Ave–Kitty Hawk Rd (SR 84) at Airway Blvd	E	a.m.	E	E	D	D
			p.m.	C	C	C	C
7	Collier Canyon Rd at North Canyons Pkwy	Midlevel D	a.m.	B	B	B	B
			p.m.	B	B	B	B
8	Isabel Ave (SR 84) at Jack London Blvd	Midlevel D	a.m.	B	B	B	C
			p.m.	C	C	C	C
9	Isabel Ave (SR 84) at East Stanley Blvd off-ramp (north)	Midlevel D	a.m.	B	B	B	C
			p.m.	C	C	C	C
10	Isabel Ave (SR 84) at Stanley Blvd on-ramp (south)	Midlevel D	a.m.	C	C	C	C
			p.m.	C	C	C	C
11	Isabel Ave (SR 84) at Concannon Blvd	Midlevel D	a.m.	C	C	C	C
			p.m.	C	C	C	C
12	East Vallecitos Rd (SR 84) at Isabel Ave	Midlevel D	a.m.	C	C	C	C
			p.m.	B	B	B	B
13	Murrieta Blvd at East Jack London Blvd–Pine St	Midlevel D	a.m.	E	E	E	E
			p.m.	D	E	F	F
14	Murrieta Blvd at East Stanley Blvd	Midlevel D	a.m.	C	C	D	D
			p.m.	C	C	C	C
15	Isabel Ave–Campus Dr at Portola Ave	E	a.m.	N/A	N/A	N/A	N/A
			p.m.	N/A	N/A	N/A	N/A

Intersections	LOS Threshold	Time Period	LOS from 2008 Scenarios: No Project	Prime Outlets Livermore Valley Only	Full Project –Jack London Boulevard Extension option	Full Project – Airway Boulevard Extension option
16 Isabel Ave (SR 84) at I-580 westbound ramps	E	a.m.	N/A	N/A	N/A	N/A
		p.m.	N/A	N/A	N/A	N/A
17 Isabel Ave (SR 84) at I-580 eastbound ramps	E	a.m.	N/A	N/A	N/A	N/A
		p.m.	N/A	N/A	N/A	N/A
18 El Charro Rd at West Jack London Blvd	Midlevel D	a.m.	A	B	C	C
		p.m.	B	C	C	C
19 Isabel Ave (SR 84) at Airway Blvd	E	a.m.	N/A	N/A	N/A	N/A
		p.m.	N/A	N/A	N/A	N/A
20 Airway Blvd at Airway Extension	Midlevel D	a.m.	N/A	N/A	N/A	C
		p.m.	N/A	N/A	N/A	C
Dublin						
21 Hacienda Dr at Dublin Blvd	E	a.m.	D	C	D	D
		p.m.	C	C	C	C
22 Hacienda Dr at I-580 westbound ramps	E	a.m.	B	B	B	B
		p.m.	B	B	B	B
23 Tassajara Rd at Central Pkwy	E	a.m.	C	B	B	B
		p.m.	B	B	B	B
24 Tassajara Rd at Dublin Blvd	E	a.m.	C	C	C	C
		p.m.	C	D	D	D
25 Tassajara Rd at I-580 westbound ramps	E	a.m.	B	B	B	B
		p.m.	C	B	B	C
26 Fallon Rd at Central Pkwy	E	a.m.	B	B	C	C
		p.m.	B	C	C	C
27 Fallon Rd at Dublin Blvd	E	a.m.	C	C	C	C
		p.m.	B	C	E	E
28 El Charro Rd–Fallon Rd at I-580 westbound ramps	E	a.m.	B	B	B	B
		p.m.	B	B	B	B
Pleasanton						
29 Hacienda Dr at I-580 eastbound ramps	E	a.m.	B	C	B	B
		p.m.	B	B	B	B
30 Hacienda Dr at Owens Dr	E	a.m.	B	B	B	B
		p.m.	C	C	C	C
31 West Las Positas Blvd at Stoneridge Dr	E	a.m.	C	C	C	C
		p.m.	C	C	C	C

Intersections	LOS Threshold	Time Period	LOS from 2008 Scenarios: No Project	Prime Outlets Livermore Valley Only	Full Project –Jack London Boulevard Extension option	Full Project – Airway Boulevard Extension option
32 Santa Rita Rd at Pimlico Dr–I-580 eastbound ramps	E	a.m.	D	D	D	D
		p.m.	D	D	D	D
33 Santa Rita Rd at West Las Positas Blvd	E	a.m.	C	C	C	C
		p.m.	C	C	D	D
34 Santa Rita Rd at Stoneridge Dr	E	a.m.	C	C	C	C
		p.m.	C	C	C	D
35 Santa Rita Rd at Valley Ave	E	a.m.	D	D	D	D
		p.m.	D	D	D	D
36 Rheem Dr–Milani Ave at Stoneridge Dr	E	a.m.	B	B	B	B
		p.m.	B	B	B	B
37 Kamp Dr–Garden Cir at Stoneridge Dr	E	a.m.	B	B	B	B
		p.m.	A	A	A	A
38 Busch Rd at Valley Ave	E	a.m.	D	D	D	D
		p.m.	C	C	C	C
39 Valley Ave–Bernal Rd at Stanley Blvd	E	a.m.	C	C	C	C
		p.m.	D	D	D	D
40 El Charro Rd at Busch Rd	E	a.m.	N/A	N/A	N/A	N/A
		p.m.	N/A	N/A	N/A	N/A
41 El Charro Rd at Stanley Blvd	E	a.m.	N/A	N/A	N/A	N/A
		p.m.	N/A	N/A	N/A	N/A

Notes:

Significant impact due to not meeting level of service (LOS) standard

Less than significant due to < 5 second delay

Significant impact due to > 5 second delay

Source: Dowling Associates, Inc., 2006.

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(77% in the surveyed 12-hour period, with the remaining 23% made up of other vehicles) in the 12-hour period as well as the a.m. peak hour. Truck traffic was reduced in the p.m. peak hour, especially in the northbound direction.

In addition, 24-hour roadway directional counts of vehicles were conducted during a weeklong period in October 2006 on El Charro Road at Freisman Road to distinguish the contribution of truck traffic within the study area. Vehicle volumes averaged about 3,920 on a weekday and, as shown in the 12-hour counts, consisted primarily of truck traffic from the quarries. Saturday also experienced significant vehicle volumes, perhaps due to quarry-related traffic and access to the golf driving range on Freisman Road, whereas vehicle volumes on Sunday were low.

Truck traffic volumes in the study area are summarized in Appendix E.

Future Baseline (2008) Truck Traffic Conditions

Truck volumes for the baseline modeling conditions were calculated by an extrapolation of existing (2006) truck traffic conditions to planned activity anticipated by 2008. This information is presented under the respective impact analysis discussion in the "Impacts and Mitigation Measures" section below.

Estimated truck traffic generated by the quarries is summarized in Appendix E.

Transit Conditions

The Project Area is not currently served directly by existing transit; however, current and future transit services in the study area and generally in Eastern Alameda County are described below.

Rail Service

The Altamont Commuter Express (ACE) train provides weekday commuter service from Stockton in San Joaquin County to San Jose in Santa Clara County, with a stop in Livermore and Pleasanton. The closest Livermore station is located in downtown at the Wheels Livermore Transit Center, and the Pleasanton station is located near the Alameda County Fairgrounds in the southern part of the city. Four trains are provided in the westbound direction toward San Jose in the morning between 5:30 and 10:30 a.m. from Livermore, and four trains are provided in the eastbound direction toward Stockton in the evening between 1 and 6:30 p.m. ACE also provides an off-peak, evening bus service from Livermore to Stockton at 8:30 p.m.

BART provides heavy-rail, regional transit service to Alameda, San Francisco, Contra Costa, and San Mateo Counties. The closest BART station to the Specific

Plan Area is the Dublin/Pleasanton Station, located about 2.75 miles west in I-580's median. The station is elevated, is accessible from both sides of the freeway and tracks, and is fronted on both sides by bus bays and surface parking lots. BART's direct service from this station includes the Dublin/Pleasanton–SFO/Millbrae line, with trains every 15 minutes during the weekday until 7 p.m. and every 20 minutes during evening weekday times and the weekend. This train line runs until midnight every day, with weekday, Saturday, and Sunday service beginning at 4:15 a.m., 6 a.m., and 8 a.m., respectively. Connections to the Fremont–Richmond and Fremont–Daly City lines can be made at multiple points between the Bay Fair Station in San Leandro and the Lake Merritt Station in Oakland. Connections to the Pittsburg/Bay Point–Daly City line can be made at multiple points between the West Oakland and Daly City Stations.

Planned changes to BART systems in Alameda County include a new station in West Dublin, an expansion of the Fremont line to the south by 5.4 miles to terminate at the Warm Springs district in Fremont, and an Oakland Airport rail connector from the Coliseum Station. Planned changes in Contra Costa County that are in close proximity to East Alameda County include an eBART diesel train connector from Byron to Pittsburg–Bay Point. An extension of BART tracks from Dublin/Pleasanton to Livermore has been studied. The region has agreed to preserve right-of-way along the I-580 corridor for a future BART/rail extension to Livermore. In addition, BART owns land for two potential future stations at Isabel Avenue and Greenville Road. The Regional Rail Plan is a study currently under way to create a blueprint for rail expansion projects in the nine-county Bay Area region and adjacent counties for the next 50 years. This study is considering alternatives that include the expansion of rail service, including BART, commuter rail, high-speed rail, and freight within the region. One potential alignment would include BART along El Charro Road.

Bus Services and Facilities

LAVTA provides its Wheels bus service in Eastern Alameda County, serving Livermore, Pleasanton, and Dublin. Wheels provides bus service for 13 local fixed routes, one regional fixed-route express bus service to eastern Contra Costa County, three locally serving shuttles, 14 school routes, and dial-a-ride paratransit services. Additionally, Wheels is a participating transit provider for the regional All Nighter bus system, providing night-owl hourly bus service from the Bay Fair BART Station to Livermore when BART is not operating. Buses are equipped with front-loading racks that can hold up to three bicycles.

Future prioritized changes to Wheels' bus service include shorter headways and Bus Rapid Transit (BRT) service on Route 10 (the most highly patronized route) and the implementation of express bus service from Livermore to Bishop Ranch. The roadway extension of Jack London/Airway Boulevard to El Charro Road under the proposed Project would make bus routes in the study area feasible and could become a secondary BRT corridor in the future. Possible changes in the Project Area include new bus service if Staples Ranch, a mixed-use residential-commercial development, is constructed on the west side of El Charro Road.

New transit service to the Specific Plan Area would use stops on the Jack London/Airway Boulevard Extension located near proposed signalized intersections under the proposed Project. Other potential changes include an express bus service from Greenville Road at I-580 in eastern Livermore to the Dublin/Pleasanton BART station and direct service from South Livermore to the Dublin/Pleasanton BART station. (Livermore Amador Valley Transit Authority 2003.)

Other bus services in eastern Alameda County include Tri-Delta Transit, providing connections from eastern Contra Costa County to Lawrence Livermore National Laboratory, and San Joaquin Regional Transit, providing connections from Stockton and Modesto to the Dublin/Pleasanton BART station.

The Specific Plan Area is located 1.5 miles from two existing bus stops, one to the west near I-580 at Santa Rita Road–Tassajara Road in Pleasanton, served by Routes 1 and 610, and one to the east near I-580 at Airway Boulevard, served by Route 12. However, neither bus stop is currently accessible to the Specific Plan Area by foot or bicycle because of roadway configurations, manmade barriers, and the Arroyo Las Positas.

Alternative Modes

Bicycle Facilities

Though no bicycle facilities are located near the Specific Plan Area, existing and planned bicycle facilities are contained in the study area. The classification system for bikeways is: Class I, grade-separated trails that are exclusively for nonmotorized access; Class II, bicycle lanes on roadways accompanied by sign designations; and Class III, bicycle routes on roadways designated by signs. The lack of bicycle designations on city streets does not preclude bicycle usage, as they are defined as a vehicle in the California Vehicle Code and subject to the same rules governing motor vehicles. Other facilities for bicyclists may include parking and storage, traffic signal loop detectors, and employee locker/showering facilities.

The Livermore Bikeways and Trails Master Plan, which was adopted in July 2001 and last updated in 2006, contains policies and plans for bicycles. Existing bikeways may be found along the following roadways in the study area.

- Class II bike lanes on Isabel Avenue–Kitty Hawk Road from Airway Boulevard to Jack London Boulevard.
- Class I multiuse trail on Isabel Avenue from Jack London Boulevard to Concannon Boulevard.
- Class I multiuse trail following the Arroyo Mocho east of Isabel Avenue.
- Class I multiuse trail on Stanley Boulevard from Pleasanton's city limit to Isabel Avenue.

- Class II bike lanes on East Jack London Boulevard east of Isabel Avenue.
- Class II bike lanes on North Canyons Parkway from Collier Canyon Road to Doolan Road.
- Class II bike lanes on Central Parkway in Dublin.
- Class II bike lanes along Stoneridge Drive in Pleasanton.
- Class I multiuse trail in Pleasanton along the Arroyo Mocho from the eastern city limit to I-680.
- Class II bike lanes on West Las Positas Boulevard in Pleasanton.

The City of Livermore also uses cameras at vehicle-actuated, signalized intersections at most locations, which can detect the presence of bicycles. Signalized intersections along SR 84 (Isabel Avenue, Vallecitos Road, and Airway Boulevard) use a combination of cameras and in-pavement loop detectors, which can detect the presence of bicyclists. There are no bike parking or storage locations near the Specific Plan Area.

The following bikeway network improvements are proposed in the study area.

- Class II bike lanes on the proposed extension of Isabel Avenue over I-580, from Airway Boulevard to North Canyon Parkway.
- Class I multiuse trail following West Jack London Boulevard's alignment from Isabel Avenue, across El Charro Road, to connect with Pleasanton bikeways along Stoneridge Drive and the Arroyo Mocho.
- Class II bike lanes on North Canyon Parkway west of Airway Boulevard into Dublin.
- Class I multiuse trail aligned with Portola Avenue east of the proposed Isabel Avenue roadway extension.
- Converting existing Class III bike route to Class II bike lanes on Dublin Boulevard in Dublin.
- Class II bike lanes on Tassajara Road in Dublin connecting to Santa Rita Road in Pleasanton.
- Completing the Class I multiuse trail along Stanley Boulevard/First Street in Pleasanton and Livermore.
- Class I multiuse trail extending the Iron Horse Trail from the Alameda County line to the Shadow Cliffs Regional Recreation Area.
- Class II bike lanes along El Charro Road between Stanley Boulevard and Jack London/Airway Boulevard.

Pedestrian Facilities

Pedestrian facilities include walkways (sidewalks, paths, and roadway shoulders), intersection crossing aids (markings, lighting, in-pavement flashers or raised crosswalks, median pedestrian refuges, signalization with visual and audible pedestrian signal heads with actuation, and curb ramps with detectable warnings), landscaping (street trees, buffers between high volume roadways and pathway), and amenities (benches, water fountains, pedestrian-scaled lighting, maps, and directional signage). Additionally, pedestrian activity is encouraged for routine and recreational purposes by providing and maintaining walkway facilities on both sides of all roadways; allowing pedestrians to cross all intersection legs; orienting buildings toward walkways rather than parking lots; and providing easy, continuous, direct paths to and from activity centers. Pedestrian activity is discouraged by locating dead spaces (fences, blank walls, and surface parking) next to walkways, designing limited access roadways (cul-de-sacs and long stretches of road with no intersections) with no pedestrian access points**,** and designing high-volume or high-speed roadways with inadequate walkway widths and no buffers.

No pedestrian facilities are currently located near the Specific Plan Area, and walking access to the site from Pleasanton, Dublin, or other points in Livermore is difficult. Most roadways in the proposed Project's vicinity do not contain pathways for pedestrian access or prohibit pedestrians altogether. I-580 is a freeway that prohibits pedestrian activity. El Charro Road, Fallon Road, and Freisman Road do not have sidewalks or shoulders for pedestrians.

Pedestrian pathways along roadways east of the Specific Plan Area are typically discontinuous or are located only on one side of the street. These roadways include Airway Boulevard, Kitty Hawk Road, Isabel Avenue, West Jack London Road, Terminal Circle, and Golf Club Road. Pedestrians are prohibited from crossing Airway Boulevard at the I-580 westbound ramps and are given no provisions for crossing Airway Boulevard from Kitty Hawk Road (west) to Kitty Hawk Road (east). At the intersection of Kitty Hawk Road (east) and Airway Boulevard, pedestrians are prohibited from crossing the eastern and southern leg of the intersection. Land uses along roadways are oriented toward motorists rather than pedestrians, and long stretches of impermeable, paved areas (surface parking lots and airport runways) border pedestrian pathways. There are long walking distances between intersections, which limit nonmotorized access to and from surrounding neighborhoods.

Parking

The parking conditions within the study area are discussed above under "Existing Roadway Facilities." Existing parking is provided at the existing driving range on the Sywest property and at the residential compounds on the Children's Hospital property. There are no parking spaces in other parts of the Specific Plan Area.

Regulatory Setting

Applicable state, county, and municipal transportation/traffic plans and regulations that apply to the study area are summarized below. Streets in the study area are generally under the jurisdictions of the Cities of Livermore, Dublin, and Pleasanton, and Alameda County, except state highways that are under Caltrans' jurisdiction.

State Regulations

Caltrans is responsible for planning, designing, constructing, and maintaining all interstate freeways and state routes. I-580 and SR 84 (operating as Vallecitos Road–Isabel Avenue–Airway Boulevard) are roadways in the study area that are under Caltrans' jurisdiction. Caltrans requirements are described in their Guide for the Preparation of Traffic Impact Studies (Caltrans 2001), which covers the information needed for Caltrans to review the impacts on state highway facilities; including freeway segments, on- and offramps, and signalized intersections.

Regional Transportation Agencies and Plans

Metropolitan Transportation Commission/Alameda County Congestion Management Agency

The Metropolitan Transportation Commission is the regional organization responsible for prioritizing transportation projects in a Regional Transportation Improvement Program (RTIP) for federal and state funding. The process is based on evaluating each project for need, feasibility, and adherence to federal transportation policies and to the ACCMA Congestion Management Program (CMP). The CMP requires each jurisdiction to identify existing and future transportation facilities that would operate below an acceptable service level and provide mitigation where future growth would degrade that service level on the Metropolitan Transportation System (MTS) roadways and transit systems. Designated MTS roadways in the vicinity include I-580, I-680, SR 84, First Street between I-580 and Inman Street, Stanley Boulevard, Santa Rita Road, Livermore Avenue between East Avenue and I-580, and Holmes Street.

Alameda County Transportation Authority

The Alameda County Transportation Authority (ACTA) was created to administer Measure B, Alameda County's half-cent transportation sales tax, approved by the voters in 1986. Voters reauthorized the half-cent sales tax in November 2000, and the Alameda County Transportation Improvement Authority (ACTIA) was created to deliver the new projects and programs while ACTA finalizes the projects promised to the voters in 1986.

Approximately 60% of the ACTIA Measure B net sales tax funds are allocated to the local jurisdictions (cities, the County, transit agencies, and paratransit providers in Alameda County). The remaining 40% of the funds are used to

leverage additional funding for a variety of projects, including the addition of auxiliary lanes on I-580, the construction of the Isabel Avenue–SR 84/I-580 interchange, and I-580 corridor/BART to Livermore Study.

The ACTA Expenditure Plan lists the projects and programs approved in 1986 over the life of the plan, and the ACTIA Expenditure Plan describes the projects and programs for the next 20 years provided by the reauthorization of Measure B. The ACTIA Strategic Plan is a document that is updated every year to provide additional detail on the plan elements.

The Strategic Plan is updated annually to allocate funds to Measure B programs and projects. Funds for programs are estimated for the fiscal year in the Strategic Plan and allocations to capital projects are considered for the fiscal year to ensure that funds will be available when they are needed. Funding availability at both the state and federal levels affects capital project delivery.

Tri-Valley Transportation Council

The Tri-Valley Transportation Council (TVTC) was created upon the passage of the Measure C initiative to address area-wide transportation issues in locations straddling the two counties of Alameda and Contra Costa, which include the cities of Livermore, Dublin, Pleasanton, Danville, and San Ramon, as well as some unincorporated areas of each county. TVTC produced the 1995 Tri-Valley Transportation Plan/Action Plan for Routes of Regional Significance, which identifies transportation service objectives and funding priorities for designated roadways.

The plan establishes shared traffic service objectives and presents a list of eleven (11) high-priority transportation improvement projects to ease regional traffic congestion.

- I-580/I-680 interchange “Direct Connector” ramps (completed).
- Alcosta Boulevard/I-680 interchange improvements (completed).
- I-680 auxiliary lanes from Bollinger Canyon Road to Diablo Road.
- SR 84 I-580 to I-680 expressway.
- West Dublin BART station.
- I-580 HOV lanes.
- I-680 HOV lanes (Sunol).
- I-580 Foothill Road interchange.
- Crow Canyon Road improvements (Alameda County).
- Vasco Road safety improvements.
- Express Bus Service LAVTA.

The Tri-Valley Transportation Development (TVTD) fee on new developments will partially fund the improvements. It is expected that the remainder of the

funding will come from other local, state, and federal funding sources. This fee, which was adopted by the seven TVTC jurisdictions in 1998, and amended through June 2006, applies to all developments in the Tri-Valley. As of June 2006, fee amounts were $1,818 per new residential dwelling unit, $1.27 per gross square foot of retail building space, and $756 per average a.m./p.m. peak trip. The fee is applied and collected by all of the TVTC jurisdictions, including the City of Livermore. This regional fee is estimated to generate approximately $70 million over the term of the program.

Alameda County Transportation Plans

The Alameda County East County Area Plan, adopted in 1994 and last amended in 2000; the Bicycle Master Plan for Unincorporated Areas, updated in 2006; and the Pedestrian Master Plan for the Unincorporated Areas, adopted in 2006, provide guidance for transportation facilities in the unincorporated areas of Alameda County. Existing roadways in the unincorporated areas in the study area include all of El Charro Road and Stanley Boulevard from Pleasanton's city limits to Isabel Avenue in Livermore.

The Alameda Countywide Bike Plan, adopted in 2001 and last updated in 2006 by the ACCMA, contains policies, programs, and locations of existing and planned countywide bicycle facilities.

City of Livermore

The City's 2003–2025 General Plan was adopted in 2004. The Circulation Element provides the policy framework for the regulation and development of transportation systems, balancing demands for moving people and goods through the city while revitalizing the downtown and limiting nonlocal, cut-through traffic on the roadway network. The General Plan contains overall goals and specific recommendations for facilitating traffic circulation, maintaining an acceptable level of service at signalized intersections, traffic demand management programs, parking management, and improving transit service and facilities for nonmotorized transportation. Specific policies relevant to the proposed Project are discussed under "Thresholds of Significance" below.

The City adopted a Traffic Impact Fee (TIF) program in 1988 and updated it most recently in 2004 to charge new development the cost of transportation improvements identified in the 2003–2025 General Plan necessary to mitigate the impacts of new development. The TIF program contains a list of improvement projects that include the extension of Jack London Boulevard to El Charro Road, I-580/El Charro interchange improvements (costs to be shared with the cities of Pleasanton and Dublin), I-580/SR 84 interchange, widening Stanley Boulevard west of Murrieta Boulevard, a regional projects component that includes improvements to I-580 and/or SR 84, and traffic signalization projects. The Livermore TIF fee on new developments will fully fund the improvements identified, except for contribution of identified outside funding sources such as Measure B and federal earmarks. This fee applies to all developments in Livermore. As of June 2006, fee amounts were $6,773 per new single-family residential dwelling unit, $18.396 per gross square foot of retail building space, $11.777 per gross square foot of office building space, and $7.312 per gross

square foot of industrial space. This regional fee is estimated to generate approximately $220 million over the term of the program.

City of Dublin

Dublin's general plan, which was last updated in 2002, includes the Land Use and Circulation Element. It provides a policy framework, programs, and design guidelines for the regulation and development of transportation systems. It contains guiding and implementing policies for roadways, transit, bikeways, truck routes, and scenic highways, and LOS standards at intersections and roadways. Additional policies apply to the Eastern Extended Planning Area, the majority of which is contained in the Project's study area. Specific policies relevant to the proposed Project are discussed under "Thresholds of Significance," below.

City of Pleasanton

Pleasanton's 1996 general plan, which is currently being updated, includes a Circulation Element. It provides policies, existing roadway networks and future roadway changes for the movement of people and goods, with an emphasis on the efficient use of existing transportation facilities. It contains goals, policies, and programs for streets and highways, transit, paratransit, bicycle, and pedestrian circulation. Specific policies relevant to the proposed Project are discussed under "Thresholds of Significance," below.

Impact Analysis

Transportation/Traffic Analysis Assumptions

Project Scenario Assumptions

As described above, the transportation/traffic analysis was conducted under specific scenarios. A detailed description of these scenarios follows.

Future baseline conditions 2008 (no project)—Future traffic volumes in 2008 without the proposed Project but with traffic generated by existing and approved development expected to be implemented by 2008.

Baseline year 2008 conditions plus Prime Outlets Livermore Valley with partial Jack London Boulevard Extension option—Future traffic volumes based on baseline conditions and project-generated traffic from the Prime Outlets project, assuming approximately 550,000 square feet of retail and commercial uses, served by a partial extension of Jack London/Airway Boulevard between El Charro Road and the Prime Outlets site, Road A, and a realigned Freisman Road.

Baseline year 2008 conditions plus full Specific Plan Area buildout with Jack London Boulevard Extension option—Future traffic volumes based on baseline conditions and full Specific Plan Area

buildout project-generated traffic using a two-lane extension of Jack London Boulevard from its existing terminus west to El Charro Road.

Baseline year 2008 conditions plus full Specific Plan Area buildout with Airway Boulevard Extension option—Future traffic volumes based on baseline conditions and full Specific Plan Area buildout project-generated traffic using a two-lane extension of Airway Boulevard from Terminal Circle to El Charro Road.

Land Use Assumptions

The traffic analysis assumed that the Prime Outlets Livermore Valley project would include a 550,000-square-foot retail center on approximately 40 acres of land located on the northwest side of the Specific Plan Area. Subsequent to the traffic modeling, the Prime Outlets project has been identified as a retail center with a gross floor area of approximately 450,000 square feet. The retail center would contain 150 national and international brand tenants housed in about 10 single-story buildings with approximately 2,400 on-site parking spaces and 245 off-site parking spaces. As noted above, other regional growth was projected based on recent traffic growth rates.

Full Specific Plan Area buildout consists of approximately 1.5 million square feet of commercial usage, including the Prime Outlets Livermore Valley retail project. The additional development would consist of an expanded retail development and freeway commercial uses as anticipated by the Specific Plan. As a land use option, a church campus consisting of a 3,000-seat assembly, with a preschool and day care, in approximately 140,000 square feet in several building structures is considered for the Children's Hospital property instead of BCP use. Development would expand to include properties fronting on the eastern portion of Freisman Road and to the property at the southeastern corner of the future intersection of El Charro Road and Jack London/Airway Boulevard.

Roadway Assumptions

The following specific roadway changes are included in the implementation of the Project.

- El Charro Road widening will convert the two-lane roadway to a four-lane facility from its interchange with I-580 to north of the existing bridge across the Arroyo Las Positas. Additional turn lanes and a traffic signal are planned at the intersection. On the west leg of the intersection, the proposed improvements would stop at the curb returns, and therefore no traffic would be allowed to access the west leg. It is anticipated that the City of Pleasanton would complete the west leg and open it to traffic with the proposed Staples Ranch project. The public roadway improvements would end north of the existing bridge across the Arroyo Las Positas. There would be a transition area south of the public road to accommodate access to quarry lands.

- The Jack London/Airway Boulevard Extension includes roadway construction from the proposed Road A to El Charro Road as a six-lane roadway, with additional turn lanes at intersections and access points. East of Road A, a two-lane roadway would be constructed either along a southerly alignment to the existing westerly end of Jack London Boulevard or along a northerly alignment to meet Airway Boulevard near its intersection with Club House Drive. The Jack London/Airway Boulevard Extension options involve right-of-way for a four-lane facility and median, with a new bridge crossing at the Arroyo Las Positas or Cottonwood Creek. The four-lane facility would not be constructed until warranted by cumulative traffic conditions. If the Airway Boulevard alignment is selected, Club House Drive would be realigned. The Jack London Boulevard Extension option is consistent with the City's General Plan. The Airway Boulevard Extension option would require an amendment to the City's General Plan Circulation Element. Under the Jack London Boulevard Extension option, the new bridge and the section south of the Arroyo Las Positas to the existing section of Jack London Boulevard south of the airport would be constructed. With the Airway Boulevard Extension option, new bridges over Cottonwood Creek and the Arroyo Las Positas just south of I-580 and the section to the existing Airway Boulevard north of Club House Drive would be constructed. See Figure 2-5. The Jack London Boulevard Extension option includes a potential interim alignment that would minimize impacts on mining resources. A right-in/right-out access point is proposed from Jack London/Airway Boulevard west of Road A.
- The Freisman Road realignment includes truncating about 900 feet of the western portion of this two-lane roadway and eliminating its intersection with El Charro Road.
- The construction of Road A, a new north-south roadway connecting the western portion of Freisman Road to Jack London/Airway Boulevard. The intersection of Road A and Jack London/Airway Boulevard would be located approximately 1,500 feet east of El Charro Road.
- The construction of Road C, a new north-south cul-de-sac south of Jack London/Airway Boulevard near the westerly edge of the airport property west of Road A. Left-turn access from Jack London/Airway Boulevard to Road C would be allowed, but left-turn access from Road C to Jack London/Airway Boulevard would be prevented by a raised median.
- The installation of traffic signals at the intersection of Jack London/Airway Boulevard and Road A and, if the Jack London Boulevard alignment is selected, at the intersections of Jack London Boulevard with Discovery Drive and Voyager Drive.

The following specific roadway change, in addition to those noted above, is included in the implementation of full Specific Plan and Project buildout.

- The construction of Road B, a new north-south roadway connecting the eastern portion of Freisman Road to Jack London/Airway Boulevard.

Level of Service Modeling Assumptions

The City maintains an intersection LOS analysis model using the TRAFFIX software that covers all General Plan study intersections in Livermore. The methodology used to calculate LOS is based on the *Highway Capacity Manual* (HCM) 2000 Operations Method (Transportation Research Board 2000) that calculates delay at all signalized and unsignalized intersections. For the purpose of this transportation analysis, the model was expanded to address additional intersections in the study area and to include additional intersections in the Cities of Dublin and Pleasanton.

Site Circulation Assumptions

Access to Prime Outlets Livermore Valley would be provided from three main entrances on Road A between Freisman Road and the extension of Jack London/Airway Boulevard. A fourth right-in/out access is proposed off Jack London/Airway Boulevard.

The full project buildout would include access to the 12-acre Johnson-Himsl property from Road C and a right-out-only access point on El Charro Road south of the Jack London/Airway Boulevard Extension. Access to the other privately owned properties would be from Road A, Road B, or Freisman Road. Airway Boulevard, if selected, would provide direct access to the properties at the east end of the Specific Plan Area.

Transit Assumptions

The following changes to transit facilities are included in the implementation of the Project.

- With the proposed extension of service along Jack London/Airway Boulevard to El Charro Road, bus stops would be provided on both sides of the extended Jack London/Airway Boulevard. Bus stop locations being considered include at El Charro Road and Road A along Jack London/Airway Boulevard or at a midpoint between Road A and El Charro Road, subject to a traffic signal at this midpoint location.

Alternative Mode Assumptions

The following changes to bicycle and pedestrian facilities are included in the implementation of the proposed Project.

- The Jack London Trail, a Class I (off-street pathway) regional multiuse trail, would be constructed beginning in the east at West Jack London Boulevard and the western boundary of the proposed Oaks Business Park development.

This trail would run in a westerly direction along the south side of the proposed Jack London Boulevard Extension option. The trail then would either cross the Arroyo Las Positas near the southeastern corner of the Specific Plan Area and continue along the north side of the Arroyo or follow along the southern side of the Arroyo and cross over to the northern side on a new pedestrian bridge near the fish ladder. The trail would continue westerly and cross under El Charro Road on an existing trail along the channel that connects with a regional trail immediately west of El Charro Road. Trail connections would be constructed from the signalized intersections of Jack London/Airway Boulevard with Road A and with Road B. A trail connection also would be constructed to a trailhead/parking facility proposed along Road C.

- Sidewalks, marked crosswalks, curb ramps, and other pedestrian facilities along Jack London/Airway Boulevard, Freisman Road, Road A, Road B, and El Charro Road would be required to meet the City's design standards.

Parking Assumptions

The current site plan for the Prime Outlets Livermore Valley project provides for approximately 2,400 on-site parking spaces and 245 off-site parking spaces to serve about 450,000 square feet of retail uses. Parking for future phases would conform to City of Livermore parking requirements.

Transportation/Traffic Methodology

Traffic Modeling Methodology

The City's General Plan travel demand model and intersection analysis models were used to conduct the transportation/traffic analysis. The City's model was considered the most appropriate because it includes buildout of the General Plan and extensive network and zonal detail throughout the City. The intersection analysis model includes all signalized intersections in Livermore, which were analyzed with the latest HCM techniques. These models were updated to reflect the most recent traffic models used in the cities of Dublin and Pleasanton and the nine-county Bay Area region. A more detailed description of the transportation/traffic methodology is provided below.

Freeway Operations Analysis

The freeway operations analysis was conducted using the methodology described in the HCM. The Highway Capacity Software (HCS) was used to analyze four segments of I-580:

- I-580 west of Santa Rita/Tassajara Road,
- I-580 west of El Charro Road,
- I-580 east of El Charro Road, and

- I-580 east of Airway Boulevard.

Signalized Intersection Analysis

Signalized intersection analyses were conducted using the operational methodology outlined in the HCM (Transportation Research Board, Washington, D.C., 2000, Chapter 16), and as required by the City.

Unsignalized Intersections Analysis

Unsignalized, or stop-sign-controlled, intersections were analyzed utilizing the operational methodology outlined in the HCM (Transportation Research Board 2000).

Congestion Management Program Methodology

Pursuant to the request of the ACCMA in its letter dated June 14, 2006, in response to the NOP of the EIR, a CMP analysis was conducted for the proposed Project for years 2010 and 2025 (see Chapter 4 for the year 2025 results). The impacts of the Project on the regional transportation system were assessed using the latest version of the ACCMA Countywide Travel Demand Model, which uses ABAG's Projections 2002 (P'02) socioeconomic forecasts. The retail land use for the Project was added into the model in the form of sociodemographic data for the year 2010 forecast. For the Project analysis, the "with-project" forecasts were compared to the "no-project" forecasts for roadway and transit to determine impacts. The impact analysis for roadways includes all MTS roadways and CMP-designated roadways, plus several local MTS roadways as well as transit corridors in the vicinity of the Project Area.

The traffic forecasts were based on the most recent version (during the period when the comments on the NOP were issued) of the Countywide Model, which uses ABAG P'02 socioeconomic forecasts. The socioeconomic data for the Project Area was added into the model for the 2010 forecast for all traffic analysis zones (TAZs) within the Project Area. Only retail land use was assumed in the Specific Plan Area. Therefore, the only change in the land use assumption was the number of retail jobs. Near-term baseline (2008) conditions assume 550,000 square feet of retail space. The CMP analysis evaluates the near term in year 2010, which assumed an additional 200,000 square feet of retail development expected to be added in the two-year period and 1,500 jobs.

For the CMP analysis, traffic estimates were calculated for the proposed Project using the model and then compared against 2010 volumes. The model was used to calculate trip generation, trip distribution, mode choice, and trip assignment of project trips from and to the site. The results were summarized for both highway and transit impacts. Highway impacts were summarized at the designated link locations based on ACCMA's comments on the NOP for the Project (these link locations are generally similar to those identified in the letter). Transit impacts were addressed for LAVTA and BART.

The CMP analysis evaluated the LOS for the designated links using the Florida Department of Transportation LOS methodology, which provides a planning level analysis based on HCM 1985 methods. As a planning-level analysis, the LOS is based on forecasts of traffic and assumptions for roadway and signalization control conditions, such as the facility type (freeway, expressway, and arterial classification), speeds, and the capacity and number of lanes. The assumption for the number of lanes at each link location was extracted from the ACCMA Countywide Travel Model and also confirmed through field observations.

Quarry Truck Traffic Methodology

The quarry activity was treated as a special generator in the traffic model, with existing quarry activity fixed in the model using observed counts, which was then adjusted for peak month quarry activity. Future estimates of truck traffic generated from the quarry are based on an extrapolation of the existing quarry traffic using planned growth in quarry activity. The traffic model then was used to distribute and assign peak hour quarry activity to the roadways and intersections.

Traffic Safety Methodology

A traffic safety analysis was conducted by DKS Associates (2006) to assess whether the Project would substantially increase hazards because of the design features of the Project or as a result of incompatible uses. The traffic safety assessment included evaluation of the queue buildup at the signalized intersection of El Charro Road and Jack London Boulevard, and the directional movement of traffic at all intersections, including proposed driveways on El Charro Road. This study evaluated the differences between existing quarry truck traffic conditions and the buildout of the proposed Project with background growth projected to 2030. The assessment included evaluation of safe stopping distances for approaches to unsignalized intersections, lane configuration at intersections as well as links from the quarry access road along El Charro Road and from the I-580 ramps. The geometry on El Charro Road was reviewed in relation to design requirements for the anticipated design speed of 45 mph as recommended by the City. Lane drops and merges were evaluated in relation to AASHTO requirements. The review of the intersection traffic control was limited to the unsignalized intersection of the quarry access road and the El Charro Road segment that extends to Stanley Boulevard (blocked to through traffic), and the proposed signalized intersection of El Charro Road and Jack London/Airway Boulevard. Queue buildup at left-turn pockets was assessed using the Fifth Edition Caltrans *Highway Design Manual* (California Department of Transportation 2006) for left-turn pockets, in Chapter 400. An accident analysis was also conducted and based upon California Highway Patrol's Statewide Integrated Traffic Records System (SWITRS) accident data for the past three years, as furnished by Alameda County.

Transit Methodology

The impact of the proposed Project on the transit system was assessed using the latest version of the ACCMA Countywide Travel Demand Model. The ACCMA countywide model predicts transit ridership for all operators, including LAVTA and BART. The transit trips generated by baseline and future project conditions were forecast using the ACCMA Countywide Travel Demand Model, respectively, for LAVTA transit and BART. The model generates daily home-based work and nonwork trips but does not generate peak hour transit trips. Therefore, to estimate the number of transit trips occurring during the peak period, it was conservatively assumed that all of the daily home based work trips would occur during the a.m. and p.m. peak hours.

Project Trip Generation

Vehicle trips generated by the proposed Project were calculated using standard rates from the Institute of Transportation Engineers' (ITE). While approximately 10% to 20% of vehicles already counted on the roadway network under no-project conditions might access the Project Area as pass-by and diverted trips, the analysis assumes the proposed Project generates all new vehicle trips, in order to be conservative. Project-generated trips are analyzed for the Prime Outlets Livermore Valley project and full project buildout, as shown in Table 3.15-9.

Table 3.15-9. Trip Generation

Phase	Prime Outlets Livermore Valley Only	Full Project
Use	Retail	Retail
Size	550	1,449
Units	ksf	ksf
ITE Code	820	820
Daily Rate	42.92	42.92
Daily Trips	23,606	62,191
A.M. Peak Hour		
Rate	1.03	1.03
% In	0.61	0.61
% Out	0.39	0.39
In	346	910
Out	221	582
P.M. Peak Hour		
Rate	3.74	3.74
% In	0.48	0.48
% Out	0.52	0.52
In	987	2,601
Out	1,070	2,818

Note:

ksf = thousand square feet

Source: *ITE Trip Generation, 6th Edition,* and City of Livermore Model.

The 550,000-square-foot retail center is expected to generate 23,606 daily vehicle trips, of which 567 will occur in the morning peak hour and 2,057 will occur in the evening peak hour. The approximately 1.5 million-square-foot retail center is expected to generate 62,191 daily vehicle trips, of which 1,492 will occur in the morning peak hour and 5,419 will occur in the evening peak hour.

Congestion Management Program Analysis

To evaluate potential project-related impacts under the CMP analysis, the traffic baseline forecast for 2010 was extracted at the required CMP and MTS highway segments from the ACCMA Countywide Travel Demand Model for both the a.m.

and p.m. peak hours. The peak hour operations were evaluated in compliance with ACCMA requirements. Results are discussed in the impact analysis section below.

Thresholds of Significance

Significance criteria for the proposed Project's impacts on traffic are drawn from existing planning documents and from the State CEQA Guidelines. The proposed Project would create a significant transportation/traffic impact if it would:

a. cause an increase in traffic, which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the v/c ratio on roads, or congestion at intersections);

b. exceed, either individually or cumulatively, an LOS standard established by the ACCMA for designated roads or highways;

c. result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks;

d. substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment);

e. result in inadequate emergency access;

f. result in inadequate parking capacity; or

g. conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts and bicycle racks).

The above general significance criteria are interpreted as follows in evaluating the proposed Project.

a. Traffic Impacts

Freeway and Ramp Operations

As stated in the Caltrans *Guide for the Preparation of Traffic Impact Studies* (Caltrans 2001), "Caltrans endeavors to maintain a target LOS at the transition between LOS 'C' and LOS 'D' on State highway facilities, however, Caltrans acknowledges that this may not always be feasible. … If an existing State highway facility is operating at less than the appropriate target LOS, the existing [measure of effectiveness] should be maintained." However, the Alameda County *Congestion Management Plan* and *Tri-Valley Transportation Plan/Action Plan for Routes of Regional Significance* identify LOS no worse than E (v/c < 1.00) on freeways and ramps during peak hours. For the purposes of this study, significant traffic impacts on I-580 in the study area are identified if the proposed Project causes:

- the operations of a freeway segment or ramp to deteriorate from LOS E or better to LOS F, or
- an increased v/c ratio on a freeway segment already operating at LOS F by more than 3%.

Intersection Operations

The cities' general plans, the Alameda County East County Area Plan, the Alameda County CMP, and the Tri-Valley Transportation Council's *Action Plan* contain LOS standards for intersection operations. Each jurisdiction's standards are discussed below and summarized for each intersection in Table 3.15-10.

Livermore

In Livermore's General Plan, Objective CIR-4.1, Policy 1, established that the lowest acceptable LOS at a signalized intersection is midlevel LOS D (an average total stop delay per vehicle of more than 45 seconds), except in the downtown area and on specified intersections near freeway interchanges. Additionally, Objective CIR-4.1, Policy 3, allows for LOS E at identified signalized intersections located near freeway interchanges. The General Plan also accepts the need to balance competing objectives, as stated in Objective CIR-4.1, Policy 4, and some signalized intersections may exceed the established LOS standard due to right-of-way constraints and regional roadway network needs. Livermore does not have an LOS standard for unsignalized intersections.

In addition to the jurisdiction's LOS standards, additional traffic generated by the proposed Project may contribute traffic to intersections that are already congested and operate below the Livermore LOS standard. In this case, the project impacts were considered significant if the addition of project traffic results in an increase of 5 seconds or more to the average delay.

Dublin

According to Dublin's general plan, Chapter 5, "Additional Design Criteria," Guiding Policy F, operating LOS at Dublin's intersections should be no worse than LOS D. In addition to the jurisdiction's LOS standards, additional traffic generated by the proposed Project may contribute traffic to intersections that are already congested and operate below the Dublin LOS standard. In this case, the project impacts were considered significant if the addition of project traffic results in an increase of 5 seconds or more to the average delay.

Pleasanton

Pleasanton's general plan, Chapter II, Policy 2, Program 2.2, states that a significant impact will occur when the Project causes an intersection outside of the Central Business District to operate at LOS E or worse. According to City of Pleasanton staff, one or more new project trips added to intersections that already operate at a substandard LOS would be considered a project impact. In addition to the jurisdiction's LOS standards, additional traffic generated by the proposed Project may contribute traffic to intersections that are already congested and

operate below the Pleasanton LOS standard. In this case, the project impacts were considered significant if the addition of project traffic results in an increase of 1 second or more to the average delay.

b. Congestion Management Agency Requirements

According to the Alameda County CMP, the LOS standard for MTS roadways, which include the CMP roadway network, is LOS E, except for those locations at LOS F in 1991. Significant traffic impacts on MTS roadways in the study area are identified if the El Charro Specific Plan causes:

- the operations on MTS roadways to deteriorate from LOS E or better to LOS F, or
- an increased v/c ratio on an MTS roadway already operating at LOS F by more than 3%.

c. Air Traffic Patterns

Although located in proximity to the Livermore Municipal Airport, the proposed Project is not expected to alter air traffic patterns, and no impacts were identified. Therefore, this topic is not discussed further in the section below.

d. Design Hazard (Traffic Safety Impacts)

The project impacts were considered significant if the design does not meet current City standards.

The proposed Project would cause a significant impact if it would:

- substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections), or
- result in a higher than average accident rate.

e. Emergency Access

The project impacts were considered significant if the proposed access to the Specific Plan Area does not meet the requirements of the Livermore–Pleasanton Fire Department.

Table 3.15-10. Intersection Level of Service Thresholds

Intersections		LOS Threshold	Jurisdiction	Notes
1	El Charro Rd at I-580 eastbound ramps	Midlevel D	Alameda County/Caltrans	
2	El Charro Rd at Freisman Rd	None	Livermore	Eliminated if Project is implemented
3	Airway Blvd at North Canyons Pkwy	E	Livermore	
4	Airway Blvd (SR 84) at I-580 westbound ramps	E	Livermore/Caltrans	
5	Airway Blvd (SR 84) at I-580 eastbound ramps	E	Livermore/Caltrans	
6	Isabel Ave–Kitty Hawk Rd (SR 84) at Airway Blvd	E	Livermore/Caltrans	See [1] below; eliminated by 2030
7	Collier Canyon Rd at North Canyons Pkwy	Midlevel D	Livermore	
8	Isabel Ave (SR 84) at Jack London Blvd	Midlevel D	Livermore/Caltrans	See [1] below
9	Isabel Ave (SR 84) at East Stanley Blvd off-ramp (north)	Midlevel D	Livermore/Caltrans	
10	Isabel Ave (SR 84) at Stanley Blvd on-ramp (south)	Midlevel D	Livermore/Caltrans	
11	Isabel Ave (SR 84) at Concannon Blvd	Midlevel D	Livermore/Caltrans	
12	East Vallecitos Rd (SR 84) at Isabel Ave	Midlevel D	Livermore/Caltrans	
13	Murrieta Blvd at East Jack London Blvd–Pine St	Midlevel D	Livermore	
14	Murrieta Blvd at East Stanley Blvd	Midlevel D	Livermore	
15	Isabel Ave–Campus Dr at Portola Ave	E	Livermore	Future Intersection
16	Isabel Ave (SR 84) at I-580 westbound ramps	E	Livermore/Caltrans	Future Intersection
17	Isabel Ave (SR 84) at I-580 eastbound ramps	E	Livermore/Caltrans	Future Intersection
18	El Charro Rd at West Jack London Blvd	Midlevel D	Livermore	Future Intersection
19	Isabel Ave (SR 84) at Airway Blvd	E	Livermore/Caltrans	See [1] below; Future Intersection
20	Airway Blvd at Airway Extension	Midlevel D	Livermore	Future Project Intersection
21	Hacienda Dr at Dublin Blvd	E	Dublin	
22	Hacienda Dr at I-580 westbound ramps	E	Dublin/Caltrans	
23	Tassajara Rd at Central Pkwy	E	Dublin	
24	Tassajara Rd at Dublin Blvd	E	Dublin	
25	Tassajara Rd at I-580 westbound ramps	E	Dublin/Caltrans	
26	Fallon Rd at Central Pkwy	E	Dublin	Future Intersection
27	Fallon Rd at Dublin Blvd	E	Dublin	Future Intersection
28	El Charro Rd–Fallon Rd at I-580 westbound ramps	E	Dublin/Caltrans	
29	Hacienda Dr at I-580 eastbound ramps	E	Pleasanton/Caltrans	
30	Hacienda Dr at Owens Dr	E	Pleasanton	

Intersections		LOS Threshold	Jurisdiction	Notes
31	West Las Positas Blvd at Stoneridge Dr	E	Pleasanton	
32	Santa Rita Rd at Pimlico Dr–I-580 eastbound ramps	E	Pleasanton/Caltrans	
33	Santa Rita Rd at West Las Positas Blvd	E	Pleasanton	
34	Santa Rita Rd at Stoneridge Dr	E	Pleasanton	
35	Santa Rita Rd at Valley Ave	E	Pleasanton	
36	Rheem Dr–Milani Ave at Stoneridge Dr	E	Pleasanton	
37	Kamp Dr–Garden Cir at Stoneridge Dr	E	Pleasanton	
38	Busch Rd at Valley Ave	E	Pleasanton	
39	Valley Ave–Bernal Rd at Stanley Blvd	E	Pleasanton	
40	El Charro Rd at Busch Rd	E	Pleasanton	
41	El Charro Rd at Stanley Blvd	E	Pleasanton	
42	Road A at W Jack London Blvd	Midlevel D	Livermore	Future Project Intersection
43	Johnson-Himsl access at W Jack London Blvd	None	Livermore	Future Project Intersection
44	BBPL access at W Jack London Blvd	None	Livermore	Future Project Intersection
45	Road B at W Jack London Blvd	Midlevel D	Livermore	Future Project Intersection
46	El Charro Rd at Johnson-Himsl access	None	Livermore	Future Project Intersection

Notes:

LOS = level of service

[1] Intersection may exceed established LOS standard due to right-of-way constraints and regional roadway network needs.

Source: Dowling Associates, Inc., 2006.

f. Parking Capacity

The Project would result in a significant impact if the demand for parking exceeded the supply provided on-site, thus requiring off-site parking.

The proposed Project would meet its parking demand within the Specific Plan Area and would not result in a demand for parking facilities outside the Specific Plan Area. Therefore, this topic is not discussed further in the section below.

g. Alternative Modes

Bicycle Impacts

Alameda County (*Alameda Countywide Bike Plan* and *East County Area Plan*) and Livermore, Dublin, and Pleasanton general plans all have policies supporting the creation of bikeway networks in their respective jurisdictions. A bicycle impact is considered significant if the El Charro Specific Plan would:

- disrupt existing bicycle facilities;
- interfere with planned bicycle facilities;
- conflict or create inconsistencies with adopted bicycle system plans, guidelines, policies or standards; or
- not provide secure and safe bicycle parking facilities in adequate proportion to anticipated demand.

Pedestrian Impacts

Alameda County (*Pedestrian Master Plan for the Unincorporated Area* and *East County Area Plan*) and Livermore, Dublin, and Pleasanton general plans have policies supporting facilities for nonmotorized circulation. All jurisdictions, except for Dublin, provide specific policies for creating a pedestrian and trail network, encouraging pedestrian activity through land use and requiring routine accommodation to pedestrians in new developments. A pedestrian impact is considered significant if the Project would:

- disrupt existing pedestrian facilities;
- interfere with planned pedestrian facilities;
- conflict or create inconsistencies with adopted pedestrian plans, guidelines, policies or standards; or
- not provide secure and safe pedestrian facilities in adequate proportion to anticipated demand.

Transit Impacts

The Alameda County and Livermore General Plans contain policies that support the provision of transit facilities and routes, changes to land use and densities that promote transit use, and programs to increase ridership. A transit impact is considered significant if the Project would:

- be inaccessible to transit riders (defined as within a quarter-mile walking distance of a transit stop),
- disrupt existing transit service,
- interfere with planned transit facilities, or
- not provide amenities necessary to transit demand.

Impacts and Mitigation Measures

Traffic Impacts

Impact TRA-1: The Addition of Project-Generated Traffic Would Contribute to Unacceptable Freeway and Ramp Operations during Peak Hours—Less than Significant

The freeway operations with the proposed Project under future baseline (2008) conditions are summarized in Tables 3.15-6, 3.15-7a and 3.15-7b.

Future Baseline Conditions 2008 Plus Prime Outlets with Partial Jack London/Airway Boulevard Extension Option

Using the future baseline (2008) conditions, trips generated by the implementation of the Prime Outlets Livermore Valley project and roadway improvements were added to the model.

Table 3.15-6 summarizes the results of the freeway operations analysis for the baseline with and without Prime Outlets Livermore Valley conditions. The Project does not cause any segments to decline from LOS E to LOS F and does not cause any v/c increases for segments already at LOS F by more than 3%.

Thus, with the Prime Outlets project, 2008 impacts on freeway and ramp operations would be less than significant.

Future Baseline Conditions 2008 Plus Full Specific Plan Area Buildout (Both Options)

Project trips generated by the implementation of the full project buildout were added to the traffic model under the future baseline (2008) project scenario.

Tables 3.15-7a and 3.15-7b summarizes the results of the freeway operations analysis for the baseline with and without full buildout conditions under both the Jack London Boulevard Extension and the Airway Boulevard Extension. The Project with either extension does not cause any segments to decline from LOS E to LOS F and does not cause any v/c increases for segments already at LOS F by more than 3%.

Thus, under full buildout conditions, the Project would result in less-than-significant impacts on freeway operations.

Impact TRA-2: The Addition of Project-Generated Traffic Would Contribute to Unacceptable Level of Service at Intersections during Peak Hours—Potentially Significant and Unavoidable for Certain Intersections

The intersection operations with the proposed Project under future (2008) conditions are summarized in Table 3.15-8.

Future Baseline Conditions 2008 Plus Prime Outlets with Partial Jack London/Airway Boulevard Extension Option

All freeway study ramp intersections would meet their LOS threshold.

All other intersections are expected to operate at acceptable LOS during the a.m. and p.m. peak hours except the intersection of Murrieta Boulevard at East Jack London Boulevard/Pine Street. This intersection would decline from a baseline LOS D to LOS E condition under the p.m. peak hour, which is considered significant. During the a.m. peak hour, this intersection would operate at LOS E with a less-than-5-second increase in vehicle delay with the Project, which is considered less than significant.

The p.m. peak hour impact at this one intersection is considered significant. Implementation of the following mitigation measures would reduce this impact to a less-than-significant level.

Mitigation Measure TRA-2a: Implement Traffic Operations Improvements at the Intersection of Murrieta Boulevard at East Jack London Boulevard and Pine Street

To minimize traffic impacts, the City will add a second eastbound right-turn lane to provide dual right-turn lanes at the intersection of Murrieta Boulevard at East Jack London Boulevard and Pine Street. This could be accomplished by re-striping the bike lanes and removing the existing median. This measure would improve operations to LOS D with average delays of 50 seconds during the a.m. peak hour and 42 seconds during the p.m. peak hour.

Specific Plan Area participants who receive benefits from the Specific Plan will participate in a land-secured financing mechanism, such as an assessment district, in order to pay their share of costs of this improvement in proportion to the benefits received.

Future Baseline Conditions 2008 Plus Full Specific Plan Area Buildout (Both Options)

Table 3.15-8 summarizes the results of the a.m. and p.m. peak hour intersection LOS for intersections under the future baseline (2008) full project buildout scenario compared with no-project conditions with both road extensions.

The following freeway ramp intersections would have reduced LOS under the following conditions:

- Eastbound I-580–El Charro Road ramps (a.m. peak hour declines from the baseline of LOS B to LOS F with the Jack London Boulevard Extension and LOS E with the Airway Boulevard Extension), and
- Eastbound I-580–El Charro Road ramps (p.m. peak hour declines from baseline LOS A to LOS F with either east-west extension).

Under the future baseline (2008) plus full buildout with either east-west road extension option, all other intersections are expected to operate at acceptable LOS during the a.m. and p.m. peak hours except at the following locations.

- Murrieta Boulevard at East Jack London Boulevard–Pine Street in Livermore worsens from a baseline LOS D to LOS F under the p.m. peak hour (but remains at LOS E under the a.m. peak hour with a less-than-5-second increase in delay).
- Fallon Road at Dublin Boulevard in Dublin worsens from LOS B to LOS E under the p.m. peak hour.

The impact on the noted intersections above is considered significant. However, with implementation of the following mitigation measures, this impact would be reduced to a less-than-significant level.

Mitigation Measure TRA-2a: Implement Traffic Operations Improvements at the Intersection of Murrieta Boulevard at East Jack London Boulevard and Pine Street
The full text of this measure is included above.

Mitigation Measure TRA-2b: Implement Traffic Operations Improvements at the Intersection of El Charro Road and I-580 Eastbound Ramps
To minimize traffic impacts, a second eastbound right-turn lane will be added at the intersection of El Charro Road and I-580 eastbound ramps. This improvement would reduce the delays at the ramp intersection, resulting in LOS C with 26-second and 32-second delays during the a.m. and p.m. peak hours, respectively.

This project is included as part of the I-580/El Charro Road interchange improvements included in the City's TIF program. Developments within the El Charro Specific Plan Area shall contribute their fair share cost of these improvements by paying Livermore TIFs.

If the Staples Ranch development is approved, the City will negotiate the participation of the City of Pleasanton and/or Alameda County and/or Staples Ranch participants in funding this improvement, because of their impact on this same freeway ramp and the benefits accruing to new development from this improvement.

Mitigation Measure TRA-2c: Implement Traffic Operations Improvements at the Intersection of Fallon Road at Dublin Boulevard

To minimize traffic impacts, the City of Dublin could modify the signal timing to provide an overlap phase for the eastbound right-turn movement. If the City of Dublin elects to implement this improvement, it would reduce the delays on the eastbound approach. However, if Dublin chooses not to implement this improvement, the impact would be significant and unavoidable.

The City of Livermore will confer with the City of Pleasanton, the City of Dublin, and Alameda County on a strategy to fund and complete mitigation measures within each other's jurisdictions. More specifically, the City of Livermore will seek to enter into one or more binding agreements with each of these other local agencies in order to facilitate a fair and equitable subregional approach to traffic mitigation, to the mutual benefit of all of the affected jurisdictions. Depending on the willingness of these other local agencies to enter into such agreements, the ultimate result may be a single multijurisdictional agreement or one or more agreements between Livermore and one or more of the other agencies. The strategy will address fair-share mitigation for projects approved by one jurisdiction that contribute cumulatively considerable traffic to intersections and roadway segments in neighboring jurisdiction(s) with cumulatively substandard LOS.

The applicable standard for LOS will be that established by each local agency for its current jurisdictional area and its SOI. If SOIs overlap or jurisdiction over an intersection is split between two local agencies, the standard to be achieved by mitigation, where feasible, will be determined by mutual agreement of the jurisdictions involved.

The City is willing to ensure that projects it approves contribute fair-share mitigation costs for improvements in other jurisdictions but only if the other jurisdictions are also willing to reciprocate for projects within their jurisdictions that contribute considerably to traffic occurring within the City of Livermore. The strategy also may allocate mitigation responsibility to each jurisdiction for improvements within its jurisdiction on the understanding that each jurisdiction will be addressing the cumulative contributions from projects in neighboring jurisdictions. A combination of approaches may be used also.

If a mutually agreeable strategy cannot be reached with the City of Pleasanton, the City of Dublin, and Alameda County, or any one of them, then the City will not require the contribution of mitigation for cumulative contributions to impacts in any other jurisdiction unwilling to agree to reciprocity with the City of Livermore. This is because, under such circumstances, the City could not be assured that projects it approves are being assessed for mitigation only in proportion to their impact and because the City may need to require reallocation of the

mitigation contribution to intersections and roadway segments within Livermore itself, lacking assurance of mitigation funding from projects that may be approved by other jurisdictions. In the event that a mutually agreed-upon strategy is not reached, then mitigation of the El Charro Project's contribution to the impacted intersection or roadway segment would be infeasible, and the impact would be considered significant and unavoidable.

Specific Plan Area participants who receive benefits from the Specific Plan will pay their share of costs of improvements in question in proportion to the benefits received. The fair-share costs will be contributed to the local agency that has entered into an agreement with the City when the local agency is ready to implement the improvements at issue, provided the aforementioned strategy has been mutually agreed upon by the City of Livermore and such other local agency.

Impact TRA-3: The Addition of Project-Generated Traffic from the Church Campus Use Option—Less than Significant with Mitigation

A traffic impact analysis of the church campus land use option showed no additional impacts than those identified above for retail uses within the El Charro Specific Plan.

The El Charro Specific Plan allows public, quasi-public and institutional uses with a conditional use permit. One property owner has expressed an interest in developing a church campus, which would consist of up to 160,000 square feet of gross floor area in several buildings with the following components: a 3,000-seat assembly room; a secondary chapel; a gymnasium; a children's day care; a preschool; a counseling center; a maintenance building; a caretaker's residence; and various outdoor uses such as play areas, sports fields, parking, RV storage; and an outdoor amphitheater.

A church project typically would have two Sunday morning services and a Wednesday evening service. The Wednesday evening service would draw about half the patronage of each Sunday service. Counseling and ministry-related events and meetings may occur every day. Administration and maintenance functions typically would be done during normal weekday working hours. In addition, day care and preschool services may be offered for up to 48 students each during the weekdays.

If a church campus were built, it would replace approximately 276,000 square feet of potential retail uses. Therefore, 276,000 square feet of retail is considered the equivalent retail project for this analysis.

A comparison of trip generation was made between the church campus option described above and the equivalent potential retail use that the church, if approved, would replace for weekday daily, a.m. and p.m. peak hours; Wednesday nights; and Sunday daily and peak hours. Where church trips were fewer than trips from an equivalent retail project, it was concluded that the traffic analysis done and impacts and mitigation measures identified for the retail uses

was adequate and conservative for the church campus option. Where church trips were greater than trips from the equivalent retail project, a more detailed traffic forecasting and LOS analysis was performed at select study intersections.

The traffic modeling for the El Charro Specific Plan analyzed traffic generated by approximately 1.5 million square feet of retail development using ITE's trip generation rates for shopping centers. Results are presented in Appendix E. The traffic generated by a church campus as described above would be less than the traffic generated by 276,000 square feet of retail uses for all periods including Wednesday evening, with the exception of Sunday morning peak hour. Therefore, a church campus land use option, as described above, would create no greater traffic impacts than for the retail uses during weekday daily hours, weekday a.m. and p.m. peak hours, Wednesday evening, and daily on Sunday.

Retail uses have the greatest impact during the a.m. and p.m. peak hours on weekdays, when peak shopping trips coincide with the peak commute times. Transportation infrastructure is typically sized to meet weekday peak hour demand, because it is usually the period with the highest traffic demand. However, church uses create a high peak demand on Sunday morning as patrons travel to and from Sunday services. Sunday morning, however, typically has a low level of background traffic as compared with weekday peak hours.

An analysis of the freeway, arterial roads, and other project intersections farther removed from the Specific Plan Area was not done because of the low level of background traffic on Sundays. Sunday traffic conditions on these facilities are expected to operate within established LOS standards. An analysis of Sunday peak hour traffic was performed at the study intersections along El Charro Road. Traffic heading to and from the church would create the greatest impact at intersections near the project site because traffic heading to a common destination concentrates along roadways proximate to the destination. The intersections along El Charro Road were chosen also because of concerns raised by the quarries.

Sunday peak hour turn volume forecasts and LOS at the following intersections: El Charro Road/Jack London Boulevard; El Charro Road/I-580 eastbound ramps; and El Charro Road/I-580 westbound ramps are shown in tables in Appendix E. All intersections are expected to operate well within established LOS standards during the peak hour on Sunday. Sunday peak hour traffic volumes for each turning movement will be lower than the corresponding weekday peak hour volume.

Because of the nature of church services, it can be anticipated that peaking characteristics of the church services' traffic may be more concentrated than normal traffic. Because overall traffic patterns on Sunday morning are significantly less than on weekdays, the duration of green lightsafforded this movement can be increased to accommodate this phenomena. The storage length on the freeway ramps and in the intersection turn pockets is sized adequately for Sunday traffic with the church land use option.

It is possible that there may be a very short-term queuing impact during the peak period of church arrivals for Sunday services. This impact is likely to be of a short duration. The following mitigation would reduce this potential impact to a less-than-significant level.

Mitigation Measure TRA-3: Monitor Church Sunday Queuing and, if Necessary, Adjust Signal Timing to Accommodate Church Traffic

The City will require monitoring of Sunday queuing if a church use is ultimately approved within the Specific Plan Area. If queuing would result in substandard traffic LOS, then signal timing will be adjusted to accommodate church traffic accordingly.

Congestion Impacts

Impact TRA-4: The Addition of Project-Generated Traffic Would Contribute to Unacceptable Segment Operations under the 2010 Congestion Management Program Scenario—Significant and Unavoidable

The segment operations CMP analysis results for the year 2010 are summarized in Tables 3.15-11 and 3.15-12. The Project would be expected to result in significant impacts at two MTS route segments:

- I-580 west of El Charro Road, and
- SR 84 north of Stanley Boulevard.

Westbound I-580 west of El Charro Road would worsen from a 2010 no-project LOS of E to LOS F during the a.m. peak hour. This is considered a significant impact.

Several planning and environmental studies are currently under way for reconfigurations along the I-580 corridor. These proposed changes include HOV lanes, HOT lanes, auxiliary lanes, ramp metering, the preservation of right-of-way for a rail corridor in the median, truck climbing lanes, and improvements to the I-580/I-680 interchange. With the addition of these improvements, the impact on this MTS roadway segment would be less than significant. These improvements are programmed and funded but may not be in place by 2010 to mitigate for project impacts. Therefore, a temporary significant and unavoidable impact may occur in the interim after the project trips are generated until the necessary improvements are made.

In the a.m. and p.m. peak hours, SR 84 north of Stanley Boulevard would operate at LOS F in both the northbound and southbound directions. The Project would contribute more than 3% increases in v/c for the northbound a.m. peak and the southbound p.m. peak. This is considered a significant impact.

Table 3.15-11. El Charro Specific Plan Traffic Impact Segment Operations Analysis for Metropolitan Transportation System Segments, 2010, A.M. Peak

	Northbound/Eastbound							
	No Project	Project			No Project	Project		
Link Location	2010 A.M. Vol	2010 A.M. Vol	% Vol Diff	Contribution	2010 A.M. LOS	2010 A.M. LOS	Decline to F or Worsen F?	Change in V/C > 3%
Freeways								
I-680—north of SR 84	1,352	1,371	1.4%	19	A	A	no	NA
I-680—north of Bernal Ave	2,892	2,866	-0.9%	-26	B	B	no	NA
I-580—west of El Charro Rd	4,417	4,719	6.8%	302	B	B	no	NA
I-580—east of El Charro Rd	4,544	4,608	1.4%	64	B	B	no	NA
I-580—west of Livermore Ave	4,717	4,773	1.2%	56	C	C	no	NA
Arterials								
SR 84—east of I-680	695	688	-1.0%	-7	C	C	no	NA
SR 84—north of Stanley Blvd	2,002	**2,261**	**12.9%**	**259**	**F**	**F**	**yes**	**yes**
SR 84—south of Airway Blvd	2,602	2,174	-16.4%	-428	F	F	no	NA
Stanley Blvd—west of SR 84	879	883	0.5%	4	B	B	no	NA
Stanley Blvd—west of Murrieta Blvd	748	756	1.1%	8	B	B	no	NA
Santa Rita Rd—north of Valley Ave	3,444	3,332	-3.3%	-112	F	F	no	NA
Holmes St—south of Murrieta Blvd	647	658	1.7%	11	D	D	no	NA
South Livermore Ave—north of East Ave	460	454	-1.3%	-6	D	D	no	NA
North Livermore Ave—south of Las Positas Rd	851	800	-6.0%	-51	D	D	no	NA
First St—south of Portola Ave	1,311	1,298	-1.0%	-13	D	D	no	NA
First St—south of I-580	1,142	1,138	-0.4%	-4	D	D	no	NA

	Southbound/Westbound							
	No Project	Project			No Project	Project		
Link Location	2010 A.M. Vol	2010 A.M. Vol	% Vol Diff	Vol Diff	2010 A.M. LOS	2010 A.M. LOS	Decline to F or Worsen F?	Change in V/C > 3%
Freeways								
I-680—north of SR 84	6,564	6,514	-0.8%	-50	F	F	no	NA
I-680—north of Bernal Ave	5,394	5,393	0.0%	-1	D	D	no	NA
I-580—west of El Charro Rd	8,930	**9,120**	**2.1%**	**190**	**E**	**F**	**yes**	no
I-580—east of El Charro Rd	9,557	9,102	-4.8%	-455	F	F	no	NA
I-580—west of Livermore Ave	8,638	8,630	-0.1%	-8	F	F	no	NA
Arterials								
SR 84—east of I-680	1,687	1,695	0.5%	8	F	F	yes	no
SR 84—north of Stanley Blvd	2,599	2,567	-1.2%	-32	F	F	no	NA
SR 84—south of Airway Blvd	2,358	2,341	-0.7%	-17	F	F	no	NA
Stanley Blvd—west of SR 84	3,108	2,962	-4.7%	-146	F	F	no	NA
Stanley Blvd—west of Murrieta Blvd	1,615	1,620	0.3%	5	B	B	no	NA
Santa Rita Rd—north of Valley Ave	1,527	1,510	-1.1%	-17	C	C	no	NA
Holmes St—south of Murrieta Blvd	565	569	0.7%	4	D	D	no	NA
South Livermore Ave—north of East Ave	175	174	-0.6%	-1	D	D	no	NA
North Livermore Ave—south of Las Positas Rd	1,052	1,049	-0.3%	-3	D	D	no	NA
First St—south of Portola Ave	1,666	1,706	2.4%	40	E	E	no	NA
First St—south of I-580	1,988	2,044	2.8%	56	D	D	no	NA

Note:

Significance Criteria = Worsen to F or if F already, cumulative increase in velocity-to-capacity (v/c) ratio by > 3% and project makes positive contribution; considerable contributions in **bold**; if no or negative contribution, not considerable.

Source: Dowling Associates, Inc., 2006.

Table 3.15-12. El Charro Specific Plan Traffic Impact Segment Operations Analysis for Metropolitan Transportation System Segments, 2010, P.M. Peak

	Northbound/Eastbound							
	No Project	Project			No Project	Project		
Link Location	2010 P.M. Vol	2010 P.M. Vol	% Vol Diff	Contribution	2010 P.M. LOS	2010 P.M. LOS	Decline to F or Worsen F?	Change in V/C > 3%
Freeways								
I-680—north of SR 84	6,027	6,062	0.6%	35	F	F	yes	no
I-680—north of Bernal Ave	4,658	4,632	-0.6%	-26	D	D	no	NA
I-580—west of El Charro Rd	9,045	9,297	2.8%	252	F	F	yes	no
I-580—east of El Charro Rd	9,497	9,019	-5.0%	-478	F	F	no	NA
I-580—west of Livermore Ave	8,735	8,756	0.2%	21	F	F	yes	no
Arterials								
SR 84—east of I-680	1,684	1,664	-1.2%	-20	F	F	no	NA
SR 84—north of Stanley Blvd	2,793	2,794	0.0%	1	F	F	yes	no
SR 84—south of Airway Blvd	2,631	2,587	-1.7%	-44	F	F	no	NA
Stanley Blvd—west of SR 84	2,957	2,836	-4.1%	-121	F	F	no	NA
Stanley Blvd—west of Murrieta Blvd	1,487	1,497	0.7%	10	B	B	no	NA
Santa Rita Rd—north of Valley Ave	1,639	1,601	-2.3%	-38	D	D	no	NA
Holmes St—south of Murrieta Blvd	535	539	0.7%	4	D	D	no	NA
South Livermore Ave—north of East Ave	261	260	-0.4%	-1	D	D	no	NA
North Livermore Ave—south of Las Positas Rd	1,148	1,167	1.7%	19	D	D	no	NA
First St—south of Portola Ave	1,535	1,608	4.8%	73	D	D	no	NA
First St—south of I-580	1,458	1,545	6.0%	87	D	D	no	NA

	Southbound/Westbound							
	No Project	Project			No Project	Project		
Link Location	2010 P.M. Vol	2010 P.M. Vol	% Vol Diff	Contribution	2010 P.M. LOS	2010 P.M. LOS	Decline to F or Worsen F?	Change in V/C > 3%
Freeways								
I-680—north of SR 84	5,503	5,529	0.5%	26	E	E	no	NA
I-680—north of Bernal Ave	5,540	5,540	0.0%	0	E	E	no	NA
I-580—west of El Charro Rd	5,186	5,513	6.3%	327	C	C	no	NA
I-580—east of El Charro Rd	5,263	5,331	1.3%	68	C	C	no	NA
I-580—west of Livermore Ave	5,253	5,331	1.5%	78	C	C	no	NA
Arterials								
SR 84—east of I-680	1,317	1,313	-0.3%	-4	F	F	no	NA
SR 84—north of Stanley Blvd	2,302	**2,517**	**9.3%**	**215**	**F**	**F**	**yes**	**yes**
SR 84—south of Airway Blvd	2,965	2,594	-12.5%	-371	F	F	no	NA
Stanley Blvd—west of SR 84	1,324	1,302	-1.7%	-22	B	B	no	NA
Stanley Blvd—west of Murrieta Blvd	1,133	1,126	-0.6%	-7	B	B	no	NA
Santa Rita Rd—north of Valley Ave	3,644	3,511	-3.6%	-133	F	F	no	NA
Holmes St—south of Murrieta Blvd	667	670	0.4%	3	D	D	no	NA
South Livermore Ave—north of East Ave	484	472	-2.5%	-12	D	D	no	NA
North Livermore Ave—south of Las Positas Rd	746	664	-11.0%	-82	D	D	no	NA
First St—south of Portola Ave	1,618	1,615	-0.2%	-3	D	D	no	NA
First St—south of I-580	1,159	1,155	-0.3%	-4	D	D	no	NA

Note:

Significance Criteria = Worsen to F or if F already, cumulative increase in velocity-to-capacity (v/c) ratio by > 3% and project makes positive contribution; considerable contributions in **bold**; if no or negative contribution, not considerable.

Source: Dowling Associates, Inc., 2006.

As discussed above under "Environmental Setting," the section of SR 84 north of Stanley Boulevard would be widened to six lanes, expected to be complete by 2012. This improvement is programmed and funded. With the addition of a third lane in each direction, the impact on this MTS roadway segment would be less than significant. However, this improvement may not be in place in time to mitigate the impacts of the proposed Project in 2010, and thus a temporary significant and unavoidable impact may occur for a few years. As part of the proposed Project, it also was assumed that the two-lane extension of Jack London/Airway Boulevard would be in place by 2010; this east-west arterial would result in some traffic diversion from other parallel routes in the area. However, this impact may not be reduced to a less-than-significant level by 2010. Therefore, the project impact to SR 84 north of Stanley Boulevard is considered significant and unavoidable in the interim years until the six-lane project is built.

The following mitigation measures would ensure that the Project contributes a fair-share fee to assist in funding needed regional priority improvements along I-580 and SR 84 and reduces trips as feasible with new development.

Mitigation Measure TRA-4a: Contribute the Appropriate Tri-Valley Development Transportation Fee for All Developments that Generate New Trips

The City will collect the appropriate TVDT fee from all new development within the Specific Plan Area. The TVDT fee will apply to projects along I-580 and SR 84 affected by the project, as well as other regional transportation priorities.

Mitigation Measure TRA-4b: Contribute the Appropriate City of Livermore Traffic Impact Fee for All Developments that Generate New Trips

The City will collect the appropriate TIF from all new development within the Specific Plan Area. The TIF will apply to projects along I-580 and SR 84 affected by the Project, as well as other transportation priorities.

Mitigation Measure TRA-4c: Reduce Vehicle Trips through Transportation Demand Management Program

Consistent with General Plan Circulation Element goals and policies, the City will require development applicants to obtain the approval of a Transportation Demand Management program for proposed development that reduces peak hour project traffic volumes. Successful implementation of the program could reduce trips by as much as 5%–15%. The program will provide for trip-reducing features such as shuttle services to the Dublin/Pleasanton BART station and employee incentives or subsidies to encourage the use of public transportation. In addition, the plan will encourage the use of and provide employees with information for carpooling, bicycling, ride sharing, and alternative transportation and will encourage participation in guaranteed ride home programs. The program will include a requirement for the preparation

and delivery of annual monitoring results to the City to demonstrate ongoing compliance with the intent of the program.

Traffic Safety Impacts

Impact TRA-5: Potential Traffic Safety Issues Due to New Roadway Geometrics and Potential Quarry/Vehicle Conflicts—Less than Significant

The proposed Project includes new geometric changes to the study area roadway network. The traffic safety analysis, contained in Appendix E, focused on El Charro Road where the greatest potential traffic safety conflict could occur. The changes in lane geometry, queue lengths at intersections on El Charro Road, changes in travel paths for quarry trucks, and the interaction of quarry trucks were the specific focus of the traffic safety analysis.

El Charro Road Geometry

Proposed lane widths are adequate for mixed flow with large-wheelbase trucks. The design indicates two 12-foot through lanes in the southbound direction and two 12-foot through lanes with one 12-foot right-turn-only lane in the northbound direction.

A review of all turning movements indicates that the geometry of the lanes and curves is adequate to meet the design speed as well as circulation patterns for large-wheelbase vehicles. The northbound horizontal curve along El Charro Road between Jack London Boulevard and the I-580 intersection appears to meet the minimum radius requirements for an urban road with a design speed of 45 mph.

A review of the proposed grades indicated that there is ample room for providing adequate sight distance using vertical curves that satisfy Caltrans standards.

El Charro Road will be modified from the existing bridge structure over I-580 south. Freisman Road will be relocated such that it will no longer intersect El Charro Road. Its new alignment will result in a new intersection with the extension of Jack London Boulevard. Freisman Road would not be a routine path of travel for the quarry traffic. This relocation is seen as a positive step with respect to overall traffic circulation, given the additional traffic that will be added to El Charro Road by the extension of Jack London Boulevard and the connection of El Charro Road with Stanley Boulevard.

The proposed alignment for El Charro Road results in the reasonable transition of lanes between the previous segment (two lanes in each direction) to the lane geometry at the northerly approach of the El Charro Road and Jack London Boulevard intersection. There will be two through lanes in each direction, a northbound dedicated right-turn lane, a reservation for a southbound dedicated right-turn lane, and three southbound dedicated left-turn lanes.

The proposed intersection at El Charro Road and Jack London Boulevard is a T intersection that will have a new traffic signal. Sight distance is adequate for all approaches to this intersection. All through lanes are 12 feet, and the turn lanes are 12 feet wide. For northbound El Charro, there are three proposed lanes of approach, which include two dedicated through lanes and one dedicated right-turn lane onto eastbound Jack London Boulevard. On the north side of the intersection, there are three lanes.

For southbound El Charro Road, there will be two receiving lanes south of Jack London Boulevard. The curb radius for all curbs at each intersection is approximately 60 feet, which meets the design standards for large wheelbased trucks.

The merger of the two quarry access roads is accomplished reasonably by restricting the northbound access to a stop condition at the confluence with the easternmost access. The peak hour volume of 100 vehicles sharing this intersection will not create problems for the operators of the vehicles. Sight distance is adequate at this intersection.

The U-turn design is proper for merging vehicles. The demand from the quarry trucks and the exiting vehicles from the Johnson-Himsl project will be less than 600 vehicles in the peak hour. Therefore, the periodic U-turn vehicle will be accommodated easily.

Ultimate El Charro Road Geometry

The additional conflicts of left-turn movements at the intersection of El Charro Road and Jack London Boulevard due to increased volumes caused by the Specific Plan will be accommodated by the traffic signal operation. Protected left turns and separate signal cycles will provide for adequate protection for the additional vehicular conflict. No additional impacts are anticipated as a result of the opening of the Staples facility.

Queuing on El Charro Road

According to the traffic analysis performed by Dowling, cumulative conditions will impact the future intersections of El Charro Road and West Jack London Boulevard. The queuing length for the southbound traffic on El Charro Road making the left turn onto Jack London Boulevard requires sufficient room to accommodate more than 50 cars per cycle during the a.m. peak hour. This requires approximately 500 feet of length per lane. The length provided for the proposed Project's near-term condition (Figure 2-7) is approximately 550 feet per lane, which exceeds the length required to accommodate the vehicles per cycle during both the a.m. and p.m. peak hour periods, therefore preventing congestion along El Charro Road.

Stopping Sight Distance

According to AASHTO's *A Policy on Geometric Design of Highways and Streets* (American Association of State Highway and Transportation Officials 2004) the stopping sight distance for a street with a design speed of 45 mph is 360 feet. El Charro Road and the surrounding terrain are flat, and there are no visible obstructions that will interfere with meeting the AASHTO requirement.

Alternative Paths of Travel for Heavy Trucks

There are two alternative paths of travel for heavy trucks. Trucks will travel north and south along El Charro Road going to and from the quarry. The favored route for quarry-bound traffic is to eliminate the need for lane changing between the point where the quarry traffic leaves the quarry and where it arrives at the ramp ends for I-580. The proposed alignment for El Charro Road accomplishes this. Southbound El Charro Road does not require a lane change for quarry-bound traffic. Northbound El Charro Road effectively segregates quarry and westbound Jack London Boulevard traffic turning northward through signal operation, thus allowing trucks to access their desired lane well prior to approach to the I-580 ramps. Signage will be added to the northbound access and for southbound access along El Charro Road.

Lane Width Assessment

El Charro Road has mostly through- and turn-lane widths of 12 feet. The outside lanes next to the curb and gutter have 13-foot widths. The width of the lanes is sufficient for accommodating mixed flow vehicular traffic and meets Caltrans and AASHTO design guidelines for arterials.

Travel Speeds of El Charro Road

The Project Area does not have posted speed limits on El Charro Road. However, site observations indicate that the existing truck traffic operates at approximately 40 mph to 45 mph. The City has requested that El Charro Road have a design speed of 45 mph and that the terrain and geometry support such a design speed.

Accident Analysis

The accident data were reviewed for the type and severity of accidents. Accidents in the study area for El Charro between the quarry access and I-580 ramps have occurred approximately once per year.

According to the SWITRS, for the period from January 2002 until June 2004, El Charro Road near I-580 experienced three vehicle accidents. One accident involved a single vehicle running off the road and striking a fixed object on a cloudy day. Another accident included one vehicle sideswiping another under cloudy and dark conditions. The final accident involved a truck and an auto colliding in a broadside fashion on a clear day. Roadway conditions for all three accidents were dry.

The proposed roadway geometry and intersection controls were reviewed to assess whether the design as proposed may impact the frequency or severity of accidents. With the very low frequency of accidents under existing conditions, it can be stated that the volume of traffic to and from the quarry is low and that the volume of traffic for other destinations also is low. The addition of vehicular traffic onto El Charro Road by an order of magnitude of tenfold over existing conditions will systematically increase the number of accidents. The introduction of additional lanes of conflict from four points of conflict to 13 possible points of conflict also will increase the likelihood of accidents.

Although accidents are not statistically predictable, they are a function of vehicle miles traveled. Assuming that the vehicle miles traveled are proportional to the number of vehicles using El Charro Road, the number of accidents can be assumed to increase proportionately to the increase in traffic volume. Types of accidents will be different for the proposed Project than with the existing conditions. Traffic signal installations are likely to cause rear-end and side impact traffic accidents. Side impact collisions are caused by a lack of driver attention or unsafe driving (running a red light). Rear-end collisions are caused by a lack of driver attention. Merge lanes are likely to cause sideswipe and rear-end collisions. Weave conditions may cause side impact collisions due to a lack of driver attention. Therefore, the number of accidents is likely to substantially increase over existing conditions.

The severity of accidents is dependent on the vehicle mix, speeds, and the type of conflict (i.e., head on accidents are more severe than rear-end ones, etc.). The Specific Plan will increase the percentage of cars from the current mix of 33% significantly. Peak hour vehicle speeds are likely to be lower due to traffic v/c ratios being high and during nonpeak hours due to added traffic control devices. The types of conflicts are expected to be of the less severe type, given the addition of medians and traffic control devices and properly designed merge lanes.

Although the Specific Plan development increases the potential for accidents due to increased volumes and the potential for increased severity exists because of the change in vehicle mix (more cars mixed with same number of trucks), the proposed design, which includes added traffic control devices, relocating the Freisman Road intersection away from the interchange, adequate queuing distances, medians, and improved safety lighting, works as a reasonable precautionary measure to reduce the likelihood and severity of conflicts. As a result, the accident rate is expected to be similar to that of any other like facility.

Thus, the traffic safety impacts of the Project would be less than significant as designed.

Emergency Access

Impact TRA-6: Project-Caused Changes in Emergency Access—Less than Significant

The development of the Specific Plan Area will require the use of emergency services such as police and fire department responses. The effects on the demand for these services are described in section 3.13, "Public Services and Utilities." Preventing suitable response times and adequate emergency access to the development within the Specific Plan Area would result in a significant impact. However, the proposed Project includes new roadways, a new multipurpose trail, the widening and the extension of existing roadways, and other provisions for EVA during the construction and operation of Prime Outlets Livermore Valley and the full buildout of the Specific Plan Area.

The primary emergency vehicle route to the Specific Plan Area would be along I-580 to El Charro Road. As stated in the project description, a two-lane Jack London/Airway Boulevard Extension easterly from Road A would be needed to provide a local connection between the Specific Plan Area and the rest of the city's local street system and provide a secondary route for emergency vehicles. An EVA would be provided along the multiuse trail alignment if construction of the Jack London/Airway Boulevard Extension were delayed.

All proposed roads within the Specific Plan Area are designed to provide adequate travel space for fire protection and other emergency vehicles. Though the proposed Project would change emergency access routes through the addition and modification of roadways, the Project would provide for adequate access to the Specific Plan Area for emergency vehicles. This impact is considered less than significant. No mitigation is required.

Effects on Alternative Modes

Impact TRA-7: The Project Would Improve Pedestrian and Bicycle Facilities in the Project Area—Beneficial

As described above under "Environmental Setting," the Specific Plan Area is currently not pedestrian-oriented, and pedestrian crossing facilities are minimal or nonexistent. Similarly, bicycle facilities are also limited or nonexistent. With implementation of the proposed Project, roadways within the Specific Plan Area would be upgraded or designed to include new pedestrian and bicycle facilities to serve future uses planned for under the Specific Plan. Thus, the proposed Project would improve alternative mode usage in the Specific Plan Area. Therefore, this impact is considered beneficial.

Impact TRA-8: Changes in Transit Demand—Less than Significant

As described above, the Project will include new transit stops within the Specific Plan Area.

The transit trips generated by baseline and project conditions for LAVTA were forecast using the ACCMA Countywide Travel Demand Model and are

summarized in Appendix E. Future growth and development within the Project Area would not result in an increase to the ridership on LAVTA buses. Because of the nature of this Project, which is primarily a retail center in a suburban area, it would not attract significant transit trips to the project site. Rather, most retail shoppers are expected to travel by driving in this type of suburban setting. Therefore, the impacts on the LAVTA transit buses are considered less than significant.

The impacts of the Project on the BART system were assessed based on the ridership derived from the Countywide Travel Demand Model at the Dublin/Pleasanton station. The transit trips generated by baseline and project conditions for BART transit have been forecast using the ACCMA Countywide Travel Demand Model and are summarized in Appendix E. The Project would slightly increase ridership on BART. For analysis purposes, a conservative assumption was made that all daily home-based work project-related trips would occur during the peak hour. Based on this conservative assumption, the Project has the potential to generate five additional peak hour BART trips by year 2010. However, by the full buildout of the City's General Plan (year 2025), no project trips would be added to the BART system. These new trips would primarily access the Dublin/Pleasanton BART station. This minor increase in ridership would not impact BART service and therefore would result in less-than-significant impacts.

Construction-Related Impacts

Impact TRA-9: Project Construction Would Affect Traffic Flow and Circulation and Parking—Significant and Unavoidable (for I-580), Less than Significant with Mitigation (for Other Roadways and Intersections)

During the construction period, temporary and intermittent transportation impacts would result from truck movements as well as construction worker vehicles to and from the project site. The Project may require temporary or partial street closures along El Charro Road (during the expansion of El Charro Road), along Airway Boulevard (during construction of the Airway Boulevard Extension, if selected), along Freisman Road (during its relocation), and at the I-580 eastbound off- and onramps (during their improvement) to accommodate construction equipment and material. Estimated construction staging and duration for sites of the Project were not available for this EIR; therefore, a detailed assessment of construction-period impacts was not conducted.

Project construction would result in a temporary reduction of road capacities, could result in adverse traffic impacts during the peak commute hours, could require partial street closures, could disrupt traffic flows, and could affect access to the quarries and other uses along the affected roads.

The construction-related traffic could result in a temporary reduction to the capacities of El Charro Road because of the slower movements and larger turning radii of construction trucks compared with those of passenger vehicles.

Given the proximity of I-580 freeway ramps and the limited access to the project site, the local traffic impacts would be limited to El Charro Road. Truck traffic that occurs during the peak commute hours (7 a.m. to 9 a.m. and 4 p.m. to 6 p.m.) could result in worse levels of service and higher delays at local intersections than during off peak hours. The construction traffic would affect access along El Charro Road, the quarry in particular. Similar impacts also could occur along Freisman Road and Airway Boulevard.

Implementation of the following mitigation measure could reduce the severity of this impact on El Charro Road and other local roads and intersections; however, given the existing operations on I-580, it would not mitigate temporary effects on I-580 to a less-than-significant level. Therefore, this impact would remain significant and unavoidable for I-580 but be less than significant after mitigation for other locations.

Mitigation Measure TRA-9: Prepare and Implement a Construction Traffic Management Plan

Prior to the issuance of each building permit, the project applicants and construction contractor will meet with City staff to determine traffic management strategies to reduce, to the maximum extent feasible, traffic congestion during construction of this Project. The project applicants will develop a construction traffic management plan for review and approval by the City. The plan will include at least the following items and requirements.

- A set of comprehensive traffic control measures, including the scheduling of major truck trips and deliveries to avoid peak traffic hours, detour signs and flag person if required, lane closure procedures, signs, cones for drivers, and designated construction access routes. In addition, the information will include a construction staging plan for any public right-of-way used for each phase of the Project.
- Provisions for parking management and spaces for all construction workers for each phase of construction.
- Notification procedures for adjacent property owners regarding when major deliveries, detours, and lane closures will occur.
- The location of construction staging areas for materials, equipment, and vehicles.
- The identification of haul routes for the movement of construction vehicles that would minimize impacts on vehicular traffic, circulation, and safety; and a provision for monitoring surface streets used for haul routes so that any damage and debris attributable to the haul trucks can be identified and corrected by the project applicants.
- A process for responding to, and tracking, complaints pertaining to construction activity, including identification of an on-site complaint manager.

- For El Charro Road, the traffic control plan shall maintain at least one lane for quarry truck traffic at all times of the day and night during construction, to the maximum extent feasible. This can be achieved by constructing at least one new proposed lane outside of existing lanes first and then sequencing further construction phasing in order to preserve one open lane in each direction at all times. If certain construction requires temporary options that preclude two lanes of travel to and from the quarry, such construction shall be coordinated with the quarry operators to avoid the times of greatest hauling activity. This condition is likely to warrant construction at night to avoid substantive disruption.

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Chapter 4
Other CEQA Considerations

Introduction

In addition to an examination of project-level impacts, as provided in Chapter 3 of this EIR, CEQA requires an EIR to evaluate a project's effects in relationship to broader changes that are occurring or that potentially would occur in the surrounding environment. Accordingly, this chapter presents discussion of CEQA-mandated analysis for irreversible impacts, growth inducement, and cumulative impacts associated with the Project. It also presents certain variations to the Project—project alternatives—that have been or will be considered as options to approving the Project as spelled out in Chapter 2 of this EIR, as well as analysis of these alternatives' environmental effects.

Irreversible Impacts

Significant Irreversible Environmental Changes

State CEQA Guidelines 15126.2(c) requires an EIR to discuss a project's irreversible environmental changes associated with the usage of nonrenewable resources during its construction and long-term operation. This section also requires a discussion of the Project's irreversible changes related to potential environmental accidents.

The Project would result in the consumption of nonrenewable resources in several ways. Construction activity would consume petroleum products used to power many construction-related vehicles and pieces of machinery. Many of the materials used for on-site structures and infrastructure on these projects also would be nonrenewable. Once development is completed and operational, they would contribute to resources consumption by attracting patrons and visitors who would drive automobiles that burn petroleum products.

Similar to the specific development projects discussed above, construction of the roadway and infrastructure improvement programs addressed in this EIR would consume nonrenewable resources in the materials and fuel used. The operational

phase of these project components would result in a minor amount of resources consumption associated with facilities maintenance.

Apart from the specific projects addressed in this EIR, the Specific Plan would not directly result in resources consumption. However, the Specific Plan would indirectly result in resources consumption by enabling future projects.

Significant and Unavoidable Impacts

A significant and unavoidable impact is one that would cause a substantial adverse effect on the environment and for which no mitigation is available to reduce the impact to a less-than-significant level. The unavoidable significant environmental effects of the proposed Project are as follows.

- Impact VIS-2: Substantial Degradation of the Existing Visual Character of the Site and Its Surroundings
- Impact VIS-3: Creation of Substantial Light or Glare Adversely Affecting Day or Nighttime Views
- Impact AQ-3: Generation of Significant Levels of NO_x Emissions from Project Operations
- Impact TRA-2: The Addition of Project-Generated Traffic Would Contribute to Unacceptable Level of Service at Intersections during Peak Hours
- Impact TRA-4: The Addition of Project-Generated Traffic Would Contribute to Unacceptable Segment Operations under the 2010 Congestion Management Program Scenario
- Impact TRA-9: Project Construction Would Affect Traffic Flow and Circulation and Parking
- Cumulative Impact VIS-1: Cumulative Adverse Effects on a Scenic Vista and/or Cumulative Degradation of the Existing Visual Character of the Site and Its Surroundings
- Cumulative Impact VIS-2: Cumulative Effects on Views Due to Light or Glare
- Cumulative Impact AQ-2: Cumulative Generation of Significant Levels of NO_x Emissions
- Cumulative Impact BIO-2: Cumulative Impacts on Special-Status Wildlife Species, Riparian Habitats, Waters, and Wetlands
- Cumulative Impact BIO-3: Cumulative Impacts on Burrowing Owls and Nesting Birds
- Cumulative Impact BIO-4: Cumulative Impacts on Wildlife Movement
- Cumulative Impact TRA-2: Cumulative Contribution to Unacceptable Level of Service at Intersections During Peak Hours

- Cumulative Impact TRA-3: Cumulative Contribution to Unacceptable Segment Operations under the 2025 Congestion Management Program Scenario

- Cumulative Impact TRA-4: Cumulative Contributions to Unacceptable Freeway and Ramp Operations or Unacceptable Level of Service at Intersection during Peak Hours with Staples Ranch

- Cumulative Impact TRA-5: Cumulative Contributions to Unacceptable Freeway and Ramp Operations or Unacceptable Level of Service at Intersection during Peak Hours without the Stoneridge Drive Extension

- Cumulative Impact TRA-10: Cumulative Construction-Related Traffic Flow and Circulation Impacts

These impacts are discussed in Chapter 3, "Environmental Analysis," and in the "Cumulative Impacts" discussion in this chapter.

Growth Inducement

Section 15126(d) of the State CEQA Guidelines requires that an EIR discuss the extent to which a proposed project would directly or indirectly foster economic or population growth or the construction of new housing, including through removal of obstacles to growth.

By nature, the Specific Plan would induce growth in the area by approving future development on land that is currently vacant. The Specific Plan does not include a residential component, so the Project would not directly induce such growth. The commercial and industrial components of the Specific Plan would enable sources of growth for the state, regional, and City economy, including sales tax and real estate taxes. Jobs generated in future Specific Plan developments may attract new residents to surrounding areas, resulting in a potential indirect source of residential growth.

The roadway and infrastructure improvements addressed in this EIR would induce growth by extending and enhancing utilities and circulation systems in an area that is currently undeveloped. Such improvements can remove obstacles to growth outside of the Specific Plan and influence development in surrounding areas.

The Specific Plan will be consistent with the General Plan's land use designations for the area, further refining and developing alternatives that will fit within the BCP land use designation, including community/regional commercial uses and associated support services. Therefore, any growth associated with the Specific Plan has been accounted for and adequately planned in the General Plan.

Based on the Institute of Transportation Engineers (ITE) standard assumptions, the project could result in up to 2,900 jobs at full buildout. As noted above,

buildout of the site and thus the employment growth and indirect population growth resultant from buildout at the site was included in the City's recently updated General Plan.

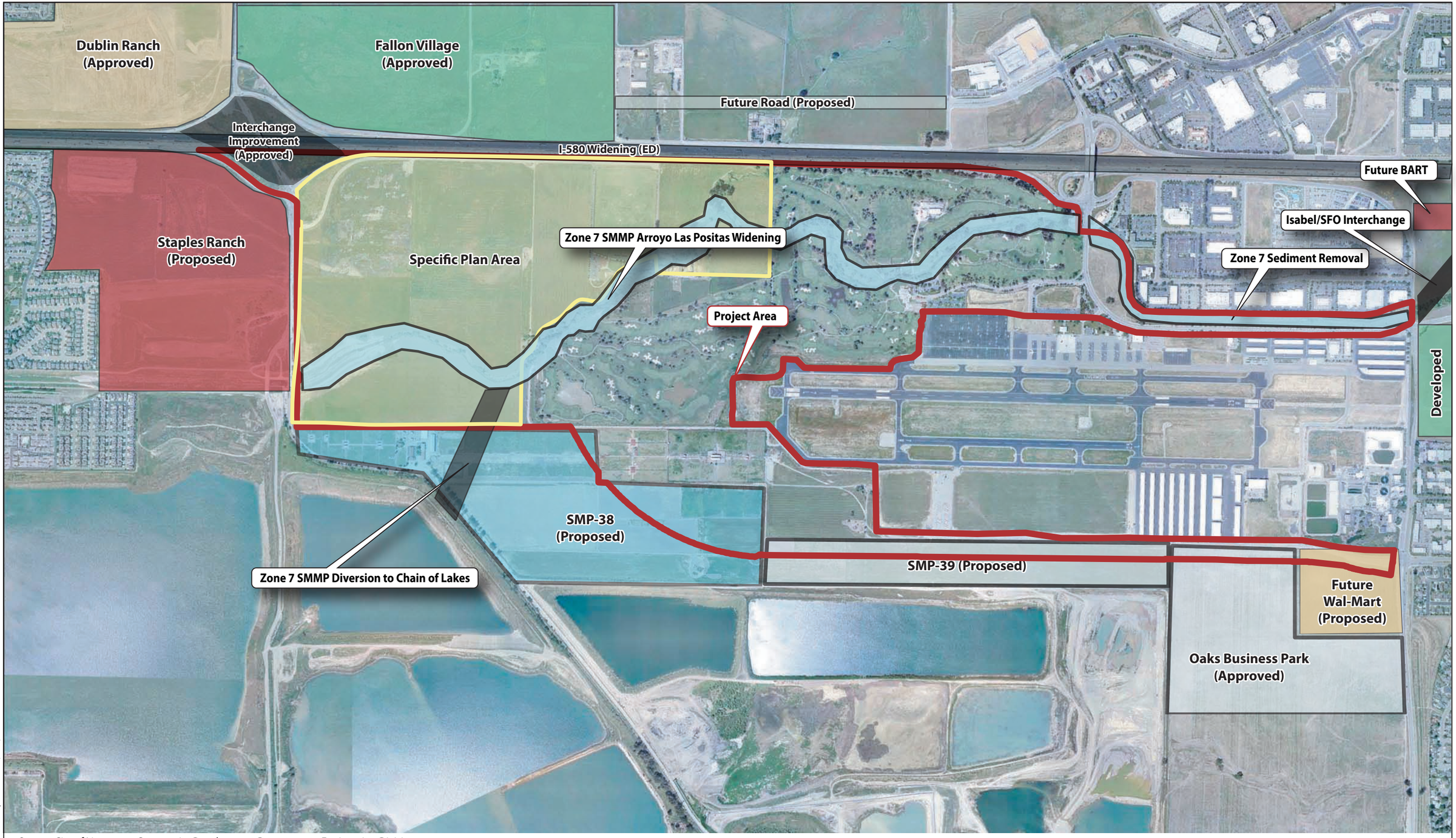
Cumulative Impacts

CEQA Analysis Requirements

Although the environmental effects of an individual project may not be significant when that project is considered separately, the combined effects of several projects may be significant when considered collectively. State CEQA Guidelines 15130 requires a reasonable analysis of a project's cumulative impacts, which are defined as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts." The cumulative impact that results from several closely related projects is:

> the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time (State CEQA Guidelines 15355[b]).

Cumulative impact analysis may be less detailed than the analysis of the Project's individual effects (State CEQA Guidelines 15130[b]). There are two approaches to identifying cumulative projects and the associated impacts. The *list* approach identifies individual projects known to be occurring or proposed in the surrounding area in order to identify potential cumulative impacts. The *projection* approach uses a summary of projections in an adopted General Plan or related planning document to identify potential cumulative impacts. Because of the complex nature of the proposed Project, this EIR uses both the list and projection approaches to cumulative analysis and considers the development plans of the City of Livermore and the surrounding jurisdictions of the Cities of Pleasanton and Dublin, as well as Alameda County. Figure 4-1 provides a visual representation of projects proposed in the vicinity of the Specific Plan Area. Table 4-1 lists which methodology was used for the cumulative analysis.



Source: City of Livermore, Community Development Department - Engineering Division

06137.06.004 Specific Plan EIR (11-06)

Jones & Stokes

Figure 4-1
Projects Adjacent to the Proposed Project Area

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Table 4-1. Cumulative Analysis Approach and Applicable Impact Zone by Resource Area

Resource Topic	Cumulative Analysis Approach	Impact Zone	
		El Charro Vicinity	Livermore–Amador Valley
Aesthetics and Visual Resources	List	X	
Agricultural Resources	List	X	
Air Quality	Projection		X
Biological Resources	List	X	
Cultural Resources	List	X	
Geology, Soils, and Paleontology	List	X	
Hazards and Hazardous Materials	List	X	
Hydrology and Water Quality	List/Projection	X	X
Land Use and Planning	List/Projection	X	X
Mineral Resources	List	X	
Noise	Projection		X
Population and Housing	Projection		X
Public Services and Utilities	Projection		X
Recreation	Projection		X
Transportation and Traffic	Projection		X

The analysis of cumulative effects considered the following cumulative developments and cumulative projected buildout.

Alameda County

- **Specific Plan for Livermore-Amador Valley Quarry Reclamation.** The Quarry Reclamation Specific Plan is generally intended to plan for the reclamation, productive reuse, and rehabilitation of the quarry area to the south of the El Charro Specific Plan Area, and to mitigate adverse effects of mining. The Quarry Reclamation Specific Plan includes the following components: maps showing staging plans that depict land and water configurations in the quarry area for the years 1995, 2010, and 2030; a profile of the Chain of Lakes system depicting land and water surface elevations; a map showing final elevations of reclaimed land areas; tabulations of land and water areas and volumes; policies; and implementation methods.
- **Rhodes & Jamieson Aggregate Mines.** The Aggregate Mines project is located immediately south of the El Charro Specific Plan Area. The

Aggregate Mines project would include a sand and gravel extraction operation on 212 acres located in Alameda County. The project would extract approximately 53,000,000 tons through the year 2030.

- **Staples Ranch.** See discussion under "City of Pleasanton" below.

City of Livermore

- **Oaks Business Park.** The Oaks Business Park project is located to the southeast of the Specific Plan Area, southwest of the junction of West Jack London Boulevard and Isabel Avenue. The project consists of a vesting tentative map to allow between 2.63 million and 2.9 million square feet of industrial, research and development, professional office, and ancillary office uses on approximately 177 acres. The project also includes a requested rezone from Light Industrial (I-2) to Planned Development–Industrial (PD-I-01-003). Construction is currently underway and the project is expected to be available for occupancy in 2007.
- **City of Livermore General Plan buildout.** The City estimates its current population to be 80,723. At full buildout of the General Plan, Livermore is expected to have a total population of approximately 105,077 residents.

City of Pleasanton

- **Stoneridge Drive Specific Plan.** The Stoneridge Drive Specific Plan was adopted in October 1989 by the City of Pleasanton for the 293-acre site located west of El Charro Road, south of I-580, north of the Kaiser Sand and Gravel site, and east of the Pleasanton Meadows residential neighborhood. The Stoneridge Drive Specific Plan area includes a mix of low-, medium-, and high-density residential, commercial, park, and school uses. Public improvements for the Specific Plan area include the extension of Stoneridge Drive, the improvement of El Charro Road, the improvement of the I-580/El Charro Road interchange, the expansion of flood control capacity within the Arroyo Mocho, the addition of a community park and several neighborhood parks, and the provision of an elementary school site. With the exception of expansion of the capacity of flood control capacity on Arroyo Mocho (completed in 2003), none of the other land uses have been developed to date.
- **Stoneridge Drive Specific Plan Amendment/Staples Ranch.** The Staples Ranch project is located immediately west of the Specific Plan Area across El Charro Road. The Staples Ranch project includes a 36-acre auto mall with 250,000 square feet of buildings; potential future expansion by about 5 acres, bringing the building areas total to 285,000 square feet; a senior care community with 1.4 million square feet of buildings; potential future commercial development of up to 130,000 square feet of retail or 210,000 square feet of nonretail uses on about 12 acres of the project site; potential future expansion of the retail or commercial uses by about 5 acres; a recreational skating rink and an approximately 17-acre park. A Notice of

Preparation for this project was released in July 2006. The NOP did not list a timeframe for construction and completion for the project.

- **City of Pleasanton 1996 General Plan buildout**. The City of Pleasanton estimates its current population to be 67,700. At full buildout of the current general plan, Pleasanton is expected to have a total population of approximately 74,500 residents.
- **City of Pleasanton General Plan Update and Potential Removal of Stoneridge Drive Extension**. The City of Pleasanton is presently updating its General Plan. One specific proposal under consideration is the removal of any extension of Stoneridge Drive through to El Charro Road to link up with I-580. The current General Plan calls for this extension as part of its circulation plan for the city. In the cumulative traffic analysis discussed below, additional analysis was conducted to consider the potential cumulative effects of removing the extension of Stoneridge Drive from the Pleasanton General Plan.

City of Dublin

- **Fallon Village.** The 1,132-acre Fallon Village project is located in the eastern Dublin area, generally bounded by I-580 to the south, Fallon Road and the Dublin Ranch development to the west, the easterly Dublin city limit line to the east, and the northerly edge of the Dublin general plan area to the north. The project includes 3,108 residential units; approximately 2.5 million square feet of nonresidential development; elementary schools; parks; open space areas; and a roadway, Upper Loop Road. A draft supplemental EIR was released for public review in August 2005.
- **Dublin Ranch.** The 1,700-acre Dublin Ranch project is located in the eastern Dublin area, generally bounded by I-580 to the south and Tassajara Road to the west. The project at buildout could result in greater than 1,500 residential units, approximately 95 acres of commercial areas, a middle school, a golf course, and nonresidential land uses. The entire project has been approved, and a majority of the project segments are nearly complete or are currently under construction.
- **Fairway Ranch.** The 25-acre Fairway Ranch project is located in the eastern Dublin area, located between Dublin Boulevard and Central Parkway, east of Keegan Street. The project includes the construction of 930 residential units, both multifamily and single-family. The entire project has been approved, and a majority of the project segments are nearly complete or are currently under construction.
- **DiManto General Plan Amendment Study.** The 82-acre General Plan Amendment project is located in the eastern Dublin area, generally bounded by I-580 to the south, Gleason Road to the north, and Tassajara Road to the west. The project includes the development of more than 25 acres of high-density residential units. The project is still undergoing planning review.
- **Dublin Gateway Medical Center.** The 7-acre Medical Center project is located in the eastern Dublin area, in the southwest corner of Dublin

Boulevard and Tassajara Road. The project includes the development of a 178,849 square foot medical complex. The project has been approved and is currently under construction.

- **City of Dublin General Plan 2002 buildout**. The City of Dublin estimates that its 2005 population was 39,931. At full buildout of the general plan, Dublin is expected to have a total population of between 65,000 and 70,000 residents.

Livermore–Amador Valley

- **Zone 7 Stream Master Management Plan.** The purpose of the SMMP is to develop a master plan that addresses flood protection and drainage issues, as well as identifying other issues and alternatives for management components within the major stream courses in the service area. The SMMP study area includes all arroyos and flood control channels located within 426 square miles of the Alameda Creek watershed inside the Zone 7 service area. The SMMP includes 45 individual projects intended to be multidisciplinary; that is, they are intended to meet as many of the resource area goals and objectives as possible in order to provide benefits in a number of areas in addition to the primary purpose of flood protection. In general, the SMMP would provide adequate flood protection in the channels in the Project Area through implementation of regional storage, sediment removal, low-flow channel installation, wetland creation, and riparian corridor enhancement to provide bank stabilization. In the project reach, the SMMP includes desilting the Arroyo Las Positas between Isabel Avenue and the golf course, widening the Arroyo Las Positas between Airway Boulevard through the golf course reach, and a bypass channel from the Arroyo Las Positas west of the golf course to the Chain of Lakes area to handle regional floodflows.

Roadway Projects

- **I-580 Widening and BART to Livermore.** ACCMA I-580 widening and BART future plans would affect areas along I-580. ACCMA is presently acquiring land along the I-580 corridor to facilitate future widening and the future alignment of BART in the median of I-580. BART plans include a potential station northwest of the intersection of Isabel Avenue and Airway Boulevard just east of the project study area.
- **Isabel Avenue/I-580 interchange.** The Caltrans project for the widening of Isabel Avenue and the Isabel Avenue/I-580 interchange includes the construction of a new interchange on I-580 between Airway Boulevard and Portola Avenue. The Isabel Avenue/I-580 interchange would improve access to Las Positas College, Costco, and other developing business and commercial centers north of I-580. As part of this project, the partial-access Portola Avenue interchange will be removed and replaced with a flyover extension of Portola Avenue that will connect to Isabel Avenue and North Canyons Parkway north of the freeway. This interchange will provide the

permanent connection between I-580 and Isabel Avenue/SR 84 and is expected to relieve congestion at the existing Airway Boulevard/I-580 interchange and enhance traffic circulation within the business/commercial area north of I-580. Project completion is expected in late 2009.

- **Widening of Isabel Avenue.** As the new SR 84, Isabel Avenue is ultimately planned to be six lanes from I-580 to Stanley Boulevard and four lanes from Stanley Boulevard to Vallecitos Road. The City of Livermore and ACTIA are currently performing preliminary engineering and environmental analysis for the Isabel Avenue widening project with the goal of identifying a phased series of feasible, fundable improvements on Isabel Avenue/SR 84. The draft environmental document for these improvements will be circulated for public comment sometime in mid- to late 2006.
- **I-580/El Charro Road/Fallon Road interchange.** The interchange improvements would reconfigure the existing interchange to increase capacity to accommodate future traffic volumes. The City of Dublin has completed a mitigated negative declaration for the project in 2000, and the project is awaiting final approval from Caltrans. Construction is anticipated to occur in phases starting in 2007, with completion expected in 2008.

Cumulative Impacts

Cumulative impacts for most issue areas are not quantifiable and are therefore discussed in general terms as they pertain to development patterns in the surrounding region. Exceptions to this are traffic, noise, and air quality (the latter two of which are associated with traffic volumes), which may be quantified by estimating future traffic patterns, pollutant emitters, traffic noise, etc. and determining the combined effects that may result.

Aesthetics

Cumulative Impact VIS-1: Cumulative Adverse Effects on a Scenic Vista and/or Cumulative Degradation of the Existing Visual Character of the Site and Its Surroundings—Cumulatively Considerable and Unavoidable

The existing regional setting mixes developed areas and large tracts of vacant land, some of which is planned for development to accommodate the future population growth. Residential, office, commercial, and recreational development has recently occurred, is currently occurring, and is planned to occur in the coming years; the Project addressed in this EIR is representative of that development.

Regional growth has combined and will continue to combine to create a cumulative aesthetic effect by converting undeveloped land into developed and occupied areas. Cumulative development entails grading/landform alteration, the erection of structures, and the installation of roadways and other infrastructure that has altered and will continue to permanently alter the study area's existing

visual character and views as perceived by residents and occupants of the study area, drivers traveling along freeways and roadways in the study area, and recreational users.

Development of the Specific Plan and implementation of the other planned development projects addressed in this EIR would represent the type of visual alterations that would combine to create a cumulative effect. Although the Specific Plan's 250 acres constitute a relatively small portion of the regional visual setting, the project's contribution to the cumulative effect is considerable because of its prominent and visible situation within the valley floor and along the I-580 corridor.

The proposed Project would partially impede the view of the southern Livermore hills, but as discussed in section 3.1, this is considered a less than significant project impact. Cumulative development of the area would disrupt and block scenic views of the agricultural open space, riparian vegetation, and ridgelines bounding the southern edge of the Livermore Valley from the north, as well as views of the picturesque rolling hills from the south and southwest. By blocking views of the ridgelines surrounding the southern end of the Livermore Valley, the cumulative development of this area with potentially obtrusive structures may not preserve or enhance the scenic vista from the designated I-580 Scenic Corridor.

The development of this region would permanently alter the remnant semirural character of portions of the Livermore Valley to an increasingly urban setting. No feasible mitigation is available to reduce the cumulative effect on visual character, or to mitigate the proposed Project's contribution to a less-than-considerable level. Consequently, the proposed Project's contribution to this cumulatively significant impact is considerable and unavoidable.

Cumulative Impact VIS-2: Cumulative Effects on Views Due to Light or Glare—Cumulatively Considerable and Unavoidable

The increased development of the Livermore Valley region to a more urban environment would contribute to additional light sources such as parking lot lights, structural lighting, landscape lighting, residential lighting, and additional vehicle headlights on new or extended roadways. The overall ambient light from the proposed Project also would contribute to substantial light and glare.

The Project's contribution to the cumulative effect is considerable because of its prominent and visible situation within the valley floor and contribution to traffic increases. No feasible mitigation is available to reduce the cumulative effect on light and glare. Consequently, the proposed Project's contribution to this cumulatively significant impact is considerable and unavoidable.

Agricultural Resources

Cumulative Impact AG-1: Cumulative Conversion of Farmlands to a Nonagricultural Use—Less than Cumulatively Considerable with Mitigation

Agriculture has been a crucial component of the economy and livelihood of area residents since the initial European inhabitation of the Livermore Valley and the surrounding region. The region—especially its valley areas—is underlain by soils that are particularly suitable for agricultural production. Suitable soil and available irrigation led the DOC to map many areas of the region as Prime Farmland, Unique Farmland, and Farmland of Statewide Importance, which are all considered by the state to be important agricultural resources. Past and present development patterns within the region have converted much of the suitable agricultural land to nonagricultural uses. Between 2000 and 2002 alone, 1,274 acres of farmland in Alameda County were converted to other uses (California Department of Conservation 2006a). This trend is likely to continue, resulting in the cumulative recession of agricultural land and the loss of Prime Farmland, Unique Farmland, and Farmland of Statewide Importance. Although this loss is identified and planned for in both City and County general plans, continuing development nonetheless represents a significant cumulative impact on farmlands in Alameda County.

The Project's individual contribution to the loss of Prime Farmland and conversion of agricultural land to nonagricultural uses would be less than significant on a project basis due to the small amount of project conversion of Prime Farmland and the requirement of Mitigation Measure AG-1, which will require the offset of Prime Farmland lost by preservation at a 1:1 ratio.

Cumulative development that would directly contribute to the conversion of farmlands adjacent to the Project Area include the R&J Aggregate Mines and Staples Ranch. For these reasons, this would be a significant adverse cumulative impact. However, the implementation of Mitigation Measure AG-1 would reduce the project's contribution to a less-than-considerable level.

Cumulative Impact AG-2: Cumulative Conflicts with Existing Zoning for Agricultural Uses or a Williamson Act Contract—Not Cumulatively Considerable

As discussed in section 3.2, the Specific Plan would not conflict with a Williamson Act contract or conflict with zoning or land uses as defined in the City's General Plan. Therefore, the proposed Project would not contribute considerably to cumulative effects specific to agricultural land uses, zoning designations, or Williamson Act contracts.

Air Quality

Any proposed project that would individually have a significant air quality impact also would be considered to have a considerable cumulative air quality impact. For any project that does not individually have a significant operational

air quality impact, the determination of whether the impact is nonetheless a cumulatively considerable net increase, and therefore a considerable cumulative impact, is based on an evaluation of the consistency of the project with local general plans and with the regional air quality plan (i.e., the BAAQMD Clean Air Plan).

Cumulative Impact AQ-1: Cumulative Concentrations of CO—Not Cumulatively Considerable

CO modeling for this EIR indicated that no violations of the state or federal 1- or 8-hour CO standards are anticipated in the Project Area for baseline or future year conditions for all project scenarios including cumulative scenarios (section 3.3, "Air Quality," and Appendix AQ). Therefore, the impact of the proposed Project's traffic conditions on ambient CO levels in the Project Area is not considered cumulatively considerable.

Cumulative Impact AQ-2: Cumulative Generation of Significant Levels of NO_x Emissions—Cumulatively Considerable and Unavoidable

As discussed in section 3.3, computer modeling of future emissions resulting from cumulative development indicate NO_x levels in excess of BAAQMD thresholds. However, this exceedance in NO_x emissions is only expected to be short-term to medium-term, as new developments in technology would increasingly become available that would decrease overall emissions. While the implementation of Mitigation Measure AQ-3 would offset some of the increase in NO_x emissions associated with the proposed Project, it is not anticipated to reduce the Project's contribution to a less-than-considerable level.

No feasible mitigation is available to reduce the cumulative effect on NO_x emissions or to mitigate the proposed Project's contribution to a less-than-considerable level. Consequently, the proposed Project's contribution to this cumulatively significant impact is considerable and unavoidable.

Biological Resources

Cumulative Impact BIO-1: Cumulative Impacts on Special-Status Plants—Not Cumulatively Considerable

The proposed Project would not have any direct impact on special-status plants, as discussed in section 3.4, "Biological Resources." As such, implementation of the proposed Project would not considerably contribute to cumulative impacts on special-status plant species.

Cumulative Impact BIO-2: Cumulative Impacts on Special-Status Wildlife Species, Riparian Habitats, Waters, and Wetlands

Vernal Pool Fairy Shrimp and Vernal Pool Tadpole Shrimp—Less than Cumulatively Considerable with Mitigation

Implementation of the proposed Project may directly impact VPFS and VPTS, by converting wetland habitat or by the loss of individuals. If present, the loss of

VPFS and VPTS due to the implementation of the proposed Project can be mitigated with Mitigation Measures BIO-2a and BIO-2b, described in section 3.4. This would reduce the proposed Project's impacts on VPFS and VPTS to levels that are less than considerable. Furthermore, VPFS and VPTS are federally protected species that require full mitigation for all projects that would result in potential losses. Therefore, the cumulative impacts on these shrimp species resulting from the cumulative development of the Project Area would be mitigated to less-than-significant levels.

California Red-Legged Frog, California Tiger Salamander, Western Pond Turtle, Riparian Habitats, Waters, and Wetlands—Cumulatively Considerable and Unavoidable with Mitigation

Implementation of the Specific Plan would directly impact riparian habitat and these special-status species by resulting in the loss of habitat or individuals. Mitigation measures that would reduce impacts on these species and riparian habitat to a less-than-significant level are BIO-3a, -3b, -3c, -3d, and -3e; BIO-4a, -4b, and -4c; BIO-5; BIO-7a and -7b; and BIO-8a, -8b, and -8c, outlined in section 3.4 of this EIR. However, the combined cumulative development of the proposed Project, the Staples Ranch project, new quarrying, roadway projects, residential projects in Dublin, and the SMMP flood control improvements would result in a significant loss of habitat for these species and riparian habitat that is not amenable to project-by-project mitigation because the overall area of contiguous habitat in the area where Livermore, Pleasanton, and Dublin meet will be substantially reduced and eliminated over time. The combined development of the proposed Project and the Zone 7 SMMP would result in a significant loss of riparian habitat along the Arroyo Los Positas and Cottonwood Creek. While the Project's effects on riparian habitat can be mitigated to a less-than-significant level through project-level mitigation identified in section 3.4, future desilting and the ultimate widening of the Arroyo Las Positas could result in a permanent loss of riparian habitat. It may be feasible to maintain and restore portions of the creeks and their immediate margins themselves (as proposed by mitigation in section 3.4), but the areas beyond the creek margins will be converted to quarry, commercial, residential, and roadway uses, and the carrying capacity for these species and others will be substantially reduced.

Therefore, the proposed Project would contribute considerably to cumulative impacts on these species and riparian habitat. Absent an adopted design for creek widening that fully maintains extant riparian value and habitat for the species noted above, there is no feasible mitigation that would reduce the cumulative effects of development on these three special-status species' riparian habitat to a less-than-significant level. Consequently, the proposed Project's contribution to this cumulatively significant impact is considerable and unavoidable.

Cumulative Impact BIO-3: Cumulative Impacts on Burrowing Owls and Nesting Birds—Cumulatively Considerable and Unavoidable with Mitigation

As discussed in section 3.4, the development of the proposed Project would result in the removal of nesting habitat for special-status birds and raptors that reside in the Project Area. However, implementation of Mitigation Measure BIO-6 in

section 3.4 would reduce project-related impacts to less-than-significant levels by scheduling construction during nonbreeding seasons; conducting preconstruction nest surveys; and providing compensation land, as appropriate, for burrowing owls. The cumulative development projects planned in the area also would be responsible for compliance with California Fish and Game and MBTA Codes regarding the preservation of active nests, eggs, and young. Thus, the cumulative impact on nesting birds can be mitigated to a level that is less than cumulatively significant. However, cumulative development would result in substantial permanent conversion of habitat south of I-580, such that it is unlikely that burrowing owls in particular would be sustainable in this area. This permanent loss of habitat, even if mitigated by individual projects through off-site compensation and avoidance of disruptions of nesting during construction, is cumulatively significant, and the Project's contribution is considerable.

Cumulative Impact BIO-4: Cumulative Impacts on Wildlife Movement—Cumulatively Considerable and Unavoidable with Mitigation

As discussed above in Cumulative Impact BIO-2, the implementation of the Specific Plan would directly impact riparian habitat. This loss and disturbance to riparian habitat would result in the fragmentation or isolation of important wildlife habitats or the disruption of natural wildlife movement corridors. Mitigation Measures BIO-3a, -3b, -3c, -3d, and -3e; BIO-4a, -4b, and -4c; BIO-5; BIO-7a and -7b; and BIO-8a, -8b, and -8c have been described in section 3.4 of this EIR to minimize impacts on riparian habitat and wildlife movement associated with the proposed Project. However, the combined development of the proposed Project and the Zone 7 SMMP would result in a significant loss of riparian habitat along the Arroyo Los Positas and Cottonwood Creek. Therefore, the proposed Project in combination with other development would considerably contribute to cumulative impacts on wildlife movement. Although mitigation is noted above for riparian habitat and supported special-status species, no feasible mitigation is available to mitigate the proposed Project's contribution to a less-than-considerable level along this reach of the Arroyo Las Positas. Consequently, the proposed Project's contribution to this cumulatively significant impact is considerable and unavoidable.

Cumulative Impact BIO-5: Cumulative Impact on Trees—Less than Cumulatively Considerable with Mitigation

Construction activities associated with the proposed Project could potentially result in the disturbance or loss of individual protected trees. However, implementation of Mitigation Measures BIO-7a and -7b and BIO-11a, included in section 3.4, would reduce project-related impacts to less-than-significant levels. The cumulative development projects planned in the area, including Staples Ranch, Zone 7, and Rhodes & Jamieson Aggregate Mines, also would be responsible for compliance with City and County tree ordinances regarding the preservation of protected trees. As individual protected trees can be feasibly replaced through mitigation, no considerable contribution is identified for the proposed Project.

Cumulative Impact BIO-6: Cumulative Impact on Habitat Conservation Plans—No Impact

The proposed Project is not located within habitat conservation plan or natural community conservation plan areas. Therefore, implementation of the proposed Project would not contribute to a cumulatively significant impact on habitat conservation plans.

Cultural Resources

Cumulative Impact CR-1: Cumulative Impacts on Known and Undiscovered Cultural Resources—Less than Cumulatively Considerable

The Livermore Valley is known to have been an active area of Native American life, with inhabitation dating back to 3370 BC. Many prehistoric sites have been discovered by previous archaeological investigation over the years, and it is likely that additional, undiscovered sites exist within the area, including on land that is both developed and undeveloped. Past development within the region has likely disturbed and destroyed prehistoric resources, especially development occurring prior to the establishment of today's strict regulations that guard against impacts on cultural resources. Future development within the region must adhere to CEQA regulations that call for careful investigation and documentation of sites for the presence of cultural resources, and for mitigation where significant sites are noted. Adherence to these regulations would prevent a future cumulative loss of important resources within the region.

Specific to the project site, section 3.5 of this EIR identifies the Arroyo Las Positas and a 1,000-foot buffer area as highly sensitive for the presence of known and undiscovered archaeological resources. The Arroyo Las Positas, which traverses diagonally through the Specific Plan Area, is not completely contained within the Specific Plan Area. Without proper consideration of the CEQA regulations pertaining to investigation, documentation, and mitigation of archaeological resources, the Project and cumulative development along the Arroyo Las Positas could result in a cumulative impact to cultural resources and a loss of the information potential of locally occurring artifacts. However, all cumulative development would be required to adhere to state regulations related to cultural resources, thereby avoiding a cumulative impact and the Project's contribution to such.

Similarly, CEQA regulates the investigation, documentation, and mitigation for significant historical resources; proper adherence to these regulations, as mandated by state law, would prevent cumulative impacts on historical resources. Furthermore, section 3.5 of this EIR states that the project site is devoid of significant historical resources; therefore, there is no potential for the Project to contribute to any cumulative impact on historical resources that could occur as a result of future development.

Geology, Soils, and Paleontology

Cumulative Impact GEO-1: Cumulative Impacts of Development in Geologically Hazardous Areas—Less than Cumulatively Considerable

Cumulative impacts related to geology and soils could occur where regional development patterns place structures and residents/occupants in areas susceptible to geological hazards. A jurisdiction's general plan process includes the mapping of such areas in order to influence development patterns away from particularly hazardous locations or to identify where special study and architectural/engineering measures would be required to ensure building safety. Regional geological concerns include seismic ground cracking, intense seismic shaking, soil liquefaction, slope stability, and soil shrinking/swelling. Local general plans, including those for the City and the County, require the preparation of geotechnical reports for development projects with potential geological hazards; these reports specify the potential hazards and the relevant building code regulations that must be met in order to ensure structural safety.

As is the case for the majority of California because of widespread seismic activity, past, present, and future cumulative development in the region has and will continue to erect structures and place residents/occupants in areas that are susceptible to seismic ground shaking. Strict building code regulations are in place to ensure that structures properly account for seismic shaking and other seismically related hazards. The Specific Plan is within an area that is identified as having a high liquefaction potential; structures and infrastructure installation/improvements proposed in similarly zoned land throughout the region must comply with building code regulations to ensure proper construction and consideration for potential liquefaction-related hazards. Common adherence to mandatory building code regulations throughout the region will prevent a significant cumulative impact associated with placing new structures on land susceptible to geological hazards. The Specific Plan Area is on flat land, and the Project would not contribute to any cumulative impacts associated with landslide hazards that may exist in the region.

Cumulative Impact GEO-2: Cumulative Accelerated Runoff, Erosion, and Sedimentation—Less than Cumulatively Considerable

As described in chapter 3.6 of this EIR, impacts on runoff, erosion, and sedimentation would be considered less than significant with the implementation of the mitigation measures identified. Additionally, any new development would be required to adhere to City, County, state, and federal requirements for the containment of runoff, erosion, and sedimentation as part of the CEQA process. These impacts can be mitigated at the project level, and thus implementation of the Specific Plan would not contribute to cumulative runoff, erosion, or sedimentation.

Cumulative Impact PAL-1: Cumulative Destruction of Vertebrate or Otherwise Scientifically Significant Paleontological Resources—Less than Cumulatively Considerable

As discussed in section 3.6 of this EIR, construction of the Specific Plan could directly impact paleontological resources because of the unique soil units found

in the Project Area. However, these impacts would be reduced to less-than-significant levels through the implementation of the identified mitigation measures. Thus, the implementation of Mitigation Measures PAL-1a and PAL-1b would reduce the Project's cumulative contribution of impacts on paleontological resources to a level that is less than cumulatively considerable.

Hazards and Hazardous Materials

Cumulative Impact HAZ-1: Cumulative Significant Hazards to the Public or the Environment—Less than Cumulatively Considerable

Cumulative impacts related to hazards and hazardous materials could occur where regional development patterns place structures and residents/occupants in proximity to significant sources of safety hazards or hazardous materials emissions, or where regional patterns develop new cumulatively hazardous sources near sensitive receptors.

The Specific Plan is adjacent to the Livermore Municipal Airport and proposes to construct habitable structures within the Livermore Municipal Airport's APA. Any development projects proposed within the APA would be subject to coordination with and approval from the FAA to ensure that structures and other areas do not infringe on the safe operations at the airport. This includes assurance that new sources of light and glare would not combine to create unsafe conditions for pilots. No impacts related to safety hazards near an airport were identified for the proposed Project, and therefore no cumulative impacts of this nature would result from the implementation of the Project.

The gas station proposed in the Specific Plan would require the storage and transport of petroleum fuels. Hazardous material transport and storage is highly regulated by City, County, state, and federal regulations. While the proposed Project would not contribute directly to significant hazards resulting in the transport and storage of gasoline, the potential exists for accidental release due to vehicle accidents. Cumulative development of the area would result in increased traffic (see section 3.15) and accident potential. However, as with the transport and storage of hazardous materials, the treatment of accidental spills and releases are highly regulated, and procedures and protocol exist to mitigate potential impacts to less-than-significant levels. Thus, the proposed Project would have less-than-cumulatively-considerable contribution to impacts on the exposure of the public to hazardous materials.

Hydrology and Water Quality

Cumulative Impact WQ-1: Cumulative Construction Effects on Water Quality—Less than Cumulatively Considerable

Project construction, which would include earth-moving activities, is a potential source of erosion, sedimentation, and diminished water quality. However, as discussed in section 3.8 of this EIR, these impacts resulting from the proposed Project can be mitigated to less-than-significant levels. As with all projects

proposing development near a water body, regulatory controls are required, to ensure that water quality is not compromised during construction and operational activities. As the proposed Project, and nearby developments, also would be required to comply with this permit, the Project's contribution to this cumulative impact would be considered less than cumulatively considerable.

Cumulative Impact WQ-2: Cumulative Effects of Increased Surface Runoff and Associated Water Quality Impacts on Local Waterways—Less than Cumulatively Considerable with Mitigation

The proposed Project contains design elements that would sufficiently capture and treat runoff associated with buildout of the Specific Plan. Such measures, discussed in detail in section 3.8 of this EIR along with the recommended Mitigation Measure WQ-2, would effectively reduce the proposed Project's anticipated impacts to local waterways to less-than-significant levels. As such, the proposed Project would not considerably contribute to a cumulative impact regarding runoff and water quality degradation of local waterways.

Cumulative Impact WQ-3: Cumulative Degradation of Water Quality through the Accidental Release of Hazardous Materials—Less than Cumulatively Considerable with Mitigation

The accidental release of hazardous materials associated with the proposed Project has the potential to impact water quality. However, as discussed above and in sections 3.7 and 3.8 (Mitigation Measures WQ-3a and -3b) of this EIR, the treatment of accidental spills and releases is highly regulated, and procedures and protocol exist to mitigate potential impacts to less-than-significant levels. Thus, the proposed Project would have contribute less-than considerably to impacts on water quality through the accidental release of hazardous materials.

Cumulative Impact WQ-4: Cumulative Effects on Impaired Water Bodies—Less than Cumulatively Considerable with Mitigation

As with the treatment of runoff, the proposed Project contains design elements that would sufficiently limit the use of contaminants that could potentially increase contamination on impaired water bodies. Such measures, Mitigation Measures WQ-1b and WQ-2, discussed in detail in section 3.8 of this EIR, would effectively reduce the proposed Project's anticipated impacts to impaired waterways to less-than-significant levels. As such, the proposed Project would not considerably contribute to a cumulative impact regarding the contamination of impaired waterways.

Cumulative Impact WQ-5: Cumulative Effects of Increased Sediment and Contaminants in Groundwater and Surface Water as a Result of Infrastructure Failure—Less than Cumulatively Considerable

The proposed Project includes plans and policies regarding the design and installation of infrastructure that would be sufficient to serve projected demands. By adhering to its design policies, which would minimize the potential for ruptures, the proposed Project would not considerably contribute to this cumulative impact.

Cumulative Impact WQ-6: Cumulative Effects on Surface and Groundwater Quality from Trenching or Excavation below the Water Table—Less than Cumulatively Considerable with Mitigation

The Project Area and adjacent parcels are likely to contain areas in which the groundwater table would be exposed during construction. Depending on the type and depth of excavation required for any development project, the potential of contamination of the water table exists. However, protocols and procedures regarding construction activities near water bodies and the handling of hazardous materials are in place to ensure that impacts to water quality would be minimized. By adhering to these regulations, and Mitigation Measure WQ-6, described in section 3.8, the proposed Project would not considerably contribute to cumulative impacts on groundwater quality.

Cumulative Impact WQ-7: Cumulative Effects on Groundwater Supplies or Interference with Groundwater Recharge—Less than Cumulatively Considerable

Groundwater supplies are not anticipated to be used in the operations of the proposed Project. However, the increased amounts of impervious surfaces due to development of the area could lead to impacts on groundwater recharge.

Design features of the proposed Project include the use of alternative types of paving and bioswales that would collect stormwater runoff and allow for recharge, although at a slightly reduced level.

The Aggregate Mines project, which is immediately adjacent to the Project Area, also would minimize impacts to groundwater recharge by pumping water collected from operational activities to existing nearby storage ponds. Furthermore, upon completion of mining activities, the Aggregate Mines site would be reclaimed as water management facilities for the storage of reclaimed or recycled water.

Thus, by implementing design features and maximizing groundwater recharge potential, the proposed Project's contribution to the cumulative groundwater impacts would be less than cumulatively considerable.

Cumulative Impact WQ-8: Cumulative Flood Hazard Impacts—Less than Cumulatively Considerable with Mitigation

Portions of the Specific Plan Area and surrounding parcels are in the 100-year floodplain of the Arroyo Las Positas and the Arroyo Mocho. As such, proposed development in this floodplain could have cumulative impacts on local and regional hydrology during a flood event. As described in section 3.8, the proposed Project could have a significant impact on flooding by impeding or redirecting floodflows related to the widening of Airway Boulevard. However, flood control elements incorporated into the proposed project design and Mitigation Measure WQ-8, described in section 3.8, would reduce the Project's impacts to less-than-significant levels.

Future developers in the Specific Plan Area would be required to design and implement measures to ensure that drainage systems would be designed in accordance with the City's and other applicable flood control design criteria. As

a performance standard, measures to be implemented from the individual drainage concept plans will provide for no net increase in peak stormwater discharge relative to current conditions and ensure that 100-year flooding and its potential impacts are maintained at or below current levels and that people and structures are not exposed to additional flood risk. The future design of the Airway Boulevard widening will be required to take account of flooding and potential geomorpholical effects. As discussed below, the project has been designed and mitigated to ensure that it will not impede the ability to implement regional flood control measures that are designed to address cumulative flooding impacts.

As such, the project design and mitigation measures would ensure that the proposed Project would not contribute to offsite flooding impacts and thus would not considerably contribute to cumulative impacts of flooding and flooding hazards.

Cumulative Impact WQ-9: Cumulative Effects on Regional Flood Control Improvement through the Zone 7 Stream Management Master Plan—Less than Cumulatively Considerable with Mitigation

The Zone 7 SMMP project would create flood control improvements in the area, thereby reducing future flooding conditions. The project has been designed to be compatible with future regional flood control facilities, and specific mitigation (Mitigation Measures WQ-11a and -11b, described in section 3.8) is recommended to ensure that the Project does not become an impediment to future flood control measure implementation. No other projects would similarly impact Zone 7's plans for flood control improvements along the project reach of the Arroyo Las Positas. By minimizing direct impacts, the proposed Project would not contribute to a considerable cumulative impact on regional flood control.

Land Use and Planning

Cumulative Impact LUP-1: Cumulative Effects of Development on the Physical Division of an Established Community—Less than Cumulatively Considerable

The increasing development of the region would serve to connect the existing Cities of Pleasanton, Livermore, and Dublin. As such, the proposed Project would benefit these communities by placing retail in a central location that could be accessed by residents of surrounding cities. Thus, the implementation of the Specific Plan would not contribute to the division of a community, directly or cumulatively.

Cumulative Impact LUP-2: Cumulative Effects on Existing or Future Land Uses and Policies—Not Cumulatively Considerable

Similar to aesthetics impacts, cumulative development in the region is changing the area's character from that of a sparsely settled, rural, undeveloped agricultural community to one characterized by urban development of many sorts. The Project contributes considerably to this cumulative impact by proposing a Specific Plan that would convert undeveloped agricultural land to urban uses, development of the individual projects that would erect structures and

infrastructure, and the extension/improvement of roadways in the Project Area. However, this development is consistent with the general plans maintained by the City of Livermore and the surrounding jurisdictions.

The general plan EIR found that implementation of the General Plan, in combination with foreseeable and ongoing development in the region, would result in extensive land use changes on a regional level, including the development of thousands of acres of undeveloped land into residential, commercial, industrial, and institutional uses. However, the general plan's contribution to cumulative land use impacts was found to be less than significant with the implementation of the mitigation measures recommended in the general plan EIR. Additionally, implementation of the general plan would increase the density within the City of Livermore UGB and would result in more transit-oriented development. Because the Specific Plan is consistent with the general plan land use designations, the Specific Plan's contribution to cumulative land use impacts also is considered less than considerable, and no mitigation is required.

Cumulative land use and planning impacts also could result from regional development placing incompatible uses adjacent to one another. Within a particular jurisdiction, this is prevented by the general plan process, which is intended to formulate a rational pattern for development to follow that would avoid improper juxtaposition of uses. The environmental review process afforded by CEQA allows communication between neighboring (or otherwise related) jurisdictions, ensuring that incompatible uses across jurisdictional boundaries are avoided. The Project would not contribute to any cumulative land use and planning impacts.

Mineral Resources

Cumulative Impact MIN-1: Cumulative Effects on Mineral Resources—Less than Cumulatively Considerable with Mitigation

Portions of the region are actively mined for sand and gravel that are used as aggregate in the production of cement. Mining of these materials leads to their gradual depletion—a cumulative impact—while incremental development of areas with remaining suitable mineral resources also occurs, resulting in a cumulative impact. Although much of the southern portion of the Livermore Valley floor south of I-580 is mapped in the City of Livermore General Plan, the Specific Plan Area is not mapped as such and is not underlain by extraction-quality mineral resources. The proposed Rhodes & Jamieson Aggregate Mines site would be located directly south of the proposed project site and would take advantage of the mineral resources that have been identified in that area.

While the Jack London Boulevard Extension option of the proposed Project would pose a direct impact on mineral resources, by encroaching on a proposed mineral extraction site (Aggregate Mines), the implementation of Mitigation Measures MIN-2a, MIN-2b, and MIN-2c would reduce impacts to less-than-significant levels.

Cumulative projects—in particular, Staples Ranch—would introduce additional cumulative traffic on El Charro Road that could conflict with quarry traffic. However, as explained in section 3.15, "Transportation and Traffic," with mitigation, safety concerns about the mixing of commercial, commuter, and quarry traffic can be handled through proper design measures such that a cumulatively significant impact would not occur.

Therefore, the proposed Project would not considerably contribute to cumulative impacts on mineral resources.

Noise

Cumulative Impact N-1: Cumulative Exposure of Planned Noise-Sensitive Land Uses within the Specific Plan Area to Aircraft Noise from Livermore Municipal Airport—Less than Cumulatively Considerable

The City of Livermore General Plan contains noise contours for the year 2025. The 2025 noise contours are applicable to the future 2030 conditions for the Specific Plan Area. Under the City of Livermore General Plan, commercial development, parks, hospitals, and churches are considered normally acceptable compatible land uses at noise levels up to 70 dB CNEL/L_{dn}. The 60 dB CNEL/L_{dn} contour for the year 2025 is predicted to graze the southern boundary of the planned Children's Hospital and Crosswinds Church properties. The planned trails adjacent to West Jack London Boulevard also may be affected, but these trails would also lie just inside the 60 dB CNEL/L_{dn} contour. Aircraft noise levels are not expected to exceed 70 dB CNEL/L_{dn} at Specific Plan land uses; therefore, the project's contribution to a cumulative impact is considered to be less than concsiderable.

Cumulative Impact N-2: Cumulative Exposure of Existing and Future Noise-Sensitive Land Uses to Increased Traffic Noise Resulting from Cumulative Development—Less than Cumulatively Considerable

Tables 4-2 and 4-3 summarize the predicted traffic noise levels along roadway segments in the Project Area under the following conditions: 2030 cumulative baseline versus 2030 baseline plus full project buildout with Jack London Boulevard Extension; and 2030 cumulative baseline versus 2030 baseline plus full project buildout with Airway Boulevard Extension.

These tables provide information on buildout-year conditions and are the basis for impact significance conclusions. The comparison between cumulative no-project conditions to existing conditions gives an indication of the increase in traffic noise associated with background growth. The comparison between cumulative plus-project conditions and existing conditions gives an indication of the cumulative increase in noise associated with the Project and background growth. The comparison between cumulative plus-project conditions and cumulative no-project conditions indicates the increase in noise caused directly by the Project.

Table 4-2. Traffic Noise Modeling Results—Cumulative Impacts

Roadway	Segment	Existing Land Use Description	Noise Standard dBA CNEL/L_{dn}	2008 Baseline L_{dn} 100 feet	2030 Cumulative w/o Project L_{dn} 100 feet	Cumulative with Project w/ Jack London Boulevard Extension L_{dn} 100 feet	Cumulative Change (Proj. Contribution.) w/ Jack London Boulevard Extension dB 100 feet	Cumulative w/ Project w/ Airway Boulevard Extension L_{dn} 100 feet	Cumulative Change (Proj. Contribution.) w/ Airway Boulevard Extension dB 100 feet
Dublin Boulevard	Hacienda Drive to Tassajara Road	Existing	60	61	66	66	**+5** (0)	66	**+5** (0)
Airway Boulevard	Extension to Isabel Avenue (future)	Existing commercial	70	61	61	62	+1 (1)	65	+4 (4)
Isabel Avenue	Airway Boulevard to W Jack London Boulevard	Existing commercial	70	62	67	68	+6 (1)	68	+6 (1)
Jack London Boulevard	Isabel Avenue to N Murrieta Boulevard	Existing subdivision	60	59	63	63	**+4** (0)	63	**+4** (0)
Isabel Avenue	W Jack London Boulevard to E Stanley Boulevard	Existing subdivision	60	62	68	68	**+6** (0)	68	**+6** (0)
Stoneridge Drive	Kamp Drive to El Charro Road	Existing subdivision	60	50	58	58	+8 (0)	59	+9 (1)
I-580[1]	Near Hacienda Drive	Existing/planned subdivision	60	76	76	76	0 (0)	76	0 (0)
I-580[1]	Near N Murrieta Boulevard	Existing/planned subdivision	60	76	76	76	0 (0)	76	0 (0)
El Charro Road	North of W Jack London Boulevard	Specific Plan—commercial	70	57	65	65	+8 (0)	65	+8 (0)
El Charro Road	South of W Jack London Boulevard	Specific Plan—commercial	70	56	62	62	+6 (0)	63	+6 (1)

Roadway	Segment	Existing Land Use Description	Noise Standard dBA CNEL/L_{dn}	2008 Baseline L_{dn} 100 feet	2030 Cumulative w/o Project L_{dn} 100 feet	Cumulative with Project w/ Jack London Boulevard Extension L_{dn} 100 feet	Cumulative Change (Proj. Contribution.) w/ Jack London Boulevard Extension dB 100 feet	Cumulative w/ Project w/ Airway Boulevard Extension L_{dn} 100 feet	Cumulative Change (Proj. Contribution.) w/ Airway Boulevard Extension dB 100 feet
W Jack London Boulevard (Jack London Boulevard Extension)	South of the Arroyo Las Positas to Isabel Avenue	Commercial/ recreational/ open space	70	–	–	62	NA	51	NA
Airway Boulevard (Airway Boulevard Extension) [2]	East of Cottonwood Creek to the existing Airway Boulevard	Golf course	70	74	74	–	74	74	–

Notes:

[1] Noise level for worst-case condition of 2,000 vehicles per hour per lane at posted speed on I-580, converted to L_{dn}.

[2] All noise levels based on existing conditions 100 feet south of I-580. Cumulative change with project not modeled.

Significant cumulative impacts and Project considerable contributions shown in bold.

Source: Dowling Associates, Inc., 2006.

Table 4-3. Traffic Noise Modeling Results—Cumulative Impacts on Future Projects

Roadway	Segment	Future Land Use Description	Noise Standard dBA CNEL/L_{dn}	2008 Baseline L_{dn} 100 feet	2030 Cumulative w/o Project Baseline L_{dn} 100 feet	2030 Cumulative w/ Project w/ Jack London Boulevard Extension L_{dn} 100 feet	2030 Cumulative Change (Proj. Contribution) w/ Jack London Boulevard ExtensiondB 100 feet	2030 Cumulative w/ Project w/Airway Boulevard Extension L_{dn} 100 feet	2030 Cumulative Change (Proj. Contribution) w/Airway Boulevard Extension dB 100 feet
Dublin Boulevard	Tassajara Road to Fallon Road	Planned — Dublin Ranch	60	NA	64	65	NA (1)	65	NA (1)
Fallon Road	Central Parkway to Dublin Boulevard	Planned subdivision —Dublin Ranch	60	NA	60	60	0 (0)	60	0 (0)
N Canyons Parkway (future)	Fallon Road to Airway Boulevard	Planned— Fallon Village	60	NA	63	63	NA (0)	64	NA (0)
Fallon Road	Dublin Boulevard to I-580 ramp	Planned subdivision —Dublin Ranch	60	NA	65	66	NA (1)	66	NA (1)
El Charro Road	North of W Jack London Boulevard	/Planned— Staples Ranch	70	57	65	65	+8 (0)	65	+8 (0)
El Charro Road	South of W Jack London Boulevard	/Planned— Staples Ranch	70	56	62	62	+6 (0)	63	+6 (1)

Notes:

(1) Noise level for worst-case condition of 2,000 vehicles per hour per lane at posted speed on I-580, converted to L_{dn}

Significant cumulative impacts and considerable contributions in bold.

NA = not applicable

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The results indicate that while cumulatively significant impacts may occur at certain locations, implementation of the proposed Project would not contribute an increase of more than 1 dBA to any location wherein cumulative noise levels are above applicable noise compatibility standards. Therefore, the proposed Project would not considerably contribute to cumulative noise impacts on existing sensitive land uses.

Cumulative Impact N-3: Cumulative Exposure of Planned Future Noise-Sensitive Land Uses within the Specific Plan Area to Cumulative Traffic Noise—Less than Cumulatively Considerable with Mitigation

Table 4-4 summarizes predicted cumulative traffic noise levels along I-580 in the Project Area. These results indicate that Specific Plan development adjacent to I-580 within the Specific Plan Area would be exposed to traffic noise exceeding the corresponding land use compatibility standard of 70 dB L_{dn}.

Table 4-4. Noise Level Contour Distances at Properties Adjacent to I-580

Sound Level, dB L_{dn}	75 dB	**70 dB**	65 dB	60 dB
Distance, feet	170	**300**	520	870

Because the 70 dB L_{dn} noise level contour lies inside the property line of Specific Plan land uses, this impact is considered to be significant. Implementation of the following mitigation measure would reduce the project's contribution to a less-than-cumulatively-considerable level.

Cumulative Mitigation Measure N-3: Design Land Uses to Comply with Land Use Compatibility Standards for Exterior Noise

Land use development adjacent to I-580 shall be designed such that noise at noise-sensitive outdoor use areas does not exceed 70 dB L_{dn}. This can be accomplished by locating noise-sensitive outdoor use areas at least 300 feet away from the centerline of I-580 or by incorporating shielding elements such as buildings, walls, or earth berms into the development design to ensure that the 70 dB L_{dn} standard is not exceeded at outdoor noise-sensitive use areas on the property. Examples of noise-sensitive outdoor uses that should be protected include areas of frequent human use such as park areas, game courts, picnic areas, and outdoor dining areas. Parking lots are not considered noise-sensitive outdoor use areas.

Population and Housing

Cumulative Impact POP-1: Cumulative Displacement of a Substantial Number of Existing Housing Units or People—Less than Cumulatively Considerable

As discussed in section 3.12 of this EIR, the Specific Plan would not directly contribute to a substantial displacement of population or housing. As such, the

proposed Project would not considerably contribute to a cumulative displacement of population or housing.

Cumulative Impact POP-2: Cumulative Direct Inducement of Substantial, Unanticipated Population Growth—No Impact

As discussed in section 3.12, the proposed Project does not include housing units and therefore, would not directly induce population growth. As such, implementation of the Specific Plan would not considerably contribute to a cumulative impact of substantial growth.

Cumulative Impact POP-3: Cumulative Indirect Inducement of Substantial Population Growth—Less than Cumulatively Considerable

The proposed Project would not directly contribute to population or housing in the Specific Plan Area but could indirectly contribute to or accommodate growth by providing retail uses for an increased population. Buildout of the general plan would increase the population of Livermore in the year 2025 by approximately 28,377, consistent with ABAG projections (LSA Associates 2003). This growth would allow for the provision of housing (including affordable housing). The general plan EIR found that environmental impacts associated with this growth would be reduced by confining the growth to the UGB (LSA Associates 2003) Because the proposed Project is consistent with the general plan uses designated for the project site in density and intensity, as well as types of uses, the proposed Project's contribution to cumulative population and housing impacts is considered less than cumulatively considerable.

Public Services

Cumulative Impact PSU-1: Cumulative Impacts on Public Services—Less than Cumulatively Considerable

The general plan EIR found that implementation of general plan guidelines and policies would result in development of adequate public services in accordance with general plan buildout. This includes upgrading of water reliability for fire services, and funding for sufficient police officers to ensure established levels of response times. Because the proposed Project is consistent with the density and intensity of development planned in the general plan and would be providing funding for the above-mentioned public services to ensure established LOS, the cumulative contribution from the Project is considered less than considerable.

Cumulative Impact PSU-2: Cumulative Impacts on Wildland Fire Hazards—Less than Cumulatively Considerable

The Specific Plan is adjacent to vacant, rural grassland; however, the risk of wildfire is minimal. Cumulative development will continue to place structures and residents/occupants in this area, which would act to reduce the amount of vacant and grassland acreage. Additionally, proper fire-protection measures and adequate emergency access adopted in the Specific Plan, and in future development plans, would ensure the safety of residents/occupants. Thus, the proposed Project, along with all future development of the area, would not considerably contribute to cumulative wildfire hazards.

Cumulative Impact PSU-3: Cumulative Increase in Demand for Utility Infrastructure and Capacities—Less than Cumulatively Considerable

Regional development creates cumulative demand on all aspects of public services and utilities provisions addressed in section 3.13 of this EIR by increasing the number of residents, occupants, commercial patrons, and visitors to the area. Many larger projects also enhance public services or address their own demands by installing infrastructure, constructing new service stations (e.g., police or fire), or funding necessary improvements. The Specific Plan would address its own infrastructure demands by installing water, sewer, and stormwater infrastructure, which would be connected to the City of Livermore's existing system.

The City of Livermore General Plan EIR found that general plan buildout and associated demand of utilities such as electricity, gas, telecommunications, water (including water storage and potable water supplies), and solid waste would not result in a significant cumulative impact. The Specific Plan is consistent with the density and intensity of development planned in the general plan; therefore, the projects contribution to cumulative impacts related to necessary infrastructure improvements (water lines, water storage improvements, landfill expansion, solid waste source reduction, recycling, etc.) would be less than considerable.

In November 2005, voters approved expanding the capacity in the Livermore-Amador Valley Water Management Agency (LAVWMA) export pipeline. This pipeline carries treated water from the Livermore-Amador Valley to San Francisco Bay. The expanded capacity in the export pipeline will accommodate local General Plan buildout and thus there is adequate capacity to serve cumulative development, including the project As such, the proposed development would not considerably contribute to cumulative utility demands.

Recreation

Cumulative Impact REC-1: Cumulative Effects on Neighborhood Parks, Regional Parks, or Recreational Facilities—Not Cumulatively Considerable

Regional development creates cumulative demand on existing recreational facilities primarily by increasing the number of residents utilizing the facilities. The Specific Plan does not include a residential component; its contribution to a regionally cumulative demand on recreational facilities would be limited to the employees at the planned commercial and office developments, which would be minimal. Furthermore, the Project would have a beneficial recreational impact associated with the installation of a Class I regional multiuse trail through the Specific Plan. Therefore, the Project would not contribute considerably to cumulative demand on recreational facilities.

As discussed in section 3.14, implementation of the proposed Project would result in the removal of a driving range. However, the Project would have a net beneficial impact on recreational facilities in the city and surrounding areas by adding 97 acres of parkland and open space and completing an additional

segment of the Arroyo Las Positas multiuse trail. Thus, the Project would not adversely contribute to a cumulatively significant impact on parks and recreation.

Traffic

The cumulative impact analysis covered here includes vehicular traffic, traffic safety, emergency access, transit services, and bicycle and pedestrian facilities. Supporting tables are presented at the end of this section. Additional details, tables, and figures can be found in Appendix T.

Cumulative Impact Methodology

Cumulative Conditions

Cumulative (2030) baseline conditions assume no-project conditions in the study area but include existing and future developments that have been approved in each Tri-Valley city's general plan. As described below, additional analysis was conducted to evaluate the Staples Ranch proposal (compared with the development anticipated in the existing Stoneridge Specific Plan) and to evaluate the potential removal of the Stoneridge Drive Extension from Pleasanton's general plan, which is under consideration by the City of Pleasanton (compared with the Stoneridge Drive Extension in the current general plan).

Year 2030 conditions also include growth in developed land uses outside of the Tri-Valley as forecast by ABAG *Projections 2003* and allocated to the traffic analysis zone level by the Contra Costa Transportation Authority (CCTA) Decennial Model. For the cumulative impact analysis, the following potential future project scenarios were analyzed:

Cumulative year 2030 conditions plus full project buildout with Jack London Boulevard Extension option—Future traffic volumes based on cumulative conditions and full buildout project-generated traffic using a four-lane extension of Jack London Boulevard from its existing terminus west to El Charro Road.

Cumulative year 2030 conditions plus full project buildout with Airway Boulevard Extension option—Future volumes based on cumulative conditions and full buildout project-generated traffic using a four-lane extension of Airway Boulevard from Terminal Circle to El Charro Road and widening Airway Boulevard to four lanes from Terminal Circle to Isabel Avenue.

Year 2030 was selected for cumulative analysis because it includes buildout within the Tri-Valley and is consistent with regional traffic models that were used for the analysis.

The following is a summary of planned roadway changes that were assumed to be implemented by 2030 and were incorporated into the traffic model, in addition to those projects included in the 2008 analysis as listed above. These projects are

included in the City of Livermore's General Plan with funding provided through Livermore TIFs. Projects on I-580 and SR 84 are funded through a combination of Livermore TIFs, Tri-Valley Transportation Development Fees, Measure B funds, and state and federal transportation funding. These projects are included in the Metropolitan Transportation Commission's financially constrained RTP and therefore can be assumed to be fully funded and completed under cumulative conditions.

- Isabel Avenue widening and extension (six lanes) from Stanley Boulevard to I-580 and four lanes from Ruby Hills Drive to Stanley Boulevard.
- Isabel Avenue extension (six lanes) from I-580 to Portola Road/Campus Drive.
- Isabel Avenue new interchange with I-580 eastbound and westbound ramps—partial cloverleaf with loop on ramps.
- Portola Avenue interchange at I-580 removed, Portola Avenue extension (four lanes) from Murrieta Boulevard to Isabel Avenue.
- Kitty Hawk Road realignment—eastern portion of roadway shifted east to connect to Isabel Avenue as a side-street, stop-controlled, right-in right-out T intersection.
- I-580 extension of HOV lanes from Tassajara Road to Greenville Road—both directions.
- I-580 auxiliary lanes from Santa Rita Road to Vasco Road—both directions.
- El Charro Road at I-580 interchange widening overpass (from four lanes to six lanes).
- First Street at I-580 realigned interchange with new loop ramps.
- Vasco Road at I-580 realigned interchange with new loop ramps.
- Greenville Road–Altamont Pass Road at I-580 realigned interchange with new loop ramps.
- Jack London Boulevard Extension (four lanes) from Isabel Road to El Charro Road (for Project only with Jack London Boulevard Extension).
- Airway Boulevard (four lanes) widening from Terminal Circle to Isabel Avenue and four-lane extension to El Charro Road (for Project only with Airway Boulevard Extension).
- The intersection of Vallecitos Road at Isabel Avenue widened.
- Dublin Boulevard extension (four lanes) from Dublin city limits to Doolan Road–North Canyon Parkway.

In addition, the following roadway improvements are shown in the City of Pleasanton's general plan. They have been included in the traffic model for cumulative conditions because it is reasonably foreseeable that they will be completed by the buildout of Pleasanton's general plan.

- El Charro Road extension (four lanes) from Jack London Boulevard to Stanley Boulevard.
- Busch Road (two lanes) extension from Valley Avenue to El Charro Road.
- Stoneridge Drive extension (four lanes) from Trevor Parkway to El Charro Road.
- West Las Positas Boulevard at new interchange with I-680 northbound and southbound ramps.

In addition, the following roadway improvements are shown in the City of Dublin's general plan and/or the Fallon Village Specific Plan. They have been included in the traffic model for cumulative conditions because it is reasonably foreseeable that they will be completed by the buildout of Dublin's general plan:

- Fallon Road widening (from four lanes to six lanes) from I-580 to Antoine Way.
- Fallon Road extension (six lanes) from Antoine Way to Tassajara Road.
- Hacienda Drive at I-580 interchange improvements.

Truck volumes from the quarry areas for cumulative modeling conditions are calculated by an extrapolation of existing counts to planned activity anticipated by 2030.

Cumulative Conditions with Staples Ranch Proposal

The City of Pleasanton has issued an NOP for an amendment to the Stoneridge Drive Specific Plan. This amendment would change the allowed land use on the Staples Ranch site from industrial, retail, and park and recreation uses to auto sales, retail, elderly housing/congregate care facilities, and park and recreation uses. A recreational skating rink complex has been discussed by the Pleasanton City Council as a possible use in the park area. An alternative that allows some office use is also being considered. Because the approval of this proposed amendment is reasonably foreseeable, an analysis was done to determine whether the proposed Stoneridge Drive Specific Plan amendment, if approved, would create any additional cumulative traffic impacts beyond those identified using land uses allowed in the current Stoneridge Drive Specific Plan (which was used for the cumulative conditions described above).

The City of Pleasanton provided the currently allowed and proposed amended land uses for the Staples Ranch area. Standard ITE trip generation rates were applied to land uses in both scenarios to compare weekday daily and a.m. and p.m. peak hour traffic generation. Where the proposed Stoneridge Drive Specific Plan amendment resulted in less traffic, it was concluded that there would be no additional cumulative impact. Where the proposed amendment resulted in more traffic, additional analysis was done to determine whether the added traffic would cause any additional impacts on the transportation system.

Cumulative Conditions without Stoneridge Drive Extension

Additional analysis was conducted to evaluate the potential removal of a Stoneridge Drive Extension from Pleasanton's general plan, which is under consideration by the City of Pleasanton (compared with the Stoneridge Drive Extension in the current general plan).

The City of Pleasanton's 1996 general plan identifies an extension of Stoneridge Drive to El Charro Road as a divided arterial roadway. The City of Pleasanton has issued an NOP for an update to the 1996 general plan. As part of this update, Pleasanton will consider the removal of the Stoneridge Drive Extension to El Charro Road from the general plan. Stoneridge Drive has been included in Tri-Valley transportation planning for more than a decade. It has been expected to provide an alternative to I-580 for local trips traveling within the Tri-Valley and to provide better connectivity between Livermore and Pleasanton. Removing this arterial roadway may cause a significant shift in expected traffic patterns in the vicinity between El Charro Road and Santa Rita Road.

To identify the impacts of the proposed removal of the Stoneridge Drive Extension from Pleasanton's general plan, the traffic model used for the El Charro Specific Plan traffic analysis was modified to break Stoneridge Drive into two discontinuous segments on the Staples Ranch property. The model was run to generate traffic volume forecasts and assign the traffic to the roadway network. Turning movement volumes were created and imported into TRAFFIX for LOS analysis; v/c ratios and LOS for segments of I-580 were calculated.

Cumulative Impacts and Mitigation

Tables 4-5a through 4-8b summarize the predicted traffic conditions along freeway and roadway segments in the Project Area under the following conditions:

- baseline year 2008 without the proposed Project,
- cumulative year 2030 without the proposed Project,
- cumulative year 2030 plus full project buildout with the Jack London Boulevard Extension option, and
- cumulative year 2030 plus full project buildout with the Airway Boulevard Extension option.

These tables provide information on buildout-year conditions and are the basis for cumulative impact significance conclusions and conclusions about whether project contributions are considerable or not. The comparison between cumulative no-project conditions to baseline conditions gives an indication of the increase in traffic associated with background growth. The comparison between cumulative plus-project conditions and baseline conditions gives an indication of the cumulative increase in traffic associated with the Project and background growth. The comparison between cumulative plus-project conditions and cumulative no-project conditions indicates the increase in traffic contributed directly by the Project.

Cumulative Impact TRA-1: Cumulative Contribution to Unacceptable Freeway and Ramp Operations During Peak Hours—Less than Cumulatively Considerable with Mitigation
Cumulative Year 2030 Conditions Plus Full Project Buildout

As shown in Tables 4-5a and 4-5b, under cumulative plus full project buildout (2030 conditions) with either east-west roadway extension option, all freeway segments within the study area are expected to operate at acceptable LOS during the a.m. and p.m. peak hours. All freeway segments in the study area would operate at LOS E or better with or without the project under cumulative 2030 conditions. However, as described above, in the cumulative conditions, it is assumed that many of the regional freeway improvements to I-580 will have been built. The following mitigation measures would ensure that the Project contributes a fair-share fee to assist in funding needed regional priority improvements and reduces trips as feasible with new development

Mitigation Measure TRA-4a: Contribute the Appropriate Tri-Valley Development Transportation (TVDT) Fee for All Developments that Generate New Trips
This mitigation is described in section 3.15.

Mitigation Measure TRA-4b: Contribute the Appropriate City of Livermore Traffic Impact Fee for All Developments that Generate New Trips
This mitigation is described in section 3.15.

Mitigation Measure TRA-4c: Reduce Vehicle Trips through Transportation Demand Management Program
This mitigation is described in section 3.15.

Cumulative Impact TRA-2: Cumulative Contribution to Unacceptable Level of Service at Intersections During Peak Hours—Cumulatively Considerable and Unavoidable with Mitigation
Cumulative Year 2030 Conditions Plus Full Project Buildout

As shown in Table 4-6, all of the freeway ramp intersections studied would operate at acceptable LOS during the a.m. and p.m. peak hours except the following.

- Santa Rita Road at Pimlico Drive I-580 eastbound ramps—Operations decline from an LOS of D in the baseline (2008) conditions to LOS E (Airway Boulevard Extension option) or LOS F (Jack London Extension option) in the a.m. peak hour and decline to LOS E conditions in the p.m. peak hour (both east-west road options).

The increase in traffic at the intersection on Santa Rita Road at Pimlico Road and the I-580 eastbound onramps under cumulative conditions would be considered significant. However, implementation of the following mitigation measure would reduce the Project's contribution to a less-than-considerable level.

Table 4-5a. El Charro Specific Plan Traffic Impact Freeway Operations—2030 Full Project (Jack London Boulevard Extension)

Location	Type	Baseline (2008)			2030 No Project			2030 Full Project		
		Volume[1]	Density[2]	LOS[3]	Volume[1]	Density[2]	LOS[3]	Volume[1]	Density[2]	LOS[3]
I-580 Eastbound—A.M. Peak										
Hacienda Dr to Santa Rita Rd	Weave	6,044	21.1	C	9,250	35.5	E	9,325	35.8	E
Santa Rita Rd to El Charro Rd	Mainline	6,476	22.0	C	8,534	29.9	D	8,770	31.1	D
El Charro Rd to Airway Blvd	Mainline	6,880	30.2	D	8,898	31.7	D	9,182	33.3	D
Airway Blvd to Isabel Ave	Mainline	5,573	23.7	C	7,553	25.8	C	7,692	26.3	D
I-580 Westbound—A.M. Peak										
Isabel Ave to Airway Blvd	Mainline	8,258	41.8	E	8,513	29.8	D	8,536	29.9	D
Airway Blvd to El Charro Rd	Mainline	8,651	>45	F	8,790	31.2	D	8,761	31.0	D
El Charro Rd to Santa Rita Rd	Mainline	7,701	36.1	E	8,487	29.7	D	8,478	29.7	D
Santa Rita Rd to Hacienda Dr	Weave	8,276	29.7	D	8,607	32.4	D	8,572	32.2	D
I-580 Eastbound—P.M. Peak										
Hacienda Dr to Santa Rita Rd	Weave	9,088	35.3	E	9,606	37.4	E	9,640	37.4	E
Santa Rita Rd to El Charro Rd	Mainline	8,351	29.1	D	8,876	31.6	D	9,012	32.2	D
El Charro Rd to Airway Blvd	Mainline	9,011	>45	F	9,105	32.9	D	9,334	34.2	D
Airway Blvd to Isabel Ave	Mainline	8,237	41.6	E	8,341	29.0	D	8,450	29.5	D
I-580 Westbound—P.M. Peak										
Isabel Ave to Airway Blvd	Mainline	5,811	24.8	C	8,051	27.8	D	8,258	28.7	D
Airway Blvd to El Charro Rd	Mainline	6,588	28.6	D	8,970	32.1	D	9,448	35.0	D
El Charro Rd to Santa Rita Rd	Mainline	6,248	26.8	D	8,256	28.7	D	8,402	29.3	D
Santa Rita Rd to Hacienda Dr	Weave	6,579	23.2	C	8,627	32.1	D	8,686	32.5	D

Notes:

Significance Criteria = Significant Cumulative Impact = Decline to F; if already F, velocity-to-capacity (v/c) increase > 3 % and > 1% project contribution

Significant impacts in **bold** (none in this table).

[1] Volume = vehicles per hour (vph)

[2] Density = passenger car per mile per lane (pc/m/ln)

[3] LOS = level of service

Source: Dowling Associates, Inc., 2006.

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Table 4-5b. El Charro Specific Plan Traffic Impact Freeway Operations—2030 Full Project (Airway Boulevard Extension)

Location	Type	Baseline (2008)			2030 No Project			P.M. Peak Hour		
		Volume[1]	Density[2]	LOS[3]	Volume[1]	Density[2]	LOS[3]	Volume[1]	Density[2]	LOS[3]
I-580 Eastbound—A.M. Peak										
Hacienda Dr to Santa Rita Rd	Weave	6,044	21.1	C	9,250	35.5	E	9,272	35.5	E
Santa Rita Rd to El Charro Rd	Mainline	6,476	22.0	C	8,534	29.9	D	8,592	30.2	D
El Charro Rd to Airway Blvd	Mainline	6,880	30.2	D	8,898	31.7	D	9,122	33.0	D
Airway Blvd to Isabel Ave	Mainline	5,573	23.7	C	7,553	25.8	C	7,933	27.3	D
I-580 Westbound—A.M. Peak										
Isabel Ave to Airway Blvd	Mainline	8,258	41.8	E	8,513	29.8	D	8,824	31.4	D
Airway Blvd to El Charro Rd	Mainline	8,651	>45	F	8,790	31.2	D	8,814	31.3	D
El Charro Rd to Santa Rita Rd	Mainline	7,701	36.1	E	8,487	29.7	D	8,448	29.5	D
Santa Rita Rd to Hacienda Dr	Weave	8,276	29.7	D	8,607	32.4	D	8,528	32.2	D
I-580 Eastbound—P.M. Peak										
Hacienda Dr to Santa Rita Rd	Weave	9,088	35.3	E	9,606	37.4	E	9,560	36.8	E
Santa Rita Rd to El Charro Rd	Mainline	8,351	29.1	D	8,876	31.6	D	8,955	32.1	D
El Charro Rd to Airway Blvd	Mainline	9,011	>45	F	9,105	32.9	D	9,365	34.4	D
Airway Blvd to Isabel Ave	Mainline	8,237	41.6	E	8,341	29.0	D	8,477	29.7	D
I-580 Westbound—P.M. Peak										
Isabel Ave to Airway Blvd	Mainline	5,811	24.8	C	8,051	27.8	D	8,332	29.0	D
Airway Blvd to El Charro Rd	Mainline	6,588	28.6	D	8,970	32.1	D	9,452	35.0	D
El Charro Rd to Santa Rita Rd	Mainline	6,248	26.8	D	8,256	28.7	D	8,302	28.9	D
Santa Rita Rd to Hacienda Dr	Weave	6,579	23.2	C	8,627	32.1	D	8,663	32.4	D

Notes:

Significance Criteria = Significant Cumulative Impact = Decline to F; if already F, velocity-to-capacity (v/c) increase > 3 % and > 1% project contribution.

Significant impacts in **bold** (none in this table).

[1] Volume = vehicles per hour (vph).

[2] Density = passenger car per mile per lane (pc/m/ln).

[3] LOS = level of service.

Source: Dowling Associates, Inc. 2006.

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Table 4-6. El Charro Specific Plan Traffic Impact Peak Hour Intersection Level of Service, Cumulative 2030 Conditions

	Intersections	LOS Standard	Time Period	2008	LOS from 2030 Scenarios		
				No Project	Cumulative w/o Project	Cumulative with Project—Jack London Boulevard Extension option	Cumulative with Project—Airway Boulevard Extension option
	Livermore						
1	El Charro Rd at I-580 eastbound ramps	Midlevel D	a.m.	B	B	B	B
			p.m.	A	B	B	B
2	El Charro Rd at Freisman Rd	None	a.m.	A	F	N/A	N/A
			p.m.	A	F	N/A	N/A
3	Airway Blvd at North Canyons Pkwy	E	a.m.	C	C	C	C
			p.m.	B	C	C	C
4	Airway Blvd (SR 84) at I-580 westbound ramps	E	a.m.	B	C	C	C
			p.m.	B	C	C	C
5	Airway Blvd (SR 84) at I-580 eastbound ramps	E	a.m.	D	C	C	C
			p.m.	C	C	C	C
6	Isabel Ave–Kitty Hawk Rd (SR 84) at Airway Blvd	E	a.m.	E	N/A	N/A	N/A
			p.m.	C	N/A	N/A	N/A
7	Collier Canyon Rd at North Canyons Pkwy	Midlevel D	a.m.	B	C	C	C
			p.m.	B	B	C	C
8	Isabel Ave (SR 84) at Jack London Blvd	Midlevel D	a.m.	B	E	E	C
			p.m.	C	F	F	D
9	Isabel Ave (SR 84) at East Stanley Blvd offramp (north)	Midlevel D	a.m.	B	C	D	C
			p.m.	C	D	D	D
10	Isabel Ave (SR 84) at Stanley Blvd onramp (south)	Midlevel D	a.m.	C	B	B	B
			p.m.	C	C	C	C
11	Isabel Ave (SR 84) at Concannon Blvd	Midlevel D	a.m.	C	C	D	D
			p.m.	C	B	B	B
12	East Vallecitos Rd (SR 84) at Isabel Ave	Midlevel D	a.m.	C	B	B	B
			p.m.	B	A	A	A

Intersections	LOS Standard	Time Period	2008	LOS from 2030 Scenarios		
			No Project	Cumulative w/o Project	Cumulative with Project—Jack London Boulevard Extension option	Cumulative with Project—Airway Boulevard Extension option
13 Murrieta Blvd at East Jack London Blvd–Pine St	Midlevel D	a.m.	E	F	E	D
		p.m.	D	D	D	D
14 Murrieta Blvd at East Stanley Blvd	Midlevel D	a.m.	C	D	D	E
		p.m.	C	D	D	D
15 Isabel Ave–Campus Dr at Portola Ave	E	a.m.	N/A	C	C	C
		p.m.	N/A	C	C	C
16 Isabel Ave (SR 84) at I-580 westbound ramps	E	a.m.	N/A	D	D	D
		p.m.	N/A	C	C	C
17 Isabel Ave (SR 84) at I-580 eastbound ramps	E	a.m.	N/A	B	C	C
		p.m.	N/A	C	D	C
18 El Charro Rd at West Jack London Blvd	Midlevel D	a.m.	A	C	C	C
		p.m.	B	D	D	D
19 Isabel Ave (SR 84) at Airway Blvd	E	a.m.	N/A	E	D	F
		p.m.	N/A	F	F	F
20 Airway Blvd at Airway Extension	Midlevel D	a.m.	N/A	N/A	N/A	C
		p.m.	N/A	N/A	N/A	D
Dublin						
21 Hacienda Dr at Dublin Blvd	E	a.m.	D	D	D	D
		p.m.	C	D	D	D
22 Hacienda Dr at I-580 westbound ramps	E	a.m.	B	C	C	C
		p.m.	B	C	C	C
23 Tassajara Rd at Central Pkwy	E	a.m.	C	C	C	C
		p.m.	B	D	D	D
24 Tassajara Rd at Dublin Blvd	E	a.m.	C	C	C	C
		p.m.	C	D	D	D

Table 4-6. Continued

Intersections	LOS Standard	Time Period	2008	LOS from 2030 Scenarios		
			No Project	Cumulative w/o Project	Cumulative with Project—Jack London Boulevard Extension option	Cumulative with Project—Airway Boulevard Extension option
25 Tassajara Rd at I-580 westbound ramps	E	a.m.	B	D	D	D
		p.m.	C	B	B	B
26 Fallon Rd at Central Pkwy	E	a.m.	B	C	C	C
		p.m.	B	D	D	D
27 Fallon Rd at Dublin Blvd	E	a.m.	C	C	C	C
		p.m.	B	C	C	C
28 El Charro Rd–Fallon Rd at I-580 westbound ramps	E	a.m.	B	B	C	C
		p.m.	B	C	D	D
Pleasanton						
29 Hacienda Dr at I-580 eastbound ramps	E	a.m.	B	C	C	C
		p.m.	B	C	C	C
30 Hacienda Dr at Owens Dr	E	a.m.	B	C	C	C
		p.m.	C	C	C	C
31 West Las Positas Blvd at Stoneridge Dr	E	a.m.	C	C	C	C
		p.m.	C	C	C	C
32 Santa Rita Rd at Pimlico Dr–I-580 eastbound ramps	E	a.m.	D	F	F	E
		p.m.	D	D	E	E
33 Santa Rita Rd at West Las Positas Blvd	E	a.m.	C	C	C	C
		p.m.	C	D	D	D
34 Santa Rita Rd at Stoneridge Dr	E	a.m.	C	E	F	F
		p.m.	C	F	F	F
35 Santa Rita Rd at Valley Ave	E	a.m.	D	C	C	C
		p.m.	D	C	C	C
36 Rheem Dr–Milani Ave at Stoneridge Dr	E	a.m.	B	C	C	C
		p.m.	B	E	E	F

Table 4-6. Continued

Intersections	LOS Standard	Time Period	2008	LOS from 2030 Scenarios		
			No Project	Cumulative w/o Project	Cumulative with Project—Jack London Boulevard Extension option	Cumulative with Project—Airway Boulevard Extension option
37 Kamp Dr–Garden Cir at Stoneridge Dr	E	a.m.	B	A	A	A
		p.m.	A	A	A	A
38 Busch Rd at Valley Ave	E	a.m.	D	D	C	D
		p.m.	C	C	C	C
39 Valley Ave–Bernal Rd at Stanley Blvd	E	a.m.	C	D	D	D
		p.m.	D	E	E	E
40 El Charro Rd at Busch Rd	E	a.m.	N/A	B	B	B
		p.m.	N/A	B	B	B
41 El Charro Rd at Stanley Blvd	E	a.m.	N/A	B	B	D
		p.m.	N/A	B	C	C

Significant impact due to contribution to not meeting level of service (LOS) standard

Less than significant due to reduction in delay with project compared to w/o project.

Significant impact due to > 5 second delay

Table 4-7a. El Charro Specific Plan Traffic Impact Segment Operations Analysis for Metropolitan Transportation System Segments, Cumulative 2025, A.M. Peak (Northbound/Eastbound)

Link Location	No Project 2025 A.M. Vol	Project 2025 A.M. Vol	% Vol Diff	Contribution	No Project 2010 A.M. Level of Service (LOS)	No Project 2025 A.M. LOS	Project 2025 A.M. LOS	Decline to F or Worsen F?	Change in V/C > 3%
Freeways									
I-680—north of SR 84	1,250	1,291	3.3%	41	A	A	A	no	NA
I-680—north of Bernal Ave	3,244	3,221	-0.7%	-23	B	B	B	no	NA
I-580—west of El Charro Rd	5,239	5,723	9.2%	484	B	C	C	no	NA
I-580—east of El Charro Rd	5,771	5,834	1.1%	63	B	C	C	no	NA
I-580—west of Livermore Ave	5,488	5,538	0.9%	50	C	C	C	no	NA
Arterials									
SR 84—east of I-680	693	680	-1.9%	-13	C	C	C	no	NA
SR 84—north of Stanley Blvd	3,313	3,327	0.4%	14	F	F	F	yes	no
SR 84—south of Airway Blvd	2,516	2,706	7.6%	190	F	C	D	no	NA
Stanley Blvd—west of SR 84	894	882	-1.3%	-12	B	B	B	no	NA
Stanley Blvd—west of Murrieta Blvd	860	853	-0.8%	-7	B	B	B	no	NA
Santa Rita Rd north of Valley Ave	3,558	3,531	-0.8%	-27	F	F	F	yes	no
Holmes St—south of Murrieta Blvd	823	832	1.1%	9	D	D	D	no	NA
South Livermore Ave—north of East Ave	514	507	-1.4%	-7	D	D	D	no	NA
North Livermore Ave—south of Las Positas Rd	1,049	1,015	-3.2%	-34	D	D	D	no	NA
First St—south of Portola Ave	1,575	1,559	-1.0%	-16	D	D	D	no	NA
First St—south of I-580	1,377	1,354	-1.7%	-23	D	D	D	no	NA

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Table 4-7b. El Charro Specific Plan Traffic Impact Segment Operations Analysis for Metropolitan Transportation System Segments, Cumulative 2025, A.M. Peak (Southbound/Westbound)

Link Location	No Project 2025 A.M. Vol	Project 2025 A.M. Vol	% Vol Diff	Vol Diff	No Project 2010 A.M. Level of Service (LOS)	No Project 2025 A.M. LOS	Project 2025 A.M. LOS	Decline to F or Worsen F?	Change in V/C > 3%
Freeways									
I-680—north of SR 84	7,329	7,462	1.8%	133	F	F	F	yes	No
I-680—north of Bernal Ave	5,810	5,744	-1.1%	-66	D	E	E	no	NA
I-580—west of El Charro Rd	9,299	9,193	-1.1%	-106	E	F	F	yes	No
I-580—east of El Charro Rd	9,196	9,236	0.4%	40	F	F	F	no	No
I-580—west of Livermore Ave	9,074	9,175	1.1%	101	F	F	F	yes	No
Arterials									
SR 84—east of I-680	1,800	1,791	-0.5%	-9	F	F	F	no	NA
SR 84—north of Stanley Blvd	2,646	2,648	0.1%	2	F	C	C	no	NA
SR 84—south of Airway Blvd	2,425	2,423	-0.1%	-2	F	C	C	no	NA
Stanley Blvd—west of SR 84	3,126	3,228	3.3%	102	F	F	F	yes	yes
Stanley Blvd—west of Murrieta Blvd	2,181	2,210	1.3%	29	B	B	B	no	NA
Santa Rita Rd north of Valley Ave	1,738	1,768	1.7%	30	C	D	D	no	NA
Holmes St—south of Murrieta Blvd	662	653	-1.4%	-9	D	D	D	no	NA
South Livermore Ave—north of East Ave	252	250	-0.8%	-2	D	D	D	no	NA
North Livermore Ave—south of Las Positas Rd	1,474	1,474	0.0%	0	D	D	D	no	NA
First St—south of Portola Ave	1,851	1,873	1.2%	22	E	F	F	yes	no
First St—south of I-580	2,056	2,041	-0.7%	-15	D	D	D	no	NA

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Table 4-8a. El Charro Specific Plan Traffic Impact Segment Operations Analysis for Metropolitan Transportation System Segments, Cumulative 2025, P.M. Peak (Northbound/Eastbound)

Link Location	No Project 2025 P.M. Vol	Project 2025 P.M Vol	% Vol Diff	Contribution	No Project 2010 P.M. Level of Service (LOS)	No Project 2025 P.M. LOS	Project 2025 P.M. LOS	Decline to F or Worsen F?	Change in V/C > 3%
Freeways									
I-680—north of SR 84	6,951	7,046	1.4%	95	F	F	F	yes	No
I-680—north of Bernal Ave	5,569	5,711	2.5%	142	D	E	E	no	NA
I-580—west of El Charro Rd	9,702	9,712	0.1%	10	F	F	F	yes	No
I-580—east of El Charro Rd	9,337	9,518	1.9%	181	F	F	F	yes	No
I-580—west of Livermore Ave	9,112	9,173	0.7%	61	F	F	F	yes	No
Arterials									
SR 84—east of I-680	1,731	1,770	2.3%	39	F	F	F	yes	No
SR 84—north of Stanley Blvd	2,517	2,433	-3.3%	-84	F	C	C	no	NA
SR 84—south of Airway Blvd	2,499	2,297	-8.1%	-202	F	C	C	no	NA
Stanley Blvd—west of SR 84	3,083	2,954	-4.2%	-129	F	F	F	no	NA
Stanley Blvd—west of Murrieta Blvd	1,962	1,976	0.7%	14	B	B	B	no	NA
Santa Rita Rd north of Valley Ave	1,855	1,819	-1.9%	-36	D	D	D	no	NA
Holmes St—south of Murrieta Blvd	614	617	0.5%	3	D	D	D	no	NA
South Livermore Ave—north of East Ave	355	351	-1.1%	-4	D	D	D	no	NA
North Livermore Ave—south of Las Positas Rd	1,170	1,192	1.9%	22	D	D	D	no	NA
First St—south of Portola Ave	1,972	1,995	1.2%	23	D	F	F	yes	no
First St—south of I-580	1,855	1,869	0.8%	14	D	D	D	no	NA

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Table 4-8b. El Charro Specific Plan Traffic Impact Segment Operations Analysis for Metropolitan Transportation System Segments, Cumulative 2025, P.M. Peak (Southbound/Westbound)

Link Location	No Project 2025 P.M. Vol	Project 2025 P.M. Vol	% Vol Diff	Contribution	No Project 2010 P.M. Level of Service (LOS)	No Project 2025 P.M. LOS	Project 2025 P.M. LOS	Decline to F or Worsen F?	Change in V/C > 3%
Freeways									
I-680—north of SR 84	5,657	5,676	0.3%	19	E	E	E	No	NA
I-680—north of Bernal Ave	5,861	5,874	0.2%	13	E	E	E	No	NA
I-580—west of El Charro Rd	5,781	6,349	9.8%	568	C	C	C	No	NA
I-580—east of El Charro Rd	6,529	6,654	1.9%	125	C	C	C	No	NA
I-580—west of Livermore Ave	5,947	5,993	0.8%	46	C	C	C	No	NA
Arterials									
SR 84—east of I-680	1,424	1,424	0.0%	0	F	F	F	No	NA
SR 84—north of Stanley Blvd	3,298	3,275	-0.7%	-23	F	F	F	No	NA
SR 84—south of Airway Blvd	3,159	3,121	-1.2%	-38	F	F	F	No	NA
Stanley Blvd—west of SR 84	1,620	1,527	-5.7%	-93	B	C	C	No	NA
Stanley Blvd—west of Murrieta Blvd	1,146	1,177	2.7%	31	B	B	B	No	NA
Santa Rita Rd north of Valley Ave	3,743	3,740	-0.1%	-3	F	F	F	No	NA
Holmes St—south of Murrieta Blvd	991	967	-2.4%	-24	D	D	D	No	NA
South Livermore Ave—north of East Ave	523	515	-1.5%	-8	D	D	D	No	NA
North Livermore Ave—south of Las Positas Rd	689	652	-5.4%	-37	D	D	D	No	NA
First St—south of Portola Ave	1,822	1,791	-1.7%	-31	D	F	E	No	NA
First St—south of I-580	1,285	1,289	0.3%	4	D	D	D	No	NA

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Cumulative Mitigation Measure TRA-2a: Improve Intersection of Santa Rita Road at Pimlico Road and I-580 Eastbound Ramps

At the intersection of Santa Rita Road at Pimlico Road and I-580 eastbound ramps, the City of Pleasanton will add a third eastbound left-turn lane. This improvement would reduce the delays, resulting in LOS D with 40.5 seconds delay during the a.m. peak hour and LOS D with 36.3 seconds delay during the p.m. peak hour.

The City of Livermore shall confer with the City of Pleasanton, the City of Dublin, and Alameda County on a strategy to fund and complete mitigation measures within each other's jurisdictions. More specifically, the City of Livermore will seek to enter into one or more binding agreements with each of these other local agencies in order to facilitate a fair and equitable subregional approach to traffic mitigation, to the mutual benefit of all of the affected jurisdictions. Depending on the willingness of these other local agencies to enter into such agreements, the ultimate result may be a single multijurisdictional agreement or one or more agreements between the City of Livermore and one or more of the other agencies. The strategy will address fair-share mitigation for projects approved by one jurisdiction that contribute cumulatively considerable traffic to intersections and roadway segments in neighboring jurisdiction(s) with cumulatively substandard LOS.

The applicable standard for LOS shall be that established by each local agency for its current jurisdictional area and its SOI. If SOIs overlap, or jurisdiction over an intersection is split between two local agencies, the standard to be achieved by mitigation, where feasible, will be determined by mutual agreement of the jurisdictions involved.

The City of Livermore is willing to ensure that projects it approves contribute fair-share mitigation costs for improvements in other jurisdictions if but only if the other jurisdictions are also willing to reciprocate for projects within their jurisdictions that contribute considerably to traffic occurring within the City of Livermore. The strategy also may allocate mitigation responsibility to each jurisdiction for improvements within its jurisdiction on the understanding that each jurisdiction will be addressing the cumulative contributions from projects in neighboring jurisdictions. A combination of approaches also may be utilized.

If a mutually agreeable strategy cannot be reached with the City of Pleasanton, the City of Dublin, and Alameda County, or any one of them, then the City of Livermore will not require the contribution of mitigation for cumulative contributions to impacts in any other jurisdiction unwilling to agree to reciprocity with the City of Livermore. This is because, under such circumstances, the City could not be assured that projects it approves are being assessed for mitigation only in proportion to their impact and because the City of Livermore may need to require reallocation of the mitigation contribution to intersections and roadway

segments within Livermore itself, lacking assurance of mitigation funding from projects that may be approved by other jurisdictions. In the event that a mutually agreed-upon strategy is not reached, then mitigation of the El Charro Project's contribution to the impacted intersection or roadway segment would be infeasible, and the impact would be considered significant and unavoidable.

Specific Plan Area participants who receive benefits from the Specific Plan will pay their share of costs for improvements in question in proportion to the benefits received. The fair-share costs will be contributed to the local agency that has entered into an agreement with the City when the local agency is ready to implement the improvements at issue, provided the aforementioned strategy has been mutually agreed upon by the City and such other local agency.

Under cumulative plus full project buildout, all other intersections (see Table 4-6) are expected to operate at acceptable LOS during the a.m. and p.m. peak hours except the seven intersections and conditions listed below. The Project's level of contribution to these conditions is also shown.

Isabel Avenue (SR 84) at Jack London Boulevard—A.m. and p.m. peak hours operations would be substandard LOS E and F with the Jack London Extension option, but the Project only makes a considerable contribution in the a.m. peak hour. Operations would be acceptable with the Airway Boulevard Extension option. At the intersection of Isabel Avenue at Jack London Boulevard, improvements to address the substandard operations would require adding a fourth through lane in the northbound and southbound directions and overlap phasing on all right turns. However, widening is not feasible because of adjacent developed land uses to the east and the Livermore Water Reclamation Plant to the west. The *Route 84 Expressway Project Study Report* and the *Oaks Business Park Environmental Impact Report* (Pacific Municipal Consultants 2002) both dismissed the fourth through lane option as infeasible. Therefore, the impact at this intersection would be cumulatively significant and the project would make a considerable and unavoidable contribution.

Murrieta Boulevard at East Jack London Boulevard–Pine Street—A.m. peak hour operations would be a substandard LOS E, but the Project would not make a considerable contribution with the Jack London Boulevard Extension option. Operations at other times and conditions would be acceptable.

Murrieta Boulevard at East Stanley Boulevard—In the a.m. peak hour, operations would be substandard LOS D (Jack London Boulevard Extension) or LOS E (Airway Boulevard Extension), and the Project would make a considerable contribution. The proposed widening of Stanley Boulevard to six lanes would improve the LOS at this intersection for both the a.m. and p.m. peak hours. Implementation of the following mitigation measure would reduce the Project's contribution to a less-than-considerable level.

Cumulative Mitigation Measure TRA-2b: Improve Intersection of Murrieta Boulevard at East Stanley Boulevard

At the intersection of Murrieta Boulevard at East Stanley Boulevard, the City of Livermore will add a third westbound through lane. This could be accomplished as part of the proposed widening of Stanley Boulevard to six lanes. This measure would improve operations to LOS operations to LOS D with 38 seconds of delay during the a.m. peak hour and LOS C with 30 seconds of delay during the p.m. peak hour.

This project is included in the City's TIF program. Developments within the El Charro Specific Plan Area will contribute their fair-share cost of this improvement by paying Livermore TIFs.

Isabel Avenue (SR 84) at Airway Boulevard—In the a.m. peak hour, operations would decline to LOS F with the Airway Boulevard Extension, and the Project would make a considerable contribution. In the p.m. peak hour, operations would be substandard LOS F with either road option, but the Project would only make a considerable contribution with the Airway Boulevard Extension option. To address the substandard operations, a fourth through lane would need to be added on Isabel Avenue. However, widening is not feasible because of adjacent developed land uses to the east and the Livermore Water Reclamation Plant to the west. Therefore, the impact at this intersection would be cumulatively significant and the project would make a considerable and unavoidable contribution.

Santa Rita Road at Stoneridge Drive—In the a.m. peak hour, operations would decline to a substandard LOS F, and the Project would make a considerable contribution. In the p.m. peak hour, operations would decline to a substandard LOS F, but the Project would not make a considerable contribution. To address these deficiencies, additional northbound and southbound through lanes, an exclusive nouthbound free right-turn lane, and additional westbound free right-turn lanes would be needed. Widening would be necessary to make these improvements, but according to the City of Pleasanton, which would be the lead agency on any project at this intersection, these improvements are not feasible. Therefore, the impacts at this intersection would be cumulatively significant and the project would make a considerable and unavoidable contribution.

Rheem Drive–Milani Avenue at Stoneridge Drive—In the p.m. peak hour, operations would decline to a substandard LOS E, and the Project would make a considerable contribution. However, implementation of the following mitigation measure would reduce the Project's contribution to a less-than-considerable level.

Cumulative Mitigation Measure TRA-2c: Improve Intersection of Rheem Drive at Stoneridge Drive

At the intersection of Rheem Drive at Stoneridge Drive, the City of Pleasanton could re-stripe the northbound through lane as a shared left lane, through lane and right-turn lane; add split phasing to the northbound and southbound approaches; and add overlaps phasing to the eastbound right-turn and westbound left-turn lanes. If the City of

Pleasanton elects to implement this improvement, it would reduce the delays, resulting in LOS C with 30.3 seconds of delay during the p.m. peak hour. However, if the City of Pleasanton chooses not to implement this improvement, the impact would be significant and unavoidable.

The City of Livermore will confer with the City of Pleasanton, the City of Dublin, and Alameda County on a strategy to fund and complete mitigation measures within each other's jurisdictions. More specifically, the City of Livermore shall seek to enter into one or more binding agreements with each of these other local agencies in order to facilitate a fair and equitable subregional approach to traffic mitigation, to the mutual benefit of all of the affected jurisdictions. Depending on the willingness of these other local agencies to enter into such agreements, the ultimate result may be a single multijurisdictional agreement or one or more agreements between Livermore and one or more of the other agencies. The strategy will address fair-share mitigation for projects approved by one jurisdiction that contribute cumulatively considerable traffic to intersections and roadway segments in neighboring jurisdiction(s) with cumulatively substandard LOS.

The applicable standard for LOS shall be that established by each local agency for its current jurisdictional area and its SOI. If SOIs overlap, or jurisdiction over an intersection is split between two local agencies, the standard to be achieved by mitigation, where feasible, shall be determined by mutual agreement of the jurisdictions involved.

The City is willing to ensure that projects it approves contribute fair-share mitigation costs for improvements in other jurisdictions if, but only if, the other jurisdictions are also willing to reciprocate for projects within their jurisdictions that contribute considerably to traffic occurring within Livermore. The strategy also may allocate mitigation responsibility to each jurisdiction for improvements within its jurisdiction on the understanding that each jurisdiction will be addressing the cumulative contributions from projects in neighboring jurisdictions. A combination of approaches may also be utilized.

If a mutually agreeable strategy cannot be reached with the City of Pleasanton, the City of Dublin, and Alameda County, or any one of them, then the City of Livermore will not require contribution of mitigation for cumulative contributions to impacts in any other jurisdiction unwilling to agree to reciprocity with the City of Livermore. This is because, under such circumstances, the City could not be assured that projects it approves are being assessed for mitigation only in proportion to their impact and because the City may need to require reallocation of the mitigation contribution to intersections and roadway segments within Livermore itself, lacking assurance of mitigation funding from projects that may be approved by other jurisdictions. In the event that a mutually agreed-upon strategy is not reached, then mitigation of the El Charro Project's contribution to the impacted intersection or roadway segment

would be infeasible, and the impact would be considered significant and unavoidable.

Specific Plan Area participants who receive benefits from the Specific Plan will pay their share of costs for improvements in question in proportion to the benefits received. The fair-share costs will be contributed to the local agency that has entered into an agreement with the City when the local agency is ready to implement the improvements at issue, provided the aforementioned strategy has been mutually agreed upon by the City and such other local agency.

Valley Avenue-Bernal Road at Stanley Boulevard—In the p.m. peak hour, operations would decline to a substandard LOS F, but the Project would not make a considerable contribution.

Cumulative Impact TRA-3: Cumulative Contribution to Unacceptable Segment Operations under the 2025 Congestion Management Plan Scenario—Cumulatively Considerable and Unavoidable

With the addition of the Project, one MTS roadway segment, Stanley Boulevard west of SR 84, is expected to operate at unacceptable LOS and have an increase in v/c of greater than 3% in the 2025 CMP analysis conditions compared with the no-project conditions (see Tables 4-7a and 4-7b and 4-8a and 4-8b).

On Stanley Boulevard, west of SR 84 in the westbound direction, the baseline scenario would operate at LOS F during the a.m. peak hour. Cumulative trips would result in an increase of 3.3% in v/c (more than 3%) compared with the no-project conditions, which is a significant cumulative impact, and the Project would contribute the majority of the cumulative impact. Widening of Stanley Boulevard west of SR 84 is not presently part of any current local or County infrastructure planning. As such, it is not considered a feasible mitigation, as it would require the commitment, interest, and approval of the City of Pleasanton and Alameda County and incorporation into the Circulation Elements of each jurisdiction, which is not presently proposed by either of these entities, which renders the potential widening as speculative. In the event that widening of Stanley Boulevard actually were advanced, the following mitigation would apply. However, given the speculative nature of this improvement, for this EIR, this mitigation measure is not considered feasible at the present time, and thus no feasible mitigation measures have been identified that would reduce the project contribution to a level that is less than considerable.

Cumulative Mitigation Measure TRA-3: Fair-Share Contribution to Future Widening of Stanley Boulevard, if Advanced by Others

If and when widening of Stanley Boulevard is advanced by the City of Pleasanton or Alameda County, the City of Livermore would be willing to require a fair-share contribution relative to contributions of the El Charro Specific Plan.

The City of Livermore will confer with the City of Pleasanton, the City of Dublin, and Alameda County on a strategy to fund and complete

mitigation measures within each other's jurisdictions. More specifically, the City of Livermore will seek to enter into one or more binding agreements with each of these other local agencies in order to facilitate a fair and equitable subregional approach to traffic mitigation, to the mutual benefit of all of the affected jurisdictions. Depending on the willingness of these other local agencies to enter into such agreements, the ultimate result may be a single multijurisdictional agreement or one or more agreements between the City and one or more of the other agencies. The strategy will address fair-share mitigation for projects approved by one jurisdiction that contribute cumulatively considerable traffic to intersections and roadway segments in neighboring jurisdiction(s) with cumulatively substandard LOS.

The applicable standard for LOS shall be that established by each local agency for its current jurisdictional area and its SOI. If SOIs overlap, or jurisdiction over an intersection is split between two local agencies, the standard to be achieved by mitigation, where feasible, will be determined by mutual agreement of the jurisdictions involved.

The City is willing to ensure that projects it approves contribute fair-share mitigation costs for improvements in other jurisdictions if, but only if, the other jurisdictions are also willing to reciprocate for projects within their jurisdictions that contribute considerably to traffic occurring within the city of Livermore. The strategy also may allocate mitigation responsibility to each jurisdiction for improvements within its jurisdiction on the understanding that each jurisdiction will be addressing the cumulative contributions from projects in neighboring jurisdictions. A combination of approaches may be utilized also.

If a mutually agreeable strategy cannot be reached with the City of Pleasanton, the City of Dublin, and Alameda County, or any one of them, then the City of Livermore will not require contribution of mitigation for cumulative contributions to impacts in any other jurisdiction unwilling to agree to reciprocity with the City of Livermore. This is because, under such circumstances, the City could not be assured that projects it approves are being assessed for mitigation only in proportion to their impact and because the City may need to require reallocation of the mitigation contribution to intersections and roadway segments within Livermore itself, lacking assurance of mitigation funding from projects that may be approved by other jurisdictions. In the event that a mutually agreed-upon strategy is not reached, then mitigation of the El Charro Project's contribution to the impacted intersection or roadway segment would be infeasible, and the impact would be considered significant and unavoidable.

Specific Plan Area participants who receive benefits from the Specific Plan will pay their share of costs for improvements in question in proportion to the benefits received. The fair-share costs will be contributed to the local agency that has entered into an agreement with the City when the local agency is ready to implement the improvements

at issue, provided the aforementioned strategy has been mutually agreed upon by the City and such other local agency.

Cumulative Impact TRA-4: Cumulative Contributions to Unacceptable Freeway and Ramp Operations or Unacceptable Level of Service at Intersection during Peak Hours with Staples Ranch—No Increase over Conditions with Existing Stoneridge Drive Specific Plan

Table 4-9 compares the land uses assumptions and expected traffic generation for the Staples Ranch site under the existing and proposed amended Stoneridge Drive Specific Plan. This shows that the traffic generated by land uses in the proposed Stoneridge Drive Specific Plan amendment would be less than by land uses under the current Stoneridge Drive Specific Plan in all cases except for outbound trips in the weekday a.m. peak hour. Therefore, the proposed Stoneridge Drive Specific Plan amendment would not cause a greater traffic impact under daily and p.m. peak hour conditions. Further analysis was done to determine whether the additional a.m. peak hour trips would cause any additional impacts.

The highest numbers of a.m. peak hour trips would be generated under the office variant. For this scenario, there would be 191 additional outbound trips from the Staples Ranch site. These additional trips were assigned to the critical outbound turning movements from the Staples site heading to I-580 and to Dublin Boulevard at the intersections of El Charro Road with Jack London/Airway Boulevard, I-580 eastbound ramps, I-580 westbound ramps, and at Fallon Road/Dublin Boulevard. LOS at these intersections are shown in Table 4-10. All intersections are forecast to operate acceptably. Beyond these intersections, the traffic would disburse in various directions and thus would not cause a noticeable impact at any specific location; therefore, no additional intersections were analyzed. The additional traffic generated by the proposed Stoneridge Drive Specific Plan amendment would cause no additional cumulative traffic impacts than what would be caused by land uses allowed under the current Stoneridge Drive Specific Plan.

Table 4-10. Level of Service for 2030 with Project with Proposed Staples Specific Plan

	2030 +Project + Jack London Boulevard Extension
Intersection	A.M. Peak
El Charro Road/Jack London Blvd Ext	C
El Charro Road/580 eastbound Ramps	B
El Charro Road/580 westbound Ramps	C
Fallon Rd/Dublin Blvd	C

Thus, in the event that Staples Ranch is approved and built, the impact analysis above for Impacts TRA-1 and TRA-2 cumulative conditions would apply with according significance conclusions and required mitigation.

Cumulative Impact TRA-5: Cumulative Contributions to Unacceptable Freeway and Ramp Operations or Unacceptable Level of Service at Intersection during Peak Hours without the Stoneridge Drive Extension—Potentially Cumulatively Considerable and Unavoidable

Removing Stoneridge Drive from the cumulative roadway network would cause an increase in traffic volumes on segments of I-580, Dublin Boulevard, Central Parkway, Bush Road, El Charro Road, Stanley Boulevard west of El Charro Road, and Fallon Road, while reducing traffic on Jack London Boulevard and Stoneridge Drive. Traffic volumes on Stanley Boulevard east of El Charro Road would remain at approximately the same level as with conditions that would occur with the Stoneridge Drive extension.

Freeway Operations

The LOS on I-580 under cumulative conditions that would occur without the Stoneridge Drive extenson is shown in Table 4-11. Traffic volumes are expected to increase on segments of I-580 in the vicinity of the Project. The highest increase is expected on the segment of I-580 between El Charro Road and Santa Rita Road. However, LOS standards would not be exceeded on any segment of I-580. Therefore, this cumulative impact is considered less than significant and the project's contribution would be less than considerable.

Intersection Impacts

The intersection LOS without the Stoneridge Drive extension is shown in Table 4-12. LOS standards will be exceeded at 13 intersections; therefore, these cumulative impacts are considered significant. Four of these intersections are in Livermore and can be mitigated by the mitigation measures proposed for the conditions that would occur with the Stoneridge Drive extension. One of these intersections (Jack London/Airway Boulevard and El Charro Road) is within the City of Pleasanton's SOI but may have a split jurisdiction between the City of Pleasanton and the City of Livermore in the future. The other eight intersections are outside the jurisdiction of the City, and no improvement projects are currently identified or funded, and it is unknown if any mitigations are even feasible or whether the respective lead agencies would choose to implement mitigation projects. Therefore, the impact of the combination of the Specific Plan and removing Stoneridge Drive would be cumulatively significant.

The City proposes that the financial contribution by the El Charro Specific Plan to these cumulative impacts be no greater than previously identified under conditions that would occur with the Stoneridge Drive extension, because the additional impacts would be caused by a future policy decision by the City of Pleasanton. Although the Specific Plan's traffic contribution to the cumulative impacts may be greater or occur at different locations under conditions that occur without the Stoneridge Drive extension than under conditions that would occur

Table 4-9. Staples Ranch Project Trip Generation

				ITE	Daily	Daily	A.M. Peak Hour Traffic					P.M. Peak Hour Traffic				
Phase	Use	Size	Units	Code	Rate	Trips	Rate	% In	% Out	In	Out	Rate	% In	% Out	In	Out
1996 General Plan Stoneridge Drive SP Land Use—Staples Site																
Shopping Center	Retail	457.38	ksf	820	42.92	19,631	1.03	0.61	0.39	287	184	3.74	0.48	0.52	821	890
Industrial Park	Light Indus	1138.2	ksf	110	6.97	7,933	0.92	0.88	0.12	922	125	0.98	0.12	0.88	137	979
Comm Park	Park	20	acres	412.1	2.28	46	2	0.80	0.20	32.00	8.00	4	0.33	0.67	26.7	53.3
Total:						27,610				1,241	317				984	1,922
2006 Proposed Staples SP Amendment Land Use—Staples Site (Office Variant)																
Eldery Housing		800	dwellings	252	3.48	2,784	0.07	0.63	0.37	35	21	0.01	0.59	0.41	47	33
Ice Rink		170	ksf	465	23.6	4,012	1.18	0.45	0.55	90	110	2.36	0.45	0.55	181	221
Community Park		9	acres	412.1	2.28	21	2	0.80	0.20	14	4	4	0.33	0.67	15	21
Auto Dealer		331	ksf	841	33.34	11,036	2.21	0.73	0.27	534	198	2.8	0.40	0.60	371	556
Office		280	ksf	710	11.01	3,083	2.21	0.73	0.27	452	167	2.8	0.40	0.60	314	470
Total:						20,935				1125	500				928	1301
2006 Proposed Staples SP Amendment Land Use—Staples Site (Retail Variant)																
Eldery Housing		800	dwellings	252	3.48	2,784	0.07	0.63	0.37	35	21	0.01	0.59	0.41	47	33
Ice Rink		170	ksf	465	23.6	4,012	1.18	0.45	0.55	90	110	2.36	0.45	0.55	181	221
Community Park		9	acres	412.1	2.28	21	2	0.80	0.20	14	4	4	0.33	0.67	15	21
Auto Dealer		331	ksf	841	33.34	11,036	2.21	0.73	0.27	534	198	2.8	0.40	0.60	371	556
Retail		175	ksf	820	42.92	7,511	1.03	0.61	0.39	110	70	3.74	0.48	0.52	314	340
Total:						25,363				783	403				928	1171

Note:

ksf = Thousand square feet

Source: ITE *Trip Generation, 6th Edition* and City of Livermore Model.

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Table 4-11. Freeway Operations—2030 Full Project (Jack London Boulevard Extension) without the Stoneridge Drive Extension

Location	Type	Baseline (2008)			2030 No Project			2030 Full Project – Jack London Blvd Extension – No Stoneridge		
		Volume[1]	Density[2]	LOS[3]	Volume[1]	Density[2]	LOS[3]	Volume[1]	Density[2]	LOS[3]
I-580 Eastbound—A.M. Peak										
Hacienda Dr to Santa Rita Rd	Weave	6,044	21.1	C	9,250	35.5	E	9,325	35.8	E
Santa Rita Rd to El Charro Rd	Mainline	6,476	22.0	C	8,534	29.9	D	8,964	32.1	D
El Charro Rd to Airway Blvd	Mainline	6,880	30.2	D	8,898	31.7	D	9,136	33.1	D
Airway Blvd to Isabel Ave	Mainline	5,573	23.7	C	7,553	25.8	C	7,692	26.3	D
I-580 Westbound—A.M. Peak										
Isabel Ave to Airway Blvd	Mainline	8,258	41.8	E	8,513	29.8	D	8,536	29.9	D
Airway Blvd to El Charro Rd	Mainline	8,651	>45	F	8,790	31.2	D	8,709	30.8	D
El Charro Rd to Santa Rita Rd	Mainline	7,701	36.1	E	8,487	29.7	D	8,898	31.7	D
Santa Rita Rd to Hacienda Dr	Weave	8,276	29.7	D	8,607	32.4	D	8,572	32.2	D
I-580 Eastbound—P.M. Peak										
Hacienda Dr to Santa Rita Rd	Weave	9,088	35.3	E	9,606	37.4	E	9,640	37.4	E
Santa Rita Rd to El Charro Rd	Mainline	8,351	29.1	D	8,876	31.6	D	9,226	33.6	D
El Charro Rd to Airway Blvd	Mainline	9,011	>45	F	9,105	32.9	D	9,358	34.4	D
Airway Blvd to Isabel Ave	Mainline	8,237	41.6	E	8,341	29.0	D	8,450	29.5	D
I-580 Westbound—P.M. Peak										
Isabel Ave to Airway Blvd	Mainline	5,811	24.8	C	8,051	27.8	D	8,258	28.7	D
Airway Blvd to El Charro Rd	Mainline	6,588	28.6	D	8,970	32.1	D	9,574	35.8	E
El Charro Rd to Santa Rita Rd	Mainline	6,248	26.8	D	8,256	28.7	D	8,760	31.0	D
Santa Rita Rd to Hacienda Dr	Weave	6,579	23.2	C	8,627	32.1	D	8,686	32.5	D

Notes:

Significance Criteria = Significant Cumulative Impact = Decline to F; if already F, velocity-to-capacity ratio increase > 3 % and > 1% project contribution

Signicant impacts in **bold** (none in this table)

[1] Volume = vehicles per hour (vph)

[2] Density = passenger car per mile per lane (pc/m/ln)

[3] LOS = level of service

Source: Dowling Associates, Inc., 2006.

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Table 4-12. Peak Hour Intersection Level of Service Cumulative 2030 Conditions without the Stoneridge Drive Extension

Intersections	LOS Standard	Time Period	2008	LOS from 2030 Scenarios	
			No Project	Cumulative w/o Project	Cumulative with Project—Jack London Boulevard Extension—without Stoneridge Ext
Livermore					
1 El Charro Rd at I-580 eastbound ramps	Midlevel D	a.m.	B	B	C
		p.m.	A	B	C
2 El Charro Rd at Freisman Rd	None	a.m.	A	F	n/a
		p.m.	A	F	n/a
3 Airway Blvd at North Canyons Pkwy	E	a.m.	C	C	C
		p.m.	B	C	C
4 Airway Blvd (SR 84) at I-580 westbound ramps	E	a.m.	B	C	C
		p.m.	B	C	C
5 Airway Blvd (SR 84) at I-580 eastbound ramps	E	a.m.	D	C	C
		p.m.	C	C	C
6 Isabel Ave-Kitty Hawk Rd (SR 84) at Airway Blvd	E	a.m.	E	n/a	n/a
		p.m.	C	n/a	n/a
7 Collier Canyon Rd at North Canyons Pkwy	Midlevel D	a.m.	B	C	C
		p.m.	B	B	C
8 Isabel Ave (SR 84) at Jack London Blvd	Midlevel D	a.m.	B	E	D
		p.m.	C	F	F
9 Isabel Ave (SR 84) at East Stanley Blvd offramp (north)	Midlevel D	a.m.	B	C	C
		p.m.	C	D	D
10 Isabel Ave (SR 84) at Stanley Blvd onramp (south)	Midlevel D	a.m.	C	B	B
		p.m.	C	C	C
11 Isabel Ave (SR 84) at Concannon Blvd	Midlevel D	a.m.	C	C	D
		p.m.	C	B	B
12 East Vallecitos Rd (SR 84) at Isabel Ave	Midlevel D	a.m.	C	B	B
		p.m.	B	A	A

Intersections	LOS Standard	Time Period	2008	LOS from 2030 Scenarios	
			No Project	Cumulative w/o Project	Cumulative with Project—Jack London Boulevard Extension—without Stoneridge Ext
13 Murrieta Blvd at East Jack London Blvd–Pine St	Midlevel D	a.m.	E	F	E
		p.m.	D	D	D
14 Murrieta Blvd at East Stanley Blvd	Midlevel D	a.m.	C	D	E
		p.m.	C	D	D
15 Isabel Ave-Campus Dr at Portola Ave	E	a.m.	n/a	C	C
		p.m.	n/a	C	D
16 Isabel Ave (SR 84) at I-580 westbound ramps	E	a.m.	n/a	D	C
		p.m.	n/a	C	C
17 Isabel Ave (SR 84) at I-580 eastbound ramps	E	a.m.	n/a	B	C
		p.m.	n/a	C	D
18 El Charro Rd at West Jack London Blvd	Midlevel D	a.m.	A	C	C
		p.m.	B	D	F
19 Isabel Ave (SR 84) at Airway Blvd	E	a.m.	n/a	E	D
		p.m.	n/a	F	F
20 Airway Blvd at Airway Extension	Midlevel D	a.m.	n/a	n/a	n/a
		p.m.	n/a	n/a	n/a
Dublin					
21 Hacienda Dr at Dublin Blvd	D	a.m.	D	D	D
		p.m.	C	D	E
22 Hacienda Dr at I-580 westbound ramps	D	a.m.	B	C	C
		p.m.	B	C	C
23 Tassajara Rd at Central Pkwy	D	a.m.	C	C	C
		p.m.	B	D	D
24 Tassajara Rd at Dublin Blvd	D	a.m.	C	C	D
		p.m.	C	D	D

Intersections	LOS Standard	Time Period	2008	LOS from 2030 Scenarios	
			No Project	Cumulative w/o Project	Cumulative with Project—Jack London Boulevard Extension—without Stoneridge Ext
25 Tassajara Rd at I-580 westbound ramps	D	a.m.	B	D	F
		p.m.	C	B	C
26 Fallon Rd at Central Pkwy	D	a.m.	B	C	C
		p.m.	B	D	D
27 Fallon Rd at Dublin Blvd	D	a.m.	C	C	C
		p.m.	B	C	C
28 El Charro Rd-Fallon Rd at I-580 westbound ramps	D	a.m.	B	B	B
		p.m.	B	C	E
Pleasanton					
29 Hacienda Dr at I-580 eastbound ramps	D	a.m.	B	C	C
		p.m.	B	C	C
30 Hacienda Dr at Owens Dr	D	a.m.	B	C	C
		p.m.	C	C	C
31 West Las Positas Blvd at Stoneridge Dr	D	a.m.	C	C	C
		p.m.	C	C	C
32 Santa Rita Rd at Pimlico Dr-I-580 eastbound ramps	D	a.m.	D	F	E
		p.m.	D	D	F
33 Santa Rita Rd at West Las Positas Blvd	D	a.m.	C	C	C
		p.m.	C	D	E
34 Santa Rita Rd at Stoneridge Dr	D	a.m.	C	E	F
		p.m.	C	F	F
35 Santa Rita Rd at Valley Ave	D	a.m.	D	C	C
		p.m.	D	C	C
36 Rheem Dr–Milani Ave at Stoneridge Dr	D	a.m.	B	C	C
		p.m.	B	E	C

Intersections	LOS Standard	Time Period	2008 No Project	LOS from 2030 Scenarios Cumulative w/o Project	LOS from 2030 Scenarios Cumulative with Project—Jack London Boulevard Extension—without Stoneridge Ext
37 Kamp Dr–Garden Cir at Stoneridge Dr	D	a.m.	B	A	B
		p.m.	A	A	A
38 Busch Rd at Valley Ave	D	a.m.	D	D	E
		p.m.	C	C	F
39 Valley Ave-Bernal Rd at Stanley Blvd	D	a.m.	C	D	D
		p.m.	D	E	E
40 El Charro Rd at Busch Rd	D	a.m.	n/a	B	B
		p.m.	n/a	B	D
41 El Charro Rd at Stanley Blvd	D	a.m.	n/a	B	C
		p.m.	n/a	B	C

	Significant impact due to contribution to not meeting level of service (LOS) standard
	Less than significant due to reduction in delay with Project compared to w/o Project.
	Significant impact due to > 5 second delay
	Significant due to potential Pleasanton General Plan Amendment removing the Stoneridge Extension

with the extension, the increased or changed impacts would be caused by a future policy action by an outside agency, and therefore mitigation would be required by that agency. However, it is possible that mitigation may not ultimately be adequate to address cumulative impacts; thus, under the cumulative conditions, this is considered a significant impact and the project would have a considerable and unavoidable contribution.

The discussion below addresses impacts by specific intersection.

Intersection Impacts in Livermore

- **El Charro Road and Jack London/Airway Boulevard.** The intersection of El Charro Road and Jack London/Airway Boulevard would operate at LOS F in the p.m. peak. Implementation of a northbound right-turn overlap would reduce the impacts at this intersection to less than considerable. This impact would be caused solely by the City of Pleasanton, should it approve the removal of the Stoneridge Drive extension from its general plan. The City of Livermore will confer with the City of Pleasanton to identify appropriate funding mechanisms necessary to implement this mitigation. If mitigation is not ultimately adopted, the cumulative impact would be significant and unavoidable.
- **Isabel Avenue and Jack London Boulevard.** The intersection of Isabel Avenue and Jack London Boulevard would operate at LOS F during the p.m. peak. As described above for Cumulative Impact TRA-2, there is no feasible mitigation. If mitigation is not ultimately adopted, the cumulative impact would be significant and unavoidable.
- **Murrieta Boulevard and Jack London Boulevard–Pine Street.** The intersection of Murrieta Boulevard and Jack London Boulevard–Pine Street would operate at LOS E during the a.m. peak. Implementation of Mitigation Measure TRA-2a previously discussed in section 3.15 would reduce the project's contribution at this intersection to less than considerable.
- **Stanley Boulevard and Murrieta Boulevard.** The intersection of Stanley Boulevard and Murrieta Boulevard would operate at LOS E during the a.m. peak. Implementation of Cumulative Mitigation Measure TRA-2b discussed above would reduce the project's contribution at this intersection to less than considerable.
- **Isabel Avenue and Airway Boulevard.** The intersection of Isabel Avenue and Airway Boulevard would operate at LOS F during the p.m. peak. As described previously under Cumulative Impact TRA-2, there is no feasible mitigation. If mitigation is not ultimately adopted, the cumulative impact would be significant and unavoidable.

Impacts in Dublin

- **Hacienda Drive and Dublin Boulevard.** The intersection of Hacienda Drive and Dublin Boulevard would operate at LOS E during the p.m. peak. No additional improvements have been identified or funded, and it is unknown whether any mitigation is even feasible or whether the respective

lead agencies would choose to implement any mitigation projects. Therefore, the impact of removing Stoneridge Drive would be cumulatively significant and potentially unavoidable.

- **Tassajara Road and I-580 westbound ramp intersection.** The intersection of Tassajara Road and I-580 westbound ramps would operate at LOS F during the p.m. peak. No additional improvements have been identified or funded, and it is unknown whether any mitigation is even feasible or whether the respective lead agencies would choose to implement any mitigation projects. Therefore, the impact of removing Stoneridge Drive would be cumulatively significant and potentially unavoidable.
- **Fallon Road and I-580 westbound ramp intersection.** The intersection of El Charro Road–Fallon Road and the I-580 westbound ramps would operate at LOS E during the p.m. peak. Adding a third westbound right-turn lane could mitigate this impact. It is unknown whether the City of Dublin and Caltrans would choose to implement this mitigation. Therefore, the impact of removing Stoneridge Drive would be cumulatively significant and potentially unavoidable.

Impacts in Pleasanton

- **Santa Rita Road and Pimlico Drive I-580 eastbound ramp intersection.** The intersection of Santa Rita Road and Pimlico Drive–I-580 eastbound ramps would operate at LOS E in the a.m. and LOS F during the p.m. peak. No additional improvements have been identified or funded, and it is unknown whether any mitigation is even feasible or whether the respective lead agencies would choose to implement any mitigation projects. Therefore, the impact of removing Stoneridge Drive would be cumulatively significant and potentially unavoidable.
- **Santa Rita Road and West Las Positas Boulevard.** The intersection of Santa Rita Road and West Las Positas Boulevard would operate at LOS E during the p.m. peak. No additional improvements have been identified or funded, and it is unknown whether any mitigation is even feasible or whether the respective lead agencies would choose to implement any mitigation projects. Therefore, the impact of removing Stoneridge Drive would be cumulatively significant and potentially unavoidable.
- **Santa Rita Road and Stoneridge Drive.** The intersection of Santa Rita Road and Stoneridge Drive would operate at LOS F during the a.m. and LOS F during the p.m. peak. No additional improvements have been identified or funded, and it is unknown whether any mitigation is even feasible or whether the respective lead agencies would choose to implement any mitigation projects. Therefore, the impact of removing Stoneridge Drive would be cumulatively significant and potentially unavoidable.
- **Bush Road and Valley Drive.** The intersection of Bush Road and Valley Drive would operate at LOS E during the a.m. and LOS F during the p.m. peak. No additional improvements have been identified or funded, and it is unknown whether any mitigation is even feasible or whether the respective lead agencies would choose to implement any mitigation projects.

Therefore, the impact of removing Stoneridge Drive would be cumulatively significant and potentially unavoidable.

- **Stanley Boulevard and Valley Drive.** The intersection of Stanley Boulevard and Valley Drive would operate at LOS E during the p.m. peak. No additional improvements have been identified or funded, and it is unknown whether any mitigation is even feasible or whether the respective lead agencies would choose to implement any mitigation projects. Therefore, the impact of removing Stoneridge Drive would be cumulatively significant and potentially unavoidable.

Cumulative Impact TRA-6: Cumulative Contribution to Potential Traffic Safety Issues along El Charro Road—Less than Cumulatively Considerable

The cumulative modifications assumed to El Charro Road within the El Charro Specific Plan Area include the following.

- The extension of Stoneridge Drive (as called for in Pleasanton's current general plan) to the intersection with two through lanes, three dedicated left-turn lanes, and a dedicated right-turn lane.
- The northbound approach of El Charro Road will be modified to have three through lanes, two dedicated left-turn lanes, and one dedicated right-turn lane.
- The U-turn will be eliminated.
- On the north side of the Jack London Boulevard intersection, there would be four lanes of travel.
- The lanes would split near the eastbound interchange ramps, with two dedicated through lanes, a through right-turn lane, and a dedicated right-turn lane. Interchange improvements are also envisioned to provide three lanes in each direction over the bridge, separated by a raised barrier.
- The eastbound offramp will have four lanes: two dedicated left and two dedicated right-turn lanes.

The ultimate configuration addresses the major intersections at the I-580 ramps and at the El Charro Road/Jack London Boulevard/Stoneridge Drive intersection. No considerable cumulative traffic safety impacts are identified for the portion of El Charro Road from I-580 to the existing quarry road intersection.

> The future extension of El Charro Road to Stanley Boulevard (as called for in Pleasanton's current general plan) will need to address the alignment of the roadway patterns during future design of the extension and any associated intersection. Design of this road is the responsibility of the project proponent, which likely would be the City of Pleasanton or Alameda County.

As described in section 3.15, the El Charro Road design has been developed with the input of quarry operators, the City of Livermore, and the City of Pleasanton, and design safety features have been included in the road design such that with

cumulative road volumes, the new facility would not be expected to result in above-average traffic accidents for this type of facility. Thus, a cumulatively considerable traffic safety impact is not identified for El Charro Road adjacent to the Project, and the Project would not make a cumulatively considerable contribution.

Cumulative Impact TRA-7: Cumulative Impacts on Emergency Access—Less than Cumulatively Considerable

The proposed Project would provide for adequate access to the Specific Plan Area for emergency vehicles. With the development and roadway infrastructure improvements that are planned and assumed to occur in the 2030 cumulative condition, emergency access to locations adjacent to the Specific Plan Area would improve.

Though the proposed Project would change emergency access routes through the addition and modification of roadways, as described in section 3.15, the Project includes planning for all phases to provide adequate emergency access. Thus, the Project would not contribute to a cumulative impact on emergency vehicle access.

Cumulative Impact TRA-8: Cumulative Impacts on Pedestrian and Bicycle Facilities—Beneficial Contribution

As discussed in section 3.15, "Transportation and Traffic," with implementation of the proposed Project, roadways within the Specific Plan Area would be upgraded or designed to include new pedestrian and bicycle facilities to serve future uses planned for under the Specific Plan. The Project's cumulative contribution to pedestrian and bicycle facilities is beneficial. There would be no cumulative impact.

Cumulative Impact TRA-9: Cumulative Changes in Transit Demand—Less than Cumulatively Considerable

As discussed in section 3.15, "Transportation and Traffic," future growth and development within the Specific Plan Area would not result in any substantive increase to the ridership on LAVTA buses or the BART system. Therefore, the Project's contribution of increases in transit demand is less than cumulatively considerable.

Cumulative Impact TRA-10: Cumulative Construction-Related Traffic Flow and Circulation Impacts—Cumulatively Considerable and Unavoidable With Mitigation

Commercial development within the Specific Plan Area would occur in phases as development project applications are submitted and approved. Each separate development project within the Specific Plan Area would contribute to construction-related traffic flow and circulation impacts caused by development in the vicinity of the Project. The effects of this contribution would be reduced by the mitigation measure identified in section 3.15 but not necessarily to a less-than-considerable level, when considering the potential for other construction in the area to be occurring simultaneously. Thus, the Project is considered to contribute considerably to a considerable and unavoidable cumulative impact.

Mitigation Measure TRA-9: Prepare and Implement a Construction Traffic Management Plan
This mitigation is discussed in section 3.15.

Alternatives Analysis

In accordance with Section 15126.6 of the State CEQA Guidelines, an EIR must evaluate a "range of reasonable alternatives to the project, or to the location of the project, which could feasibly attain the basic objectives of the project." The discussion of alternatives should focus on "alternatives capable of eliminating any significant adverse impacts or reducing them to below a level of significance, even if these alternatives could impede to some degree the attainment of the project objectives or would be more costly." CEQA further directs that "the significant effects of an alternative shall be discussed, but in less detail than the significant effects of the project as proposed." The factors that may be taken into account when addressing the feasibility of alternatives include site suitability, economic viability, availability of infrastructure, General Plan consistency, other plans or regulatory limitations, jurisdictional boundaries, and whether the proponent can reasonably acquire, control or otherwise have access to the alternative site.

The decision to select alternative locations needs to be based on whether off-site locations would avoid or substantially lessen any of the significant effects of the Project. The lead agency also must determine if no feasible alternative locations exist and disclose the reasons for this assessment. The final decision regarding the feasibility of alternatives lies with the decision-maker for a given project who must make the necessary findings addressing the potential feasibility of reducing the severity of significant environmental effects (PRC 21081; see also State CEQA Guidelines 15091).

State CEQA Guidelines define "feasible" to mean "capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors." When making the decision as to whether an alternative is feasible or infeasible, the decision-making body may consider the stated project objectives in an EIR in light of any relevant economic, environmental, social, and technological factors.

Project Goal and Objectives

According to the El Charro Specific Plan, the proposed Project has the following goals and objectives.

- formulate a specific plan that requires high quality development consistent with the goals and vision of the General Plan;
- ensure development is consistent with Scenic Corridor policies and objectives as they exist now or as they may be modified as part of the Project;
- provide a major east-west roadway connection between State Route (SR) 84 and El Charro Road;
- participate in planning full improvements for El Charro Road that accommodate capacity and safety concerns of Specific Plan properties and surrounding land uses;
- realign and upgrade Freisman Road as part of circulation improvements;
- provide a new roadway to improve access to the properties located in the eastern and southern parts of the Specific Plan Area;
- identify and implement a funding plan to ensure the provision of public infrastructure necessary to serve El Charro development. Consider and incorporate other agency and landowner projects in the specific program, where feasible, requiring funding by those entities for those studies pertaining to projects or facilities that may involve the Project Area or the larger El Charro area (e.g., additional improvements to El Charro Road, Zone 7 diversion channel, etc.);
- plan for development that is compatible with surrounding land uses, including quarries and the Livermore Municipal Airport;
- ensure protection of environmentally sensitive assets through the formulation of a specific plan designating appropriate development envelopes and environmental mitigations;
- include policies in the Specific Plan that encourage coordination with other appropriate entities in planning and implementing current and future phased improvements to the El Charro/I-580 interchange and creek and flood control system; and
- create certainty regarding development potential and streamline the permit process to require consistency between the Specific Plan and environmental document. Create a specific plan that provides a positive climate for business investment, minimizes risk, and (through a property-based funding mechanism such as an assessment district) allocates costs for improvements and benefits received in a prudent and equitable manner among participating property owners.

Following Section 15126.6 of the State CEQA Guidelines, a lead agency only needs to analyze alternatives that would attain most of the basic objectives of the project. Thus, alternatives that do not meet most of the above objectives are not analyzed in this EIR.

Proposed Project

The proposed Project includes a number of distinct elements, including the following.

- El Charro Specific Plan, including the following elements:
  - land use program;
  - design guidelines and standards;
  - circulation and infrastructure goals and policies;
  - circulation/road improvements;
  - utilities and infrastructure improvements; and
  - open space, public services, and community facilities.
- Development projects within the Specific Plan Area.
- Development agreements.
- Financing mechanisms.
- Phasing of public improvements.

Impacts of the Proposed Project

State CEQA Guidelines 15126.6 (f) states that "alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the project." As such, alternatives that do not avoid or substantially lessen significant effects of the Project do not need to be analyzed in an EIR.

The analysis in this EIR identifies the following environmental effects.

- **Aesthetics and Visual Resources**—The Specific Plan would result in a significant change of the visual character and quality from rural/agricultural to a more urban character and contribute to cumulative changes in visual character. The Project also would contribute to cumulative light and glare impacts that can be reduced with proposed mitigation, but not to a less than significant level.
- **Agricultural Resources—**The Project would result in less than significant impacts and cumulative contributions to agriculture due to planning in the City's general plan.
- **Air Quality—**Traffic emissions of CO would increase locally but would be less than significant. Project-related criteria pollutant emissions and cumulative contribution would increase and be significant and unavoidable, even with mitigation.
- **Biological Resources—**The Project would significantly affect habitat for the CRLF, the western pond turtle, the burrowing owl, and several raptor

species. The Project also may significantly affect habitat for the CTS and vernal pool shrimp. Seasonal wetlands would be filled on the Prime Outlets Livermore Valley site, and riparian vegetation along the Arroyo Las Positas and Cottonwood Creek would be removed to accommodate several bridge crossings. If the Airway Boulevard Extension option is selected, approximately 500 feet of Cottonwood Creek may need to be relocated. The Project's direct impacts can be mitigated to a less than significant level. Cumulative impacts, however, would be significant and unavoidable, due to the conversion of nearly all of the extant land covers south of I-580 between Livermore and Pleasanton. While project mitigation would reduce the Project's contribution to this cumulative impact, it would not be to a less-than-considerable level.

- **Cultural Resources**—There are several known cultural resource sites within the Project Area and a high-sensitivity area around the Arroyo Las Positas and Cottonwood Creek. The Project may disturb known and unknown cultural resources, but the significant impacts and cumulative contribution can be reduced to a less-than-significant level with the mitigation recommended in this EIR.
- **Geology, Soils, and Paleontology**— Project excavation may result in unstable soils, erosion, and sedimentation which is a temporary significant impact. The project soils at the residential site may be subject to liquefaction. Project impacts and cumulative contributions can be controlled, by building standards and the mitigation recommended in this EIR, to a less-than-significant level.
- **Hazards and Hazardous Materials**—Project construction may disturb one previously contaminated area. Project construction, operations, and traffic may entail some risk of accidental release of petroleum or hazardous materials. Buildout of the Project may increase potential ignition sources but also would eliminate much of the area of potential wildfire south of I-580. Existing local, state, and federal regulations and the mitigation in this EIR would reduce project impacts and cumulative contributions to a less-than-significant level.
- **Hydrology and Water Quality—**Some of the Project is in the 100-year floodplain, thus requiring flood control infrastructure including a detention basin, mass fill, and an overbank channel. The Project would increase urban runoff. Construction may result in runoff and sedimentation. Water quality swales and basins are included in the Project to treat runoff prior to discharge to the Arroyo Las Positas. The Project may introduce incompatibilities with future regional flood control facilities. The Project's impacts and cumulative contributions on hydrology and water quality are limited by project improvements and would be reduced to a less-than-significant level through mitigation recommended in this EIR.
- **Land Use and Planning**—The Project is consistent with the general plan, but there is a potential for compatibility issues concerning the adjacent quarry area, particularly as it relates to the Jack London Boulevard Extension. The compatibility issues and cumulative contributions can be

mitigated to a less-than-significant level through the recommended mitigation in this EIR.

- **Mineral Resources**—The Jack London Boulevard Extension could impede exploitation of the significant mineral resources on the land south of the Arroyo Las Positas. Mitigation is recommended in this EIR to reduce this impact to a less-than-significant level. The El Charro Road widening has been designed to address potential impacts related to increased commercial traffic and quarry traffic such that significant traffic, incompatibility issues, and cumulative contributions to mineral resource impacts can be avoided.
- **Noise**—Traffic noise would increase locally. Direct and cumulative noise impacts are either less than significant or can be mitigated to a less-than-significant level through the recommended mitigation in this EIR.
- **Population and Housing—**The Project would create employment, which would increase demand for housing in the region, but the increased housing demand can be accommodated by the City of Livermore and regional planning.
- **Public Services and Utilities**—The Project would increase demand for public services and utilities. The Specific Plan establishes financing mechanisms and infrastructure phasing to meet these demands without resulting in significant impacts or cumulatively considerable contributions.
- **Recreation**—The Project would provide additional recreation amenities in the form of open space and trails but could result in the loss of a private driving range.
- **Transportation and Traffic**—The Project would substantially increase local traffic and regional traffic. Due to the infeasibility of traffic mitigation at certain locations, there would be significant unavoidable direct and cumulative impacts along certain segments and at certain intersections. Mixing of commercial, commuter, and quarry traffic may create traffic safety issues, but these impacts can be mitigated to a less-than-significant level. However, the frequency and severity of traffic accidents along El Charro Road will increase given the limited existing number of accidents, which is a significant and unavoidable impact.
- **Growth Inducement—**The Project would result in employment growth that would result in population growth in the region. This growth is in accordance with the City of Livermore General Plan.

Alternatives Analyzed in the Draft EIR

Alternatives considered in this draft EIR are discussed below. Table 4-13 provides a summary of the alternatives considered and identifies which alternatives were analyzed in this EIR and which alternatives were dismissed from further analysis and why (a separate discussion at the end of this chapter provides a more detailed discussion of the dismissed alternatives).

The following alternatives were initially evaluated for their feasibility and their ability to achieve most of the project objectives while avoiding, reducing, or minimizing significant impacts identified for the proposed Project. All of these alternatives were determined to be feasible (or potentially feasible) and would meet at least some of the project objectives (though not necessarily all of the objectives). The ability of these alternatives to substantially lower the significant impacts identified for the proposed Project is discussed below. All subject areas are analyzed for each alternative determined to be potentially feasible, though at a much more general level than in Chapter 3.

Alternative 2—No Project

CEQA requires analysis of the No-Project Alternative.

Alternative Characteristics

This alternative would result in no change in land use in the Specific Plan Area, no project development, and no new infrastructure.

Impact Analysis

- **Aesthetics and Visual Resources**—This alternative would not change site aesthetics.
- **Agricultural Resources**—This alternative would not affect agriculture.
- **Air Quality**—No new emissions would occur.
- **Biological Resources**—Biological resources would not be disturbed. Ongoing agricultural and golf course activity would maintain the current habitat conditions and neither improve nor degrade current conditions.
- **Cultural Resources**—No new disturbances to cultural resources would occur. Ongoing agricultural activity may continue to affect surficial cultural deposits where present.
- **Geology, Soils, and Paleontology**—No new geology, soils, or paleontology impacts would occur.
- **Hazards and Hazardous Materials**—No new human health exposure would occur.
- **Hydrology and Water Quality**—The project site would continue to flood as under existing conditions. No new source of water quality contaminants would be introduced.
- **Land Use and Planning**—As no new land uses would be introduced, there would be no land use impacts. However, with no development in this area, it is likely that either business/commercial development pressure would shift to other areas in Livermore, Dublin, or Pleasanton, and the overall development

Table 4-13. El Charro Specific Plan, Alternatives Considered

Alternative	Primary Features	Summary of Alternatives Analysis
1. Proposed Project	El Charro Specific Plan, including the following elements: —Land use program —Design guidelines and standards —Circulation and infrastructure goals and policies —Circulation/road improvements —Utilities and infrastructure improvements —Open space, public services and community facilities Development projects within the Specific Plan Area Development agreements Financing mechanisms Phasing of public improvements	Proposed Project. Presented in Chapter 2.0. **Analyzed in Chapters 3.1–3.15 and 4.**
2. No Project	No Specific Plan No development in Specific Plan Area No infrastructure	**Analyzed in draft EIR as required by California Environmental Quality Act.** Would result in no new development but would not meet Project objectives.
3. Flood Control Desilting Alternative	Desilting of the Arroyo Las Positas from Isabel Avenue through the golf course reach No detention basin	**Considered feasible and analyzed in draft EIR.** This alternative would avoid the need for a detention basin, which would reduce the impact on potential upland habitat for the California tiger salamander and that may be utilized by burrowing owls. However, this alternative would substantially increase impacts on the Arroyo Las Positas riparian areas, which are suitable aquatic habitat for the California red-legged frog and other riparian species.

Alternative	Primary Features	Summary of Alternatives Analysis
4. Flood Control Flow-Through Alternative	Facilities to pass north overbank flow through Specific Plan Area No detention basin	**Considered feasible and analyzed in draft EIR.** This alternative would avoid the need for a detention basin, which would reduce the impact on potential upland habitat for the California tiger salamander and that may be utilized by burrowing owls. However, this alternative would reduce the developable footprint of several of the properties in the Specific Plan Area due to the need for facility space to pass the flow through the area. This alternative would not increase the amount of overbank flow passed to the Staples Ranch area and across I-580 but would not reduce flow to these areas like the proposed Project would.
5. Airway Boulevard Extension, Middle Alignment Alternative	Routing of Airway Boulevard Extension through the middle of the golf course	**Considered feasible and analyzed in draft EIR.** This alternative would avoid the potential need to realign part of Cottonwood Creek to facilitate the proposed Airway Boulevard Extension and would avoid a Cottonwood Creek crossing, thus reducing and avoiding impacts on biological resources. However, this alternative would require the relocation of the golf course clubhouse and would require more substantial redesign of the golf course.

Alternative	Primary Features	Summary of Alternatives Analysis
6. Children's Hospital Site Alternative 1	Realignment of Cottonwood Creek to increase developable area on property	**Considered feasible and analyzed in draft EIR.** This alternative has been suggested by different potential project proponents. Realignment of the creek would unify the northwest and east parcels. This may allow for a reduction in the need for higher buildings for potential business/commercial park uses or church development by increasing the contiguous upland expanse and might avoid the need for a General Plan Amendment concerning the visual corridor policy. However, Cottonwood Creek provides aquatic habitat for the California red-legged frog and a potential migration corridor for the California tiger salamander and other riparian species, and its realignment would reduce the amount of extant riparian habitat.
7. Children's Hospital Site Alternative 2	No development of southern parcel on the Children's Hospital site	**Considered feasible and analyzed in draft EIR.** This alternative would include no business/commercial park uses or church development on the southern parcel, which would avoid any direct conversion of the land, avoid the need for mass fill to remove any development from the floodplain, and avoid the need for two additional bridges to facilitate transit across the site parcels. It is possible that the southern parcel could be used for future flood control facilities, habitat, or perhaps golf course redesign area. This alternative, because it reduces development potential, would reduce impacts related to multiple subject areas such as traffic, air quality, and biological resources. This alternative would reduce potential buildout of the Specific Plan, which would reduce funding for project infrastructure However, given the limit on land, this may result in larger massing on the northwest and east parcels and may increase the potential need for a General Plan Amendment concerning the visual corridor policy.

Alternative	Primary Features	Summary of Alternatives Analysis
8. Visual Corridor Compliant Specific Plan	No General Plan Amendments to allow inconsistency with visual corridor policy for Prime Outlets Livermore Valley or potential church use on Children's Hospital property	**Considered potentially feasible and analyzed in draft EIR.** This alternative would better preserve a continuous view of the hills south of Pleasanton and Livermore than the proposed Project. This alternative would provide for sufficient space to provide a similar level of buildout as the proposed Project. However, the lack of any accommodation on building heights would result in a more spread out and continuous expanse of lower buildings across the Prime Outlets and Children's Hospital sites, which may be aesthetically inferior to the proposed Project. Architectural flourishes above the height allowed by the visual corridor policy would not be allowed, which could reduce the aesthetic appeal of proposed development.
Alternatives Considered but Dismissed from Further Analysis in this EIR		
A. Flood Control Diversion to Lake H Alternative	Use of pipes and pumping to route floodplain flows into Lake H No detention basin	Analyzed for feasibility. *Dismissed from further analysis in draft EIR as this alternative would require extensive take of private land through a significant mineral resource area, and Lake H is not available today. Thus, this alternative is not considered feasible.*
B. Jack London Boulevard Extension, Northern Four-Lane Alignment Alternative	Routing of four-lane Jack London Boulevard Extension along interim two-lane alignment mostly on City-owned land.	Analyzed for feasibility. *Dismissed from further analysis in draft EIR as infeasible because this alternative would either require extensive above-ground construction in the Federal Aviation Administration (FAA) designated runway protection zone (which FAA will not permit) or require an extensive underground tunnel in an area of shallow groundwater, which is considered logistically and economically suspect and would create unnecessary traffic safety concerns.*

Alternative	Primary Features	Summary of Alternatives Analysis
C. Limited Commercial Development Alternative	Lowered commercial buildout of the Specific Plan 750,000 square foot cap on commercial space potential	Analyzed for feasibility. *Dismissed from further analysis in draft EIR as infeasible because this alternative would not generate sufficient funding for the infrastructure necessary to serve the Specific Plan Area as a whole. The infrastructure needs for the Specific Plan are not linear in that the level of infrastructure development would be similar for a 750,000 square foot development as that needed for a 1.5 million square foot development due to the need to extend roads, water lines, sewer lines, and other infrastructure to the undeveloped site.*
D. Children's Hospital Site Alternative 3	Develop commercial uses on City-owned land zoned for open space in the Specific Plan Area instead of the development of east and south parcels on the Children's Hospital property	Analyzed for feasibility. *Dismissed from further analysis in draft EIR as this alternative would require the use of land purchased by the City using FAA-derived funding that constrains commercial use of such land. The FAA requirements specify that the land use may be used for commercial uses that are related to airport use. This is not considered probable, as the land is separated from the airport by sufficient distance that lowers the potential feasibility of any such use. In addition, such commercial uses are not likely to be as intensive as business/commercial park uses on other nonconstrained land in the Specific Plan Area (such as the Children's Hospital site), which also would result in economic infeasibility issues due to the cost of infrastructure.*

Alternative	Primary Features	Summary of Alternatives Analysis
E. Dedicated El Charro Truck Lanes Alternative	Dedicated truck lanes along El Charro Road. Flyover or underpass at Jack London Boulevard/Airway Boulevard	Analyzed for feasibility and potential to reduce significant impacts of the Project. *Dismissed from further analysis in draft EIR as this alternative, while it would segregate commercial and quarry traffic along El Charro Road, it also would introduce unsafe weaving and merging areas that would increase the potential for accidents. By comparison to the proposed Project, such an alternative is not considered an improvement in traffic safety along El Charro Road and thus would not reduce a significant impact of the proposed Project and was dismissed from further analysis in the EIR.*
F. Alternative Commercial Development Locations	Retention of the Specific Plan in current uses. 1.5 million square feet at alternative locations Location 1—SMP-38, SMP-39, SMP-40 Location 2—Doolan Canyon Location 3—North Livermore	Analyzed for feasibility, ability to meet most of the project objectives, and ability to avoid/reduce project significant impacts *Dismissed from further analysis in draft EIR, as the various versions of this alternative ultimately would not meet the fundamental objective to develop the Specific Plan Area in accordance with the general plan. The placement of business/commercial park use in other parts of the city would require a General Plan Amendment or an increase of intensity at other business/commercial park lands beyond that planned for in the general plan. Placement of business/commercial park uses at SMP-38, 39, and 40 would result in significant unavoidable impacts on mineral resources. Placement of business/commercial park uses at Doolan Canyon would require City annexation and would result in significant unavoidable biological resource impacts, as the area is undeveloped and contains extant populations of rare species. Similar impacts would come from the placement of business/commercial park uses in other North Livermore areas, such as north of I-580 at North Livermore Road. Thus, this alternative does not meet most of the project objectives and is not demonstrated to avoid or reduce significant impacts of the Project.*

goals of the City of Livermore General Plan would not be fulfilled, which could affect jobs/housing balances and overall municipal buildout.

- **Mineral Resources**—As no new land uses would be introduced and no new roads would be built, there would be no impacts on existing mineral resources.
- **Noise**—No new sources of noise would be introduced.
- **Population and Housing**—No increase in population or housing would occur.
- **Public Services and Utilities**—No increase in public services demands would occur, and there would be no need to expand infrastructure to serve the site.
- **Recreation**—No new demands for recreational facilities would occur and no new recreational facilities would be built.
- **Transportation and Traffic**—No new traffic would be introduced.
- **Growth Inducement**—No growth relative to development of the site would occur.

Alternative 3—Flood Control Desilting Alternative

Alternative Characteristics

This alternative would desilt the Arroyo Las Positas reach from Kitty Hawk Road/Isabel Avenue to Airway Boulevard and through the Las Positas Golf Course to restore the creek to its original capacity. The Arroyo Las Positas from Isabel Avenue to Airway Boulevard has silted in over the past 10 years, decreasing its original 100-year capacity by one-half. The reach of the creek through the golf course that once conveyed one-half of the 100-year storm currently has a capacity that is much less than half of that required to convey the 100-year storm due to the growth of trees and other natural foliage within the creek. Approximately 112,000 cubic yards of silt needs to be removed to desilt the entire length of this creek. In addition, 42,000 cubic yards of this total would be required to desilt the creek throughout the golf course. This work is consistent with the project identified in Zone 7's SMMP to widen the Arroyo Las Positas to convey the 100-year storm within the creek; however, this smaller scale project does not achieve the capacity needed to convey the 100-year floodflow. A separate project would be required to either contour the golf course to contain the 100 year flows or install a bypass channel or culvert for the high flows.

This alternative would obviate the need for the detention basin and the north overbank channel, but mass fill on the southern parcel of the Children's Hospital site would be required still. The rest of the Specific Plan and project development would be the same as the proposed Project.

Impact Analysis

- **Aesthetics and Visual Resources**—This alternative would not change site aesthetics relative to the proposed Project except that riparian vegetation along the Arroyo Las Positas would be removed due to desilting activity, which would result in a short- to medium-term aesthetic impact that would reduce over time as vegetation recovered.
- **Agricultural Resources—**This alternative would have the same impacts as the proposed Project on agriculture.
- **Air Quality—**Emissions would be similar to those of the proposed Project.
- **Biological Resources—**This alternative would have substantially larger impacts than the proposed Project to riparian habitat, including suitable aquatic habitat for the CRLF and other species. In the temporary to short-term, desilting the Arroyo Las Positas would be a significant and unavoidable impact that may imperil the viability of CRLF throughout this project reach, because the project reach provides the best habitat for the frog south of I-580 in the vicinity. However, this alternative would avoid potential upland habitat impacts because it would not require construction of a detention basin and north overbank channel in upland habitat areas.
- **Cultural Resources—**This alternative would require more excavation in and along the Arroyo Las Positas itself but less excavation in the adjacent uplands. Because the entire creek margin is sensitive for cultural resources, the impacts of this alternative are likely similar to the proposed Project.
- **Geology, Soils, and Paleontology**—This alternative would have a greater potential for sedimentation in the Arroyo Las Positas due to more extensive in-channel excavation but would otherwise be similar to the proposed Project.
- **Hazards and Hazardous Materials—**This alternative would have similar impacts related to hazards and hazardous materials as the proposed Project, with a slightly higher risk of accidental release to the Arroyo Las Positas due to more extensive in-channel work.
- **Hydrology and Water Quality**—This alternative would remove areas for commercial development from the 100-year floodplain similar to the proposed Project. Development impacts to water quality would be the same as with the proposed Project. Construction water quality effects would be larger than with the proposed Project as a result of more extensive in-channel work. This alternative would better facilitate future regional flood control improvements if they occur in the short term by excavating part of the needed capacity for the future widening of the Arroyo Las Positas.
- **Land Use and Planning**—This alternative would have the same land use impacts as the proposed Project, except that temporary golf course disruption would be more extensive.
- **Mineral Resources**—This alternative would have the same mineral resource impacts as the proposed Project.

- **Noise**—This alternative would have the same noise impacts as the proposed Project would but somewhat larger noise impacts on the golf course during desilting activity.
- **Population and Housing—**This alternative would have the same effects on population and housing as the proposed Project would.
- **Public Services and Utilities—**This alternative would have the same effects on public services as the proposed Project would.
- **Recreation**—This alternative would have similar effects on recreation as the proposed Project but would have substantially more disruption to golfing during desilting.
- **Transportation and Traffic**—This alternative would have the same effects on traffic as the proposed Project would.
- **Growth Inducement—**This alternative would have the same effects on growth as the proposed Project would.

Alternative 4—Flood Control Flow-Through Alternative

Alternative Characteristics

This alternative allows the water spilling over the north bank of the Arroyo Las Positas under existing conditions to continue to do so to the north. This flow would be conveyed around the commercial buildings on the private parcels to the north and allowed to continue under El Charro Road across the private property to the west, over the freeway, and back into the Arroyo Mocho downstream in Pleasanton. This alternative would not increase flows downstream but would maintain the status quo flows. This alternative would not require a detention basin.

Impact Analysis

- **Aesthetics and Visual Resources**—This alternative would not change site aesthetics relative to the proposed Project.
- **Agricultural Resources—**This alternative would have the same effects as the proposed Project on agriculture.
- **Air Quality—**Emissions would be similar to those of the proposed Project.
- **Biological Resources—**This alternative would have somewhat smaller impacts on biological resources, as no detention basin would need to be built on the south side of the Arroyo Las Positas in upland habitat.
- **Cultural Resources—**This alternative would require less excavation in and along the Arroyo Las Positas itself than the proposed Project because it would not require a detention basin.

- **Geology, Soils, and Paleontology**—This alternative would have a smaller potential for sedimentation in the Arroyo Las Positas, due to less excavation along the creek, but would otherwise have similar impacts to the proposed Project.
- **Hazards and Hazardous Materials**—This alternative would have similar impacts related to hazards and hazardous materials as the proposed Project would.
- **Hydrology and Water Quality**—This alternative would remove areas for commercial development from the 100-year floodplain similar to the proposed Project but would continue to allow overbank flows to pass to the Staples Ranch site and cross I-580, which would be an inferior flood control outcome to that of the proposed Project. Development impacts to water quality would be the same as with the proposed Project. Construction water quality effects would be less than with the proposed Project due to less excavation directly adjacent to the Arroyo Las Positas. This alternative would accommodate future regional flood control improvements similar to the Proposed Project.
- **Land Use and Planning**—This alternative would have the same land use impacts as the proposed Project would.
- **Mineral Resources**—This alternative would have the same mineral resource impacts as the proposed Project would.
- **Noise**—This alternative would have the same noise impacts as the proposed Project would.
- **Population and Housing—**This alternative would have the same effects on population and housing as the proposed Project would.
- **Public Services and Utilities**—This alternative would have the same effects on public services as the proposed Project would.
- **Recreation**—This alternative would have the same effects on recreation as the proposed Project would.
- **Transportation and Traffic—**This alternative would have similar effects on traffic as the proposed Project would, outside of substantial flood events. During flood events, this alternative, depending on what kind of flood control improvements are effects as part of the Staples Ranch development, could continue to allow flooding across I-580 west of the El Charro Road interchange. The proposed Project would prevent/reduce flooding from crossing I-580 in the 100-year event.
- **Growth Inducement—**This alternative would have the same effects on growth as the proposed Project would.

Alternative 5—Airway Boulevard Extension, Middle Alignment Alternative

Alternative Characteristics

This alternative would include an Airway Boulevard Extension along an alignment that continues due westward from the golf course entrance road. This alternative would require a relocation of the existing clubhouse and a redesign of the golf course. This alternative would include one crossing of the Arroyo Las Positas but no crossing of Cottonwood Creek.

This is an alternative to the Airway Boulevard Extension option or the Jack London Boulevard Extension option.

Impact Analysis

- **Aesthetics and Visual Resources**—This alternative would not substantially change site aesthetics relative to the proposed Project except that in the Airway Boulevard Extension option, there would be no additional roadway along I-580, which would be an improvement in views along the corridor.
- **Agricultural Resources—**This alternative would have the same effects as the proposed Project on agriculture.
- **Air Quality**—Emissions would be similar to those of the proposed Project.
- **Biological Resources**—This alternative would have somewhat smaller effects on riparian resources than the Airway Boulevard Extension option, due to there being no need to potentially realign or cross Cottonwood Creek.
- **Cultural Resources**—This alternative would have similar effects on cultural resources as the proposed Project would.
- **Geology, Soils, and Paleontology**—This alternative would have similar effects on geology, soils, and paleontology but slightly smaller potential for creek sedimentation due to reduced creek crossings or realignment.
- **Hazards and Hazardous Materials**—This alternative would have similar impacts related to hazards and hazardous materials as the proposed Project would.
- **Hydrology and Water Quality**—This alternative would have similar but slightly smaller potential for creek sedimentation than the Airway Boulevard Extension option due to reduced creek crossings or realignment.
- **Land Use and Planning**—This alternative would have the same land use impacts as the proposed Project, except that golf course disruption would be far more extensive than with the proposed Project.
- **Mineral Resources**—This alternative would have lesser mineral resource impacts than the proposed Project because there would be no encroachment on private quarry land south of the Arroyo Las Positas.

- **Noise**—This alternative would have the same noise impacts as the proposed Project but somewhat larger noise impacts on the golf course during road construction and golf course redesign.
- **Population and Housing—**This alternative would have the same effects on population and housing as the proposed Project would.
- **Public Services and Utilities**—This alternative would have the same effects on public services as the proposed Project would.
- **Recreation**—This alternative would have a substantially larger impact on golfing both during road construction and during golf course redesign than the proposed Project would.
- **Transportation and Traffic**—This alternative would have the same effects on traffic as the proposed Project would.
- **Growth Inducement—**This alternative would have the same effects on growth as the proposed Project would.

Alternative 6—Children's Hospital Site Alternative 1

Alternative Characteristics

This alternative would consist of realigning Cottonwood Creek where it exits the existing culvert under I-580 to run along the eastern side of the east parcel on the Children's Hospital site. The purpose of this realignment would be to provide a more contiguous area for development of the property.

Impact Analysis

- **Aesthetics and Visual Resources**—This alternative would change site aesthetics relative to the proposed Project in that it would remove vegetation along Cottonwood Creek and would have the potential for a more continuous amount of development along the Children's Hospital frontage. The removal of creek vegetation would be a significant aesthetic impact. The expanded frontage might make it possible to provide for more variable architectural treatments for BCP use or the alternative church use without the need to encroach on the visual corridor view angle (or with less need to encroach). Overall, due to removal of the creek vegetation and the length of time for the new channel to be vegetated, this alternative likely would have greater aesthetic impacts than the proposed Project even if the view angle impacts were reduced.
- **Agricultural Resources—**This alternative would have the same effects on agriculture as the proposed Project would.
- **Air Quality**—Emissions would be similar to those of the proposed Project.
- **Biological Resources**—This alternative would have larger impacts than the proposed Project to riparian habitat, including suitable aquatic habitat for the

CRLF and other species. In the temporary to short term, realigning Cottonwood Creek would be a significant impact that may affect CRLF breeding and migration and the potential for CTS to migrate from north of I-580 to the project site.

- **Cultural Resources**—This alternative would require more excavation in and along the Arroyo Las Positas itself but less excavation in the adjacent uplands. Since the entire creek margin is sensitive for cultural resources, the impacts of this alternative are likely similar to those of the proposed Project.
- **Geology, Soils, and Paleontology**—This alternative would have a greater potential for sedimentation in the Arroyo Las Positas due to more extensive in-channel excavation, but it would be similar to the proposed Project otherwise.
- **Hazards and Hazardous Materials**—This alternative would have similar impacts related to hazards and hazardous materials as the proposed Project, with a slightly higher risk of accidental release to the Arroyo Las Positas due to more extensive in-channel work.
- **Hydrology and Water Quality**—This alternative would remove areas for commercial development from the 100-year floodplain similar to the proposed Project. Development impacts on water quality would be the same as with the proposed Project. Construction water quality effects would be larger than with the proposed Project, due to more extensive in-channel work. This alternative would better facilitate future regional flood control improvements if they occur in the short term, by excavating part of the needed capacity for the future widening of the Arroyo Las Positas.
- **Land Use and Planning**—This alternative would have the same land use impacts as the proposed Project would, except that golf course disruption would be more extensive.
- **Mineral Resources**—This alternative would have the same mineral resource impacts as the proposed Project would.
- **Noise**—This alternative would have the same noise impacts as the proposed Project would but somewhat larger noise impacts on the golf course during desilting activity.
- **Population and Housing—**This alternative would have the same effects on population and housing as the proposed Project would.
- **Public Services and Utilities**—This alternative would have the same effects on public services as the proposed Project would.
- **Recreation**—This alternative would have the same effects on recreation as the proposed Project would.
- **Transportation and Traffic**—This alternative would have the same effects on traffic as the proposed Project would.
- **Growth Inducement—**This alternative would have the same effects on growth as the proposed Project would.

Alternative 7—Children's Hospital Site Alternative 2

Alternative Characteristics

This alternative would exclude any development on the southern parcel of the Children's Hospital site. Total buildout of the Specific Plan would be slightly smaller than the proposed Project but not to an extent that infrastructure costs would likely make this alternative economically infeasible.

Impact Analysis

- **Aesthetics and Visual Resources**—This alternative would reduce development directly adjacent to the golf course and require two fewer creek bridges, which would enhance views from the golf course and potentially from I-580.
- **Agricultural Resources—**This alternative would leave open the possibility of continuing the agricultural use of the southern parcel at present.
- **Air Quality**—Emissions would be similar to those of the proposed Project but slightly lower due to a smaller level of traffic.
- **Biological Resources**—This alternative would have fewer biological impacts, as it would require fewer creek bridges and would propose less development directly adjacent to the creeks. This alternative would leave open the possibility of using the southern parcel as mitigation for the overall project and the possibility of using it for a redesigned golf course area instead of potentially more biologically sensitive areas south of the Arroyo Las Positas.
- **Cultural Resources**—This alternative would require less excavation in and along the Arroyo Las Positas itself, which would reduce the potential for effects on unknown (as of now) cultural resources that might be present.
- **Geology, Soils, and Paleontology**—This alternative would have a smaller potential for sedimentation in the Arroyo Las Positas due to less construction and no need for mass fill on the southern parcel, but it would be similar to the proposed Project otherwise.
- **Hazards and Hazardous Materials**—This alternative would have similar impacts related to hazards and hazardous materials as the proposed Project would, with a slightly lower risk of accidental release to the Arroyo Las Positas due to less extensive construction adjacent to the creek.
- **Hydrology and Water Quality**—This alternative would eliminate the need for mass fill on the southern parcel. Development impacts on water quality would be the same as with the proposed Project but slightly less due to less development. This alternative would leave open the possibility of utilizing the southern parcel for future flood control improvements or a sediment basin.

- **Land Use and Planning**—This alternative would have the same land use impacts as the proposed Project would.
- **Mineral Resources**—This alternative would have the same mineral resource impacts as the proposed Project would.
- **Noise**—This alternative would have the same noise impacts as the proposed Project would but somewhat lesser noise impacts on the golf course.
- **Population and Housing—**This alternative would have similar but slightly lower effects on population and housing than the proposed Project would.
- **Public Services and Utilities**—This alternative would have similar, but slightly lower, effects on public services than the proposed Project would.
- **Recreation**—This alternative would have similar effects on recreation as the proposed Project but would leave open the possibility of use of the southern parcel as part of the golf course redesign, which may reduce the impacts of the redesign overall given its location.
- **Transportation and Traffic**—This alternative would have similar but lesser effects on traffic as the proposed Project due to a reduced amount of buildout.
- **Growth Inducement—**This alternative would have similar but lesser effects on growth than the proposed Project would.

Alternative 8—Visual Corridor Compliant Specific Plan

Alternative Characteristics

This alternative would not include General Plan Amendments for the Prime Outlets Livermore Valley project or the alternative church use on the northwest parcel of the Children's Hospital property.

By not allowing for any buildings to exceed the established visual corridor view angles, it is probable that buildings on the Prime Outlets site and the Children's Hospital site would need to spread out more laterally on the properties in order to achieve project proponents' individual project goals.

Impact Analysis

- **Aesthetics and Visual Resources**—This alternative would change site aesthetics relative to the proposed Project. The distant hills south of Livermore and Pleasanton would be more apparent to viewers from I-580 than with the proposed Project. However, the immediate foreground view of lower, more laterally spread out buildings might be more continuous and of less diversity due to the inability to provide for roofline variations and flourishes. While the proposed Project would allow some encroachment on the long-range views of the hills in order to facilitate specific building concepts, this alternative would limit certain architectural concepts in order

to preserve long-term views. On balance, this alternative is not considered aesthetically superior to the proposed Project, as it clearly improves one aspect of views (long-range views) but at the expense of likely degrading another aspect (foreground views of buildings), such that no clear net benefit is identified.

- **Agricultural Resources—**This alternative would have the same impacts on agriculture as the proposed Project.
- **Air Quality**—Emissions would be similar to those of the proposed Project.
- **Biological Resources**—This alternative would have the same impacts as the proposed Project would.
- **Cultural Resources**—This alternative would have the same impacts as the proposed Project would.
- **Geology, Soils, and Paleontology**—This alternative would have the same impacts as the proposed Project would.
- **Hazards and Hazardous Materials**—This alternative would have the same impacts as the proposed Project would.
- **Hydrology and Water Quality**—This alternative would have the similar impacts as the proposed Project would. Due to building height limitations, it is possible that building site coverage might increase compared with the proposed Project and increase impermeable surfaces; however, this increased impact likely can be mitigated through similar means as with the proposed Project.
- **Land Use and Planning**—This alternative would have the same land use impacts as the proposed Project would.
- **Mineral Resources**—This alternative would have the same mineral resource impacts as the proposed Project would.
- **Noise**—This alternative would have the same noise impacts as the proposed Project would.
- **Population and Housing—**This alternative would have the same effects on population and housing as the proposed Project would.
- **Public Services and Utilities**—This alternative would have the same effects on public services as the proposed Project would.
- **Recreation**—This alternative would have the same effects on recreation as the proposed Project would.
- **Transportation and Traffic**—This alternative would have the same effects on traffic as the proposed Project would.
- **Growth Inducement—**This alternative would have the same effects on growth as the proposed Project would.

Environmentally Superior Alternative

The No-Project Alternative would be the environmentally superior alternative compared with the proposed Project and with the feasible alternatives analyzed above because it would avoid the physical environmental effects of development.

CEQA requires the identification of another alternative as the environmentally superior alternative in the event that the No-Project Alternative is first identified as such.

Alternative 7 is considered the environmentally superior project alternative because it clearly would reduce several significant impacts of the proposed Project, in particular the need to place mass fill to raise development out of the floodplain and the need for two additional bridges over the Arroyo Las Positas, among other impacts. This alternative would leave open future options for various land uses of the southern parcel on the Children's Hospital site, such as flood control, biological mitigation, agriculture, and golf course, all of which are considered more environmentally benign than additional BCP use on the property. However, Alternative 7 would have financial ramifications on the ability to fully fund infrastructure development using assessments of Specific Plan Area property owners and might require external public financing of needed infrastructure.

Alternatives Considered but Dismissed from Further Analysis

The following alternatives were considered but ultimately were dismissed from further analysis because they did not meet most of the project objectives, were determined to be infeasible, or did not avoid or substantially reduce one or more significant impacts of the proposed Project.

Alternative A—Flood Control Diversion to Lake H Alternative

This alternative would divert the flows naturally ponding south of the Arroyo Las Positas to Lake H, to Cope Lake, and then into the Arroyo Mocho following a flood event. This alternative would involve installing pipes along land south of the Arroyo Las Positas to Lake H and two pump stations to pump the water from Lake H to Cope Lake, and from Cope Lake back into the Arroyo Mocho. To implement this alternative, an easement across quarry land would need to be acquired for the drainage pipes to Lake H, and Lake H would have to be reclaimed and conveyed early to Zone 7 from the quarry owners for their use as a water retention basin.

Additionally, a north overbank grading and channel would be required to capture floodflows and redirect them into the creek. North overbank flows would be captured in a low-profile channel running through the park/open space and quality basin. This north overbank channel component redirects the floodflows alongside the creek back into the creek through four new 120-foot-long, 5-foot-by-4-foot culverts within the improved creek section downstream. This channel, approximately 2,700 feet long, located outside of the 100-foot buffer, would require the excavation of approximately 11,500 cubic yards of soil. Flows unable to flow through the new culverts would be conveyed through a new underdrain system draining the remaining floodflows and year-round low flows. This alternative would not require a detention basin.

This alternative was dismissed from further analysis in the draft EIR because it would require extensive take of private land through a significant mineral resource area and Lake H is not available today. Thus, this alternative is not considered feasible.

Alternative B—Jack London Boulevard Extension, Northern Four-Lane Alignment Alternative

This alternative would place the ultimate four-lane Jack London facility along the same alignment as the interim two-lane alignment in order to avoid the substantial encroachment on private land and the potential for disruption for future quarry activity on SMP-38 and SMP-39. This would be an alternative to the Jack London Boulevard Extension option.

This alternative was dismissed from further analysis in the draft EIR because it either would require extensive above-ground construction in the FAA-designated runway protection zone (which the FAA will not permit) or would require an extensive underground tunnel in an area of shallow groundwater, which is considered logistically and economically suspect, and would create unnecessary traffic safety concerns. Though this alternative would nearly eliminate the need for private land for the Jack London Boulevard Extension, it is not considered feasible.

Alternative C—Limited Commercial Development Alternative

This alternative would be similar to the proposed Project except that the ultimate commercial development buildout would be capped at a total of 750,000 square feet of floor space, compared with the 1.5 million-square-foot potential for the proposed Project. This alternative would reduce the amount of traffic, air emissions, and noise compared with the proposed Project.

This alternative was dismissed from further analysis in draft EIR because it would not generate sufficient funding for the infrastructure necessary to serve the

Specific Plan Area as a whole. The infrastructure needs for the Specific Plan are not linear in that the level of infrastructure development would be similar for a 750,000 square-foot development as that needed for a 1.5 million-square-foot development because of the need to extend roads, water lines, sewer lines, and other infrastructure to the undeveloped site. Thus, this alternative is considered economically infeasible.

Alternative D—Children's Hospital Site Alternative 3

This alternative would involve the use of City-owned properties in the Specific Plan Area north of the Arroyo Las Positas not necessary for the water quality basin and the north overbank channel, for commercial uses instead of open space/overflow parking. By using the City-owned properties, there would be a potential to achieve a similar level of commercial development without the use of the eastern or southern parcels on the Children's Hospital site. This would reduce the need for new bridges over Cottonwood Creek and the Arroyo Las Positas and the need for mass fill on the southern parcel to raise potential development above the 100-year water surface elevation.

This alternative was dismissed from further analysis in the draft EIR because it would require the use of land purchased by the City using FAA-derived funding that constrains the commercial use of such land. The FAA requirements specify that the land use may be used for commercial uses that are related to airport use. This is not considered probable because the land is separated from the airport by sufficient distance that it reduces the potential feasibility of any such use. In addition, such commercial uses are not likely to be as intensive as BCP uses on other nonconstrained land in the Specific Plan Area (such as the Children's Hospital site), which also would result in economic infeasibility issues due to the cost of infrastructure.

Alternative E—Dedicated El Charro Truck Lanes Alternative

This alternative would provide for segregation of West Jack London Boulevard traffic from quarry traffic through the use of a flyover or underpass structure at the intersection of El Charro Road and West Jack London Boulevard in order to segregate quarry traffic from traffic using West Jack London Boulevard.

Flyover Variant—The flyover concept would include six lanes with three in each direction. Southbound trucks heading to the quarries would use the far left through lane to enter an at-grade access road to the quarries, while eastbound traffic to Jack London Boulevard would use two right lanes that would then fly over two center lanes and descend to West Jack London Boulevard. Northbound trucks would use the northbound far-left at-grade lane to go under the flyover unimpeded, while westbound Jack London Boulevard traffic would use the outer two right lanes heading northward on El Charro Road.

This variant would require traffic sorting to occur in the area between I-580 offramps and onramps and fly over near Jack London Boulevard in order to access correct lanes. The safety of southbound drivers on El Charro Road intending to go east of Jack London Boulevard is a concern with this design, because their view of the flyover ahead may be blocked by trucks in front of them, and they may follow trucks into the quarry entrance. A last-second correction by these motorists may cause them to run into other vehicles or the median between the through at-grade lane and the flyover. The safety of northbound traffic is also a concern as quarry traffic headed eastbound on I-580 would be required to merge across at least one lane of vehicle traffic and possibly two to access the onramp.

Underpass Alternative—The underpass concept also would include six lanes, with three in each direction. Southbound trucks heading to the quarries would use a far-right at-grade through lane to access the quarries, while eastbound traffic to Jack London Boulevard would use two southbound left lanes that would then enter a four-lane underpass (two lanes in each direction) under the northbound through lane from the quarries and then ascend to West Jack London Boulevard. Northbound trucks would use a northbound far-right at-grade lane to go over the underpass unimpeded, while westbound Jack London Boulevard traffic would use two inner left lanes that would pass under the northbound truck lane and then curve left and head northward on El Charro Road.

This variant also would require traffic sorting to occur in the area between I-580 offramps and onramps and the underpass at Jack London Boulevard in order to access correct lanes but would place most of the movement responsibility on passenger vehicles and other traffic using Jack London Boulevard. The safety of southbound through drivers on El Charro Road is also a concern with this design, because their view of the underpass ahead may be blocked by trucks in front of them, and they may follow trucks into the quarry entrance. A last-second correction by these motorists also may cause them to run into other vehicles or the median between the through at-grade lane and the underpass. The safety of northbound traffic is also a concern, as quarry traffic headed westbound on I-580 would be required to merge across at least one lane of vehicle traffic and possibly two to access the I-580 overpass.

Though these alternatives would segregate commercial and quarry traffic along El Charro Road at the Jack London Boulevard intersection, they also would introduce unsafe weaving and merging areas that would increase the potential for accidents. By comparison to the proposed Project, such an alternative is not considered an improvement in traffic safety along El Charro Road. The proposed Project, with the recommended mitigation, would effectively segregate northbound traffic on El Charro Road via a traffic light and would allow for southbound segregation, without the line-of-sight problems inherent with a flyover or underpass configuration. Thus, this alternative would not reduce a significant impact of the proposed Project and was dismissed from further analysis in the EIR.

Alternative F—Alternative Commercial Development Locations

This alternative would involve the development of 1.5 million square feet of commercial use at an alternate location. The El Charro Specific Plan Area would remain substantively undeveloped and remain in its current agricultural and driving range use. In the immediate project vicinity, there are no sufficiently large areas designated for BCP within the city limits.

The first variant on this alternative would be to place BCP uses on SMP-38 and SMP-39 if these areas were annexed to the City of Livermore and rezoned for commercial use. This area is accessible from El Charro Road and Jack London Boulevard by an extension of Jack London Boulevard similar to that proposed with the proposed Project. However, this alternative would result in a significant and unavoidable impediment to mineral resource extraction.

A second variant on this alternative would be to develop the land at the entrance to Doolan Canyon on the north side of I-580. This area also would need to be annexed to the City of Livermore. This area is accessible from North Canyons Parkway and would be accessible by the northern road proposed to connect Livermore and Dublin north of I-580. This alternative would result in similar and potentially greater biological impacts, as there are intact habitat and populations of CRLF, CTS, and likely other special-status wildlife species along Cottonwood Creek in this vicinity. This alternative also would result in development of the last remaining undeveloped land between North Canyons Parkway and Fallon Village to the east of Fallon Road.

A third variant on this alternative would be to develop BCP uses on the north side of I-580 east or west of North Livermore Avenue. This would require expansion of the UGB, which was rejected by City of Livermore voters last year for a residential development in this area. This also would require annexation by the City and rezoning to commercial use. The areas along North Livermore Avenue north of I-580 contain habitat for many of the same species potentially affected by the proposed Project.

A fourth variant on this alternative would be to increase the allowable floor area ratios on other undeveloped BCP-designated land in other locations in Livermore so as to achieve 1.5 million square feet of commercial space without developing the El Charro Specific Plan Area.

This alternative was dismissed from further analysis in the draft EIR because the various versions of this alternative ultimately would not meet the fundamental objective to develop the Specific Plan Area in accordance with the general plan. The placement of BCP use in other parts of the city or in areas that might be annexed to the City would require a General Plan Amendment or an increase of intensity at other BCP lands beyond that planned for in the general plan. Placement of BCP uses at SMP-38 and SMP-39 would result in significant unavoidable impacts on mineral resources. Placement of BCP uses at Doolan Canyon would require City annexation and would result in significant

unavoidable biological resource impacts likely greater than those of the proposed Project. Similar impacts would come from the placement of BCP uses in other north Livermore areas such as north of I-580 at North Livermore Road. Thus, this alternative would not meet most of the project objectives and is not demonstrated to avoid or reduce significant impacts of the Project.

Chapter 5
References Cited

Printed References

Alameda County Congestion Management Agency. 2006a. *Environmental Assessment/Initial Study: I-580 Eastbound HOV Lane Project.* September. Prepared for the California Department of Transportation and the Federal Highway Administration. Oakland, CA.

———. 2006b. *Level of Service Monitoring on the Congestion Management Program Roadway Network.* July. Available: <http://www.accma.ca.gov/pages/RptLOSMonitoring.aspx>.

Alameda County. 1981. *Specific Plan for Livermore-Amador Valley Quarry Reclamation.*

———. 1982. *Seismic Safety and Safety Elements of the County of Alameda General Plan*. Last revised: unknown. Available: <http://library.ceres.ca.gov/cgi-bin/doc_home?elib_id=934>. Accessed: September 25, 2006.

———. 2002. Alameda County General Plan. Alameda County Community Development Agency. Hayward, CA.

———. 2003. *2001 Housing Element Update*. October. California.

———. 2006. Alameda County General Ordinance Code. Last revised: unknown. Available: <http://www.sanlorenzoexpress.com/ord-toc.htm>. Accessed: September 25, 2006.

Alameda County Airport Land Use Commission. 1986. *Alameda County Airport Land Use Policy Plan*. Adopted July 16, 1986.

Alameda County Fire Department. 2004. *Alameda County's Official Website: Fire Department.* Last revised: 2006. Available: <http://www.co.alameda.ca.us/fire/index.htm>. Accessed: April 13, 2004.

Alameda County Supervisors. 1874. *Official Map of Alameda County.* On file at the California State Library, Sacramento, CA.

Alameda Countywide Clean Water Program. 2003. *Stormwater Quality Management Plan July 2001–June 2008*. February 19.

Ambro, R. D. 1993. *Report of Archaeological Test Excavations at CA-ALA-46 on the Stoneridge Orchards Phase III Project Parcel, Pleasanton, Alameda County, California*. On file at the Northwest Information Center, Sonoma State University, Rohnert Park, CA.

American Association of State Highway and Transportation Officials. 1990. Standard recommended practice for evaluation of transportation-related earthborne vibrations (R8-81). Washington, DC.

———. 2004. *A Policy on Geometric Design of Highways and Streets.* Fifth edition.

American Ornithologists' Union. 1983. *Checklist of North American birds*. 6th edition. Allen Press. Lawrence, KS.

Association of Bay Area Governments. 2001. *The Real Dirt on Liquefaction: A Guide to the Liquefaction Hazard in Future Earthquakes Affecting the San Francisco Bay Area.* February. Oakland, CA.

———. 2003. ABAG Shaking Intensity Maps and Information. Available: <http://www.abag.ca.gov/bayarea/eqmaps/mapsba.html>. Updated: May 9, 2005. Accessed: September 25, 2006.

———. 2005. ABAG Liquefaction Maps and Information. Available: <http://www.abag.ca.gov/bayarea/eqmaps/liquefac/liquefac.html>. Updated: February 3, 2005. Accessed: September 25, 2006.

———. 2006. 1999-2006 Regional Housing Needs Determinations. March 15, 2001. Available: <http://maddy.abag.ca.gov/cgi-bin/rhnd_allocation.pl>. Accessed: November 15, 2006.

Bard, J. C., C. I. Busby, M. R. Fong, R. M. Harmon, M. E. Tanman, D. M. Garaventa, A. M. Banet, S. A. Jarvis, S. J. Rossa, and R. S. Sidhu. 1992. *Archaeological Testing Report, CA-ALA-483: Laguna Oaks Project, Pleasanton, Alameda County, California*. Basin Research Associates. Prepared for DeSilva Group, Pleasanton, CA. On file at the Northwest Information Center, Sonoma State University, Rohnert Park, CA.

Barry, S. J., and H. B. Shaffer. 1994. The status of the California tiger salamander (*Ambystoma californiense*) at Lagunita: a 50-year update. *Journal of Herpetology* 24(2):159–164.

Bay Area Air Quality Management District. 1999. *BAAQMD CEQA Guidelines—Assessing the Air Quality Impacts of Projects and Plans*. Adopted: April 1996. Revised: December 1999. San Francisco, CA: Planning and Research Division.

Beedy, E. C., and W. J. Hamilton, III. 1997. *Tricolored Blackbird Status Update and Management Guidelines*. Sacramento, CA. Prepared for U.S. Fish and Wildlife Service, Migratory Birds and Habitat Programs, and California Department of Fish and Game, Bird and Mammal Conservation Program.

———. 1999. Tricolored blackbird (*Agelaius tricolor*). In A. Poole and F. Gill (eds.), *The birds of North America*. No. 423. Philadelphia, PA: the Academy of Natural Sciences; and Washington, DC: the American Ornithologists' Union.

Benson, P. E. 1989. *CALINE4—A Dispersion Model for Predicting Pollutant Concentrations Near Roadways*. (FHWA/CA/TL-84/15.) Published: November 1984. Revised: June 1989. Sacramento, CA: California Department of Transportation, Division of New Technology and Research.

Bulger, J. B. 1999. "*Terrestrial Activity and Conservation of California Red-legged Frogs (*Rana aurora draytonii*) in Forested Habitats of Santa Cruz County, California*. Santa Cruz, CA: Land Trust of Santa Cruz County.

California Air Resources Board. 2005. *Air Quality and Land Use Handbook—A Community Health Perspective*. April. Sacramento, CA.

———. 2006a. ARB Databases: Aerometric Data Analysis and Management System (ADAM). Last Revised: March 24, 2006. Available: <http://www.arb.ca.gov/html/databases.htm>. Accessed: April 17, 2006.

———. 2006b. *The California Almanac of Emissions and Air Quality: 2006 Edition*. Sacramento, CA: Planning and Technical Support Division.

California Department of Conservation. 2004. FMMP GIS Data. Accessed: December 12, 2006. Available: <ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/2004/>. Sacramento, CA: Farmland Mapping and Monitoring Program, Division of Land Resources Protection.

———. 2006a. *Farmland Mapping and Monitoring Program: Table A-1—Alameda County 2002–2004 Land Use Conversion*. Last revised: August 31, 2006. Available: <http://www.consrv.ca.gov/DLRP/fmmp/pubs/2002-2004/conversion_tables/alacon04.xls>. Accessed: September 24, 2006.

———. 2006b. Alameda County Williamson Act Lands 2006—Land Enrolled in Williamson Act and Farmland Security Zone Contracts as of 01-01-2006. Accessed: November 30, 2006. Last revised: August 2, 2006. Available: <ftp://ftp.consrv.ca.gov/pub/dlrp/WA/Map%20and%20PDF/Alameda/>. Sacramento, CA: Division of Land Resource Protection.

California Department of Finance. 2004. Population Projections by Race/Ethnicity for California and Its Counties 2000–2050. Sacramento, CA. May 2004. Available:

<http://www.dof.ca.gov/HTML/DEMOGRAP/ReportsPapers/Projections/P1/documents/P-1_Tables.xls>. Accessed: September 26, 2006.

———. 2006a. E-1 City/County Population Estimates, 2006. Sacramento, CA. Available: <http://www.dof.ca.gov/HTML/DEMOGRAP/ReportsPapers/Estimates/E1/documents/E-1table.xls>. Accessed: September 26, 2006.

———. 2006b. E-5 City/County Population and Housing Estimates for Cities, Counties and State, 2001–2006. Sacramento, CA. Available: <http://www.dof.ca.gov/HTML/DEMOGRAP/ReportsPapers/Estimates/E5/E5-06/documents/E-5a.xls>. Accessed: September 26, 2006.

California Department of Fish and Game. 1995. *Staff Report on Burrowing Owl Mitigation*. Sacramento, CA.

California Department of Transportation. 2001. *Guide for the Preparation of Traffic Impact Studies*. June. Available: <http://www.bakersfieldcity.us/cityservices/pubwrks/TrafficEng/pdf/caltrans-2001guide-update.pdf>.

———. 2004. Traffic and Vehicle Data Systems Unit. Available: <http://www.dot.ca.gov/hq/traffops/saferesr/trafdata/2004all.htm>. Traffic Operations Division.

———. 2006. *Highway Design Manual*. Updated in 2006. Prepared by the California Department of Transportation's Division of Design for Project Delivery.

California Division of Mines and Geology. 1997. *Guidelines for Evaluating and Mitigating Seismic Hazards in California*. (Special Publication 117.) Sacramento, CA.

California Geological Survey. 2006. Seismic Shaking Hazards in California. Last revised: May 1, 2006. Available: <http://www.consrv.ca.gov/CGS/rghm/pshamap/pshamain.html>. Accessed: September 22, 2006.

California Integrated Waste Management Board. 2004. Solid Waste Information System: Waste Stream Profiles. Available: <http://www.ciwmb.ca.gov/Profiles/Facility/Landfill/LFProfile1.asp?COID=1&FACID=01-AA-0010 >. Accessed: April 23, 2004.

California Native Plant Society. 2001. *Inventory of Rare and Endangered Plants of California*. 6th edition. Rare Plant Scientific Advisory Committee, David P. Tibor (convening Ed.). Sacramento, CA: California Native Plant Society.

California Natural Diversity Database. 2006. Rarefind 3 version 3.0.3 (July 3, 2006 update). Search of 10-mile radius around El Charro Project Area on the

Livermore quadrangle. California Department of Fish and Game: City of Livermore, CA.

Cao, T., W. A. Bryant, B. Rowshandel, D. Branum, and C. J. Wills. 2003. *The Revised 2002 California Probabilistic Seismic Hazard Maps June 2003.* Available: <http://www.consrv.ca.gov/CGS/rghm/psha/fault_parameters/pdf/2002_CA_Hazard_Maps.pdf>.

City of Dublin. 2005. *580/Fallon Road Interchange Improvement Project Initial Study/Mitigated Negative Declaration.* Dublin, CA.

City of Livermore. 1975. Livermore Municipal Airport Master Plan. Livermore, CA.

———. 2000. *Planning and Zoning Code: A Codification of the Planning and Zoning Ordinances of the City of Livermore, California.* Seattle, WA: Code Publishing Company. Last posted or revised: Unknown. Available: <http://www.codepublishing.com/CA/Livermore.html>. Accessed: September 25, 2006.

———. 2004a. General Plan 2003–2025. Adopted February 9, 2004. Livermore, CA.

———. 2004b. City of Livermore Sewer Master Plan. Approved October 11, 2004.

———. 2004c. City of Livermore Water Master Plan. Approved October 11, 2004.

———. 2004d. City of Livermore Recycled Water Master Plan. Approved October 11, 2004.

City of Pleasanton. 1996. *The Pleasanton General Plan: A Guide to Community Resources. Future Trends.and Long Range Plans*. August 6. Available: <http://www.ci.pleasanton.ca.us/pdf/genplan.pdf>.

———. 2006. *Stoneridge Drive Specific Plan Amendment/Staples Ranch Draft EIR—Notice of Preparation*. Available: <http://www.ci.pleasanton.ca.us/business/planning/staplesranch/public/staples-nop-draft-eir.pdf>. Accessed: September 20, 2006.

DKS Associates. 2006. *Assessment of Traffic Safety Impacts—El Charro Road Specific Plan.* November 15. Oakland, CA. Prepared for the City of Livermore.

Douglas Herring & Associates. 2004. *Rhodes & Jamieson Aggregate Mines, Application for Rhodes & Jamieson Aggregate Mines, Surface Mining Permits SMP-38, SMP-39, and SMP-40—Draft Environmental Impact Report*. November.

Dowling Associates, Inc. 2006. Traffic Study—El Charro Specific Plan. California. 2006.

East Bay Regional Park District. 1997. *Master Plan 1997*. Adopted: December 17, 1996. (Resolution No: 1996-12-349.) Available: <http://www.ebparks.org/district/mplan.htm>. Accessed: October 1, 2006. Oakland, CA.

———. 2002. Brushy Peak Regional Preserve Draft Land Use Plan. June 20, 2002.

EDAW|AECOM. 2006. *Draft: City of Livermore El Charro Specific Plan.* Prepared for the City of Livermore. December.

EIP Associates. 2001. *Altamont Water Treatment Plant EIR*. Prepared for Zone 7 of Alameda County Flood Control and Water Conservation District. San Francisco, CA.

Eng, L. L., D. Belk, and C.H. Erickson. 1990. California Anostraca: Distribution, Habitat, and Status. *Journal of Crustacean Biology* 10(2):247–277.

Environmental Data Resources, Inc. 2006. *The EDR Radius Map Report, El Charro, 1780 Freisman Road, Livermore, CA 94588*. (Inquiry No. 1762823.1s.) September 26.

Environmental Laboratory. 1987. *Corps of Engineers Wetlands Delineation Manual*. (Technical Report Y-87-1.) Vicksburg, MS: U.S. Army Waterways Experiment Station.

Eriksen, C.H., and D. Belk. 1999. *Fairy Shrimps of California's Puddles, Pools, and Playas*. Eureka, CA: Mad River Press.

ESA. 2000. *Altamont Landfill Use Permit C-5512 Revised Final EIR*. Prepared for Alameda County. San Francisco, CA.

———. 2004. Zone 7 Water Agency Well Master Plan Environmental Impact Report. Prepared for Zone 7. April.

———. 2006. *Zone 7 Stream Management Master Plan: Draft Environmental Impact Report*. Prepared for: Zone 7 Water Agency.

Federal Emergency Management Agency. 1997. Flood Insurance Rate Map for the City of Livermore, CA, Alameda County. Community-Panel No. 060008 0005 B.

Federal Highway Administration. 1983. *Visual Impact Assessment for Highway Projects.* (Contract DOT-FH-11-9694.) Washington, DC.

Federal Transit Administration. 2006. *Transit Noise and Vibration Impact Assessment.* (DOT-T-95-16.) Office of Planning. Washington, DC. Prepared by Harris Miller Miller & Hanson, Inc., Burlington, MA.

Fong, M. R., S. J. Rossa, J. C. Bard, S. A. Guedon, and S. A. Jarvis. 1991. *Analysis of Native American Skeletal Remains from CA-ALA-46 (The Nielson Farm Site), Stoneridge Place Development, Tract 6164, City of Pleasanton, Alameda County, California*. Prepared for Castle Construction Company. On file at the Northwest Information Center, Sonoma State University, Rohnert Park, CA.

Garza, V. J., P. Graney, and D. Sperling. 1997. *Transportation Project Level Carbon Monoxide Protocol*. December. Davis, CA.

Gunther, A. J., J. Hagar, and P. Salop. 2000. *An Assessment of the Potential for Restoring a Viable Steelhead Trout Population in the Alameda Creek Watershed*. February. Livermore and Richmond, CA. Prepared for the Alameda Creek Fisheries Restoration Workgroup.

Hamilton, W. J., III. 2000. *Tricolored Blackbird 2000 Survey and Population Analysis*. Unpublished report prepared for the U.S. Department of the Interior Fish and Wildlife Service, Portland, OR.

Hamilton, W. J., III, L. Cook, and R. Grey. 1995. *Tricolored Blackbird Project 1994*. Unpublished report prepared for the U.S. Department of the Interior Fish and Wildlife Service, Portland, OR.

Hansen, C. 2003. Assessment of fisheries habitat within Arroyo Las Positas. Unpublished letter to Zone 7 Water Agency. January 3.

Hart, E. W., and W. A. Bryant. 1997. *Fault-Rupture Hazard Zones in California: Alquist-Priolo Earthquake Fault Zoning Act with Index to Earthquake Fault Zone Maps*. (Special Publication 42.) California Division of Mines and Geology. Sacramento, CA.

Haug, E. A., and L. W. Oliphant. 1990. Movements, activity patterns, and habitat use of Burrowing Owls in Saskatchewan. *Journal of Wildlife Management* 54:27–35.

Haviland, P. A. 1907. Official Map of Alameda County. Oakland, CA: Tribune Publishing Company. On file at the California History Room, California State Library, Sacramento, CA.

———. 1917. Official Map of Alameda County. Oakland, CA: Tribune Publishing Company. On file at the California History Room, California State Library, Sacramento, CA.

Helley, E. J., and R. W. Graymer. 2005. Quaternary Geology of Alameda County, and Parts of Contra Costa, Santa Clara, San Mateo, San Francisco, and San Joaquin Counties, California: a Digital Database. (Open-file Report

97-97). Last revised: October 21, 2005. Available: <http://wrgis.wr.usgs.gov/open-file/of97-97/>. Accessed: October 18, 2006.

Helm, B. P. 1998. Biogeography of Eight Large Branchiopods Endemic to California. In *Ecology, Conservation and Management of Vernal Pool Ecosystems*—Proceedings from a 1996 Conference. Sacramento, CA: California Native Plant Society.

Hoover, M. B., H. E. Rensch, E. G. Rensch, and W. N. Abeloe. 1990. *Historic Spots in California*. 4th edition. Revised by D. E. Kyle. Stanford, CA: Stanford University Press.

International Code Council. 1997. *Uniform Building Code*. Albany, NY: Delmar Publishers. International Conference of Building Officials. 1994. Uniform Building Code. January. California.

———. 1997. Maps of Known Active Fault Near-Source Zones in California and Adjacent Portions of Nevada: To Be Used With 1997 Uniform Building Code. Whittier, CA.

Jefferson, G. T. 1991a. *A Catalogue of Late Quaternary Vertebrates from California: Part One, Nonmarine Lower Vertebrate and Avian Taxa.* Technical Reports, No. 5. Los Angeles, CA: Natural History Museum of Los Angeles County.

———. 1991b. *A Catalogue of Late Quaternary Vertebrates from California: Part Two, Mammals.* Technical Reports, No. 7. Los Angeles, CA: Natural History Museum of Los Angeles County.

Jennings, C. W. 1994. Fault Activity Map of California and Adjacent Areas. *California Geologic Data Map Series*. Sacramento, CA: California Division of Mines and Geology.

Jennings, M. R., and M. P. Hayes. 1994. *Amphibian and Reptile Species of Special Concern in California*. Final report. Rancho Cordova, CA: California Department of Fish and Game, Inland Fisheries Division.

Jennings, M. R., M. P. Hayes, and D.C. Holland. 1992. A petition to the U.S. Fish and Wildlife Service to place the California red-legged frog (*Rana aurora draytonii*) and the western pond turtle (*Emys marmorata*) on the list of endangered and threatened wildlife and plants.

Johansson, J. 2000. *Soil Improvement: Techniques*. Last revised: January 27, 2000. Available: <http://www.ce.washington.edu/~liquefaction/html/how/soilimprovement.html>. Accessed: October 2, 2006. Department of Civil Engineering, University of Washington.

Jones, G. R., J. Jones, B. A. Gray, B. Parker, J. C. Coe, J. B. Burnham, and N. M. Geitner. 1975. A method for the quantification of aesthetic values for environmental decision making. Nuclear Technology 25(4):682–713.

Jones & Stokes. 2004. *Altamont Pipeline Project Draft EIR.* September. (J&S 02-566.) Prepared for the Zone 7 Water Agency. Oakland, CA.

———. 2006a. *Annual Report of the Groundwater Management Plan*. September. (J&S 06717.06.) Sacramento, CA. Prepared for: Zone 7 Water Agency..

———. 2006b. *Cultural Resources Inventory and Evaluation Report for the El Charro Specific Plan, Alameda County, California*. July. (J&S 06137.06.) Sacramento, CA. Prepared for the City of Livermore, Livermore, CA.

———. 2006c. *Livermore to Pleasanton Arroyo Trail Connection Initial Study/Mitigated Negative Declaration*. Oakland, CA. Prepared for the City of Livermore.

Karalus, K. E., and A. W. Eckert. 1987. *The Owls of North America*. New York: Weathervane Books.

King, J. L. 1996. *The Evolution of Diversity in Ephemeral Pool Crustaceans: From Genes to Communities*. Davis, CA: UC Davis.

Lane, B., and P. Lane. 1988. *The Amador-Livermore Valley: A Pictorial History.* Norfolk, VA: The Donning Company Publishers.

Lee, D. J. 1982. *The Livermore Municipal Airport Story*. Prepared by the City of Livermore Public Works Department. On file at the Livermore Public Library, Livermore, CA.

Leidy, Rob. 1984. Distribution and Ecology of Stream Fishes in the San Francisco Bay Drainage.

Levy, R. 1978. Costanoan. Pages 485–495 in R. F. Heizer (ed.), *Handbook of North American Indians.* Volume 8. *California*. Smithsonian Institution. Washington, D.C.

Livermore Amador Valley Transit Authority. 2003. *Draft Short-Range Transit Plan FY2004-2013*. September 13.

Livermore Herald. 1921. *W. J. Freisman to Start Dairy Route*. Livermore, CA: Livermore Herald. Page 8. April 30.

———. 1932. Freisman Bros. Starting Dairy. Livermore, CA: Livermore Herald. Page 1. October 28.

———. 1935. Freisman Bros. Buy Eyherabide Dairy. Livermore, CA: Livermore Herald. Page 1. September 27.

Livermore Heritage Guild. 2000. Livermore Amador Valley Land Grants. Available: <www.lhg.org/history%20folder/1landgrants.htm>. Accessed: May 27, 2006.

Loredo, I., D. Van Vuren, and M. L. Morrison. 1996. Habitat Use and Migration Behavior of the California Tiger Salamander. *Journal of Herpetology* 30(2):282–285.

LSA Associates, Inc. 1993. *Biological Survey, Arroyo Las Positas—Arroyo Mocho Widening and Realignment*. Prepared for Alameda County Planning Department, Hayward, CA.

———. 1997. Results of Reconnaissance-level Biological Survey, Friesman [sic] Road Property, Livermore. Letter from Malcolm J. Sproul, Principal, LSA Associates, to Mike Maples, Crosswinds Church, Dublin, CA.

———. 2002. Results of Reconnaissance-level Biological Survey, Crosswinds Church Property, Livermore. September 24. Letter from Malcolm J. Sproul, Principal, LSA Associates, to Dave Nielsen, Crosswinds Church, Dublin, CA.

———. 2003. *Livermore Draft General Plan and Downtown Specific Plan Environmental Impact Report; Volume I: Master Environmental Assessment and Volume II: Impacts and Mitigation Measures.* Berkeley, CA.

Macmillan, Lucy. 2000. *California Red-Legged Frog Site Assessment, Arroyo Mocho Widening/Arroyo Las Positas Realignment Project Alameda, California.* (Corps File No. 2-0564E75.) November. Prepared for Stuart Cook, Alameda County Planning Department.

McCann, W. E., and E. J. Hinkel. 1937. *History of Rural Alameda County*. Volume 1 and 2. Oakland, CA: Works Progress Administration.

Milliken, R. 1994. *A Time of Little Choice: The Disintegration of the Tribal Culture in the San Francisco Bay Area, 1769–1810*. Novato, CA: Ballena Press Anthropological Papers No. 43; Thomas C. Blackburn, series ed.

Natural Resources Conservation Service. 2006. *Soil Survey of Alameda Area, California.* Available: <http://websoilsurvey.nrcs.usda.gov>. Accessed: September 27, 2006.

Nussbaumer, G. L., and W. F. Boardman. 1889. *Official Map of Alameda County*. Oakland, CA: Tribune Publishing Company. On file at the California History Room, California State Library, Sacramento, CA.

———. 1900. Official Map of Alameda County. Oakland, CA: Tribune Publishing Company. On file at the California History Room, California State Library, Sacramento, CA.

Pacific Municipal Consultants. 2002. Draft Environmental Impact Report for the Oaks Business Park. Prepared for the City of Livermore, Department of Community Development, Livermore, CA.

Page, B. M. 1966. Geology of the Coast Ranges of California. In: Bailey, E. G. (ed.), *Geology of Northern California*. Pages 255–276. California Division of Mines and Geology Bulletin 190. San Francisco, CA.

Preston, R. 1999. Preliminary Report on the Conservation Status of Congdon's Spikeweed (*Hemizonia parryi* ssp. *congdonii*) in the South and East San Francisco Bay Area and Monterey County, California. February 23. Prepared for U.S. Fish and Wildlife Service, Ventura, CA.

Rogers, D. C. 2001. Revision of the Neararctic *Lepidurus* (Crustacea; Notostraca). *Journal of Crustacean Biology*, 21(4): 991–1006.

San Francisco Bay Regional Water Quality Control Board. 1995. *The Water Quality Control Plan for the San Francisco Bay Basin, Region 2*. June. Oakland, CA.

———. 2004. *2004 Prioritized List of Basin Plan Issues for Investigation*. Available: <http://www.swrcb.ca.gov/rwqcb2/basinplan.htm>. Accessed: November 3, 2006.

Sawyer, T. L. 1999. *Assessment of Contractional Deformation Rates of the Mt. Diablo Fold and Thrust Belt, Eastern San Francisco Bay Region, Northern California, Final Technical Report*. Piedmont Geosciences, Inc. Reno, NV.

Sawyer, T. L. and J. R Unruh. 2004 (in review). Characterization of the Mt. Diablo fold-and-thrust belt, eastern San Francisco Bay Area, California: American Geophysical Union 2004 Fall Meeting, Supplement to EOS, v. xx, no. xx, p. xxx. (Invited).

Schaaf & Wheeler. 2006. *Hydrology and Hydraulics: El Charro Specific Plan Area*. December. Prepared for the City of Livermore.

Smardon, R. C., J. F. Palmer, and J. P. Felleman. 1986. Foundations for visual project analysis. John Wiley & Sons, Inc. New York, NY.

Society of Vertebrate Paleontology Conformable Impact Mitigation Guidelines Committee. 1995. *The Society of Vertebrate Paleontology, Policy And Positions Statements, Conformable Impact Mitigation Guidelines Committee.* Available: <http://www.vertpaleo.org/policy/policy_statement_conformable_Impact.htm>. Accessed: October 9, 2006.

Stebbins, R. C. 1985. *A Field Guide to Western Reptiles and Amphibians.* Boston, MA: Houghton Mifflin Co.

Tokimatsu, K., and H. B. Seed. 1984. *Simplified Procedures for the Evaluation of Settlements in Clean Sands.* (Report No. UCB/BT-84/16.) Berkeley, CA: University of California, Berkeley, Earthquake Engineering Research Center.

Transportation Research Board. 2000. *Highway Capacity Manual*. Washington, DC.

Tribune Publishing Company. 1880. *Official Map of Alameda County*. On file at the California State Library, Sacramento, CA.

University of California Museum of Paleontology. 2006. *UCMP specimen search.* Last revised: 2006. Available:< http://ucmpdb.berkeley.edu/>. Accessed: October 9, 2006.

Unruh, J. R. 2000. Characterization of blind seismic sources in the Mt. Diablo-Livermore region, San Francisco Bay area, California: Final Technical Report submitted to the U.S. Geological Survey National Earthquake Hazards Reduction Program, Award number 99-HQ-GR-0069, 30 p.

U.S. Environmental Protection Agency. 2006. AirData. Last Revised: September 5, 2006. Available: <http://www.epa.gov/air/data/reports.html>. Accessed: April 17, 2006.

U.S. Fish and Wildlife Service. 2003. *Interim Guidance on Site Assessment and Field Surveys for Determining Presence or Negative Finding of California Tiger Salamander—October 2003*.

———. 2005. *Revised Guidance on Site Assessments and Field Surveys for California Red-Legged Frog—August 2005*.

U.S. Forest Service. 1995. *Landscape aesthetics: A handbook for scenery management.* (Agriculture Handbook Number 701).

U.S. Geological Survey. 1961. 7.5-Minute Livermore Topographic Map. On file at the California State Library, Sacramento, CA.

———. 1968. 7.5-Minute Livermore Topographic Map. On file at the California State Library, Sacramento, CA.

———. 2004. *National Water Information System Online Database (NWISweb).* Available: <http://waterdata.usgs.gov/nwis/>. Accessed: March 30, 2004.

U.S. Soil Conservation Service. 1978. *Procedure to Establish Priorities in Landscape Architecture* (Technical Release 65.) Washington, DC: U.S. Government Printing Office.

Wagner, D. L., E. J. Bortugno, and R. D. McJunkin. 1990. *Geologic Map of the San Francisco–San Jose Quadrangle*. Sacramento, CA: California Division of Mines and Geology.

Water Transfer Associates. 1999. Water Supply Planning Study Update. Prepared for Zone 7 Water Agency. Pleasanton, CA. February.

The Weather Channel. 2006. Monthly Averages for Livermore, CA. Last revised: Unspecified. Available: <http://www.weather.com/weather/wxclimatology/monthly/graph/USCA0618?from=search>. Accessed: December 11, 2006.

Welch, L. E, R. C. Huff, R. A. Dierking, T. D. Cook, L. A. Bates, and W. F. Andrews. 1966. *Soil Survey of Alameda Area, California*. Prepared by the Soil Conservation Service in cooperation with the University of California Agricultural Experiment Station. Washington, D.C.

Wentworth, C. M., R. S. Nicholson, H. M. Wright, and K. M. Brown. 2000. Preliminary Maps of Quaternary Deposits and Liquefaction Susceptibility, Nine-County San Francisco Bay Region, California. United States Geological Survey Open-File Report 00-444, Sheet 2 (of 2).

Western Regional Climate Center. 2006. *Historical Climate Information.* Available: <http://www.wrcc.dri.edu/>. Accessed: October 30, 2006.

Whiffen, A. C., and D. R. Leonard. 1971. *A Survey of Traffic-Induced Vibrations*. Transport and Road Research Laboratory (RRL Report LR418). Crowthorne, Berkshire, England.

Wiberg, R. S. 1988. *Santa Rita Village Mortuary Complex (CA-ALA-413): Evidence and Implications of a Meganos Intrusion*. Salinas, CA: Coyote Press Archives of California Prehistory 18.

———. 1995. *Archaeological Excavations and Burial Removal at Sites CA-ALA-483, CA-ALA-483 Extension, and CA-ALA-555, Pleasanton, Alameda County, California.* On file at the Northwest Information Center, Sonoma State University, Rohnert Park, CA.

Wiberg, R. S., R. Dean, and M. P. Holman. 1997. *Archaeological Site Investigations at Site CA-ALA-42, Alameda County, California: Final Report*. Prepared for Standard Pacific of Northern California, Pleasanton, CA. On file at the Northwest Information Center, Sonoma State University, Rohnert Park, CA.

———. 1998. *A Cultural Resources Study for the North Livermore Master Plan/Specific Plan Environmental Impact Report, Alameda County, California*. (Study S-20335.) San Francisco, CA: Holman & Associates Archaeological Consultants. Prepared for Alameda County Planning Department, Oakland, CA. On file at the Northwest Information Center, Sonoma State University, Rohnert Park, CA.

Wilbur Smith Associates and 2M Associates. 2002. City of Livermore Bikeways and Trails Master Plan. Adopted: December 11, 2001. Amended: December 16, 2002. Prepared for the City of Livermore.

Working Group On California Earthquake Probabilities. 1999. *Earthquake Probabilities in the San Francisco Bay Region: 2000–2030—A Summary of Findings*. U.S. Geological Survey Open-File Report 99-517.

———. 2003. *Earthquake Probabilities in the San Francisco Bay Region: 2002–2031*. U.S. Geological Survey Open-File Report 03-214.

WRA Environmental Consultants. 2006. *California Red-Legged Frog Survey Report—Freisman Property, Livermore, Alameda County, CA.* Prepared for The Terrill Company, Walnut Creek, CA. San Rafael, CA.

Zander Associates. 2006. *California Red-Legged Frog and California Tiger Salamander Site Assessment—El Charro Specific Plan*. September. Prepared for the City of Livermore, CA. Novato, CA.

Zeiner, D. C., W. F. Laudenslayer, Jr., K. E. Mayer, and M. White (eds.). 1990. *California's Wildlife*. Volume II, Birds. Sacramento, CA: California Department of Fish and Game, California Statewide Wildlife Habitat Relationships System.

Personal Communications

Drummond, Gary. Member of the Livermore Heritage Guild, City of Livermore. May 25, 2006—Telephone conversation regarding the history of the Freisman Dairy with Kathryn Haley, Jones & Stokes, Sacramento, CA.

Ferrero, Ed. Superintendent, Arroyo Las Positas Golf Course. November 16, 2006—Telephone conversation with Erin Hitchcock, Jones & Stokes, Sacramento, CA.

Fong, Jack. Altamont Pipeline Project EIR Manager. Zone 7 Water Agency. May 3, 2004—email to Jones & Stokes regarding Zone 7's ability to supply water via water contracts from the South Bay Aqueduct.

Lim, Mary. Environmental Services Program Manager, Zone 7 Water Agency. June 21, 2006. Notice of Preparation of a Draft Environmental Impact Report for El Charro Specific Plan Comments.

Schofield, Mike. Property Manager, Freisman Dairy, Livermore, CA. May 24, 2006—Telephone conversation regarding the history of the Freisman Dairy with Kathryn Haley, Jones & Stokes, Sacramento, CA.

Sheets, Cheri. City Engineer, City of Livermore, Livermore, CA. December 19, 2006—In-person conversation regarding Stream Management Master Plan implementation in the Project Area with Rich Walter, Jones & Stokes, Oakland, CA.

Ventura, Fan. Management Analyst, City of Pleasanton Parks/Community Services Department, Pleasanton, CA. October 6, 2006—Telephone conversation with Jessica Hankins, Jones & Stokes, Sacramento, CA.

Zander, Leslie. Biologist. Zander Associates. November 7, 2006—Telephone conversation with Stephanie Myers, Jones & Stokes, Sacramento, CA.

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Chapter 6
List of Preparers

City of Livermore

Marc Roberts, Community Development Director.

Eric Brown, Planning Manager.

Susan Frost, Principal Planner.

Ben Murray, Senior Planner.

Cheri Sheets, City Engineer.

Bob Vinn, Assistant City Engineer.

Pamela Lung, Associate Civil Engineer.

Judith Propp, Assistant City Attorney.

Crystal DeCastro, Assistant Planner.

Debbie Bell, Assistant Planner.

Jones & Stokes

Rich Walter, Project Director.
Contribution: EIR Project Director

Claire Bromund, Senior Project Manager.
Contribution: EIR Project Manager, Technical Writer—EIR

Jessica Hankins, Project Coordinator.
Contribution: EIR Project Coordinator, Technical Writer—EIR

Jennifer Stock, Landscape Architect.
Contribution: Senior Peer Review—Aesthetics

Burke Lucy, Environmental Specialist.
Contribution: Technical Writer—EIR

William Widdowson, Wildlife Biologist.
Contribution: Technical Memo—Results of Wildlife Surveys for El Charro Specific Plan EIR

Joy Nishida, Botanist.
Contribution: Wetland delineation and Technical Writer—EIR

Erin Hitchcock, Botanist.
Contribution: Technical Writer—EIR

Kathryn Haley, Architectural Historian.
Contribution: Technical Study Author—Cultural Resources Inventory and Evaluation Report

Madeline Bowen, Architectural Historian.
Contribution: Technical Study Author—Cultural Resources Inventory and Evaluation Report

Christiaan Havelaar, Archaeologist.
Contribution: Technical Study Author—Cultural Resources Inventory and Evaluation Report

Shahira Ashkar, Archaeologist.
Contribution: Technical Study Author—Cultural Resources Inventory and Evaluation Report, Technical Writer—EIR

Jeff Peters, Geologist.
Contribution: Technical Writer—EIR

Will Forney, Hydrology and Water Specialist.
Contribution: Technical Writer—EIR

Jason Volk, Air Quality and Noise Specialist.
Contribution: Technical Study Author—Noise study

Marina Pelosi, Air Quality and Noise Specialist.
Contribution: Technical Study Author—Noise study

Dave Buehler, Acoustical Engineer and Associate Principal.
Contribution: Senior Peer Review—Noise

Tim Rimpo, Project Director – Air Quality Specialist.
Contribution: Senior Peer Review—Air Quality

Tony Held, Air Quality Specialist.
Contribution: Technical Study Author–Air quality study

Shannon Hatcher, Air Quality and Noise Specialist.
Contribution: Technical Writer—EIR

Bill Kasson, Environmental Scientist.
Contribution: Technical Study Author—Downtown Business Study

Sandy Wilson, Environmental Specialist.
Contribution: Technical Study Author—Downtown Business Study

Sally Zeff, Associate Principal.
Contribution: Senior Peer Review—Agricultural Resources, Land Use and Planning, Public Services and Utilities

Senh Saelee, Graphic Artist.
Contribution: Graphic and Figures

Sarah Sol, Technical Editor.
Contribution: Technical Editing

Chris Small, Technical Writer.
Contribution: Technical Editing—Cultural Resources Report

Jody Job, Senior Publications Specialist.
Contribution: Publication/Production

Josh Hunter, Publications Specialist.
Contribution: Publication/Production

EDAW|AECOM

El Charro Specific Plan

Environmental Vision

Simulation photos

PMC

El Charro Scenic Corridor Analysis Update

Dowling Associates

Traffic Study

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DRAFT

City of Livermore El Charro Specific Plan



Prepared for the
City of Livermore

JANUARY 2007

EDAW | AECOM

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January 2007

DRAFT

Environmental Impact Report

for the

El Charro Specific Plan

Volume 2 of 2

State Clearinghouse #: 2006052112

Prepared for:

LIVERMORE CALIFORNIA

City of Livermore
City Hall
1052 S. Livermore Avenue
Livermore, CA 94550

Jones & Stokes

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Draft Environmental Impact Report for the El Charro Specific Plan

Volume 2 of 2

State Clearinghouse #2006052112

Prepared for:

City of Livermore
City Hall
1052 S. Livermore Avenue
Livermore, CA 94550
Contact: Eric Brown
925/ 960-4450

Prepared by:

Jones & Stokes
2600 V Street
Sacramento, CA 95818-1914
Contact: Claire Bromund
916/737-3000

January 2007

Jones & Stokes. 2007. *Draft Environmental Impact Report for the El Charro Specific Plan*. Volume 2 of 2. January. (J&S 06137.06.) Sacramento, CA.

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Appendix B Air Quality Technical Data

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Appendix D Water Supply Assessment

Appendix E Traffic Technical Data

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Appendix A

NOP and NOP Comments

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Notice of Preparation

To: Responsible, Federal and Trustee Agencies (Agency)

(Address)

From: City of Livermore (Agency)

1052 South Livermore Avenue (Address)

Livermore, CA 94550-4899

Subject: **Notice of Preparation of a Draft Environmental Impact Report**

The City of Livermore will be the Lead Agency and will prepare an environmental impact report for the project identified below. We need to know the views of your agency as to the scope and content of the environmental information which is germane to your agency's statutory responsibilities in connection with the proposed project. Your agency will need to use the EIR prepared by our agency when considering your permit or other approval for the project.

The project description, location, and the potential environmental effects are contained in the attached materials. A copy of the Initial Study ☐ *is* ☒ *is not* attached.

Due to the time limits mandated by State law, your response must be sent at the earliest possible date but not later than 30 days after receipt of this notice.

Please send your response to Susan Frost, Principal Planner, at the address shown above. We will need the name for a contact person in your **agency**.

Project Title: El Charro Specific Plan

Project Applicant, if any: BBPL Development and Johnson-Himsl Partnership

Date: May 16, 2006

Signature: Susan Frost

Title: Principal Planner

Telephone: 925/960-4462

Reference: California Code of Regulations, Title 14, (CEQA Guidelines) Sections 15082(a), 15103, 15375.

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Notice of Preparation for an Environmental Impact Report for the El Charro Specific Plan

Prepared for:

City of Livermore
1052 South Livermore Avenue
Livermore, CA 94550-4899
Contact: Susan Frost, Principal Planner
925/960-4462

Prepared by:

Jones & Stokes
2600 V Street
Sacramento, CA 95818-1914
Contact: Claire Bromund
916/737-3000

May 2006

Jones & Stokes. 2006. *Notice of Preparation for an Environmental Impact Report for the El Charro Specific Plan.* May. (J&S 06-137.) Sacramento, CA. Prepared for the City of Livermore, Livermore, CA.

Introduction

Purpose and Organization of the NOP

The City of Livermore (City) is the lead agency for the preparation and review of an environmental impact report (EIR) for the El Charro Specific Plan. The City has decided to prepare a single EIR that would analyze the proposed project: the El Charro Specific Plan, development proposals, and the associated infrastructure improvements. The El Charro Specific Plan area (Specific Plan Area) is bounded by Interstate 580 (I-580) on the north, El Charro Road on the west, active mining quarries and undeveloped quarry land to the south, and Arroyo Las Positas, and the Livermore Municipal Golf Course to the east. The City has prepared this Notice of Preparation (NOP) of an EIR pursuant to Section 15082 of the California Environmental Quality Act (CEQA) Guidelines.

This NOP presents general background information on the scoping process, the environmental issues to be addressed in the EIR, and the anticipated uses of the EIR. It also describes the proposed project as currently envisioned, as well as preliminary alternatives. Both the project description and these alternatives are subject to refinement during the process of preparing the Draft EIR, depending, among other things, on input received in comments responding to this NOP.

Scope of the EIR

The EIR will contain analysis of both the short- and long-term impacts of implementation of the El Charro Specific Plan and associated infrastructure improvements. Below is a preliminary listing of potential environmental issues to be addressed in the EIR. The issues to be addressed will be finalized after comments on the NOP are received. It is not yet known for which environmental issue areas significant impacts would occur. The analysis in the draft EIR will ultimately determine whether these impacts could actually occur, determine their level of significance, and propose feasible mitigation measures to reduce significant impacts. Thresholds for determining significant impacts will be based on applicable sections of the State CEQA Guidelines and regulatory agency standards, and the judgment of the City of Livermore.

Aesthetics and Visual Resources
Air Quality
Threatened and Endangered Species
Biological Resources/Natural Communities
Wetlands
Cultural Resources
Historic Properties
Farmland/Agricultural Resources
Geology and Soils/Mineral Resources
Hazards and Hazardous Materials
Hydrology and Water Quality
Water Supply
Land Use
Noise
Population and Housing
Public Services and Utilities
Recreational Resources
Transportation
Cumulative and Growth-Related Impacts

Public Involvement for the EIR

The City is soliciting the views of interested persons and agencies on the scope and content of the environmental information that is germane to the proposed project. Agencies will use the EIR prepared under the direction of the City when considering permits or other approvals for the project. Because of the time limits mandated by State law, your written comments on the scope and content of the EIR must be ***received no later than the 30-day review period ending at 5:00 p.m. on June 22, 2006***. Please send written comments to City of Livermore, to the attention of Susan Frost at the above address. Please include the name of the contact person for your agency, if applicable.

The City will ensure that adequate public review and input will be available for the EIR. Public input will be solicited at the following points in the process:

- **Scoping comment period:** The City will hold a public scoping workshop on ***Thursday, June 8, from 7:00 p.m. to 9:00 p.m. at the Livermore Public Library located at 1188 S. Livermore Avenue***, to solicit public input on the scope of the EIR.
- **Draft EIR comment period:** The City will conduct a public hearing during a noticed Planning Commission meeting to present the conclusions of the draft EIR and solicit comments on the document. The hearing will also provide agencies and the public with opportunities to clarify any questions or concerns about the draft EIR.
- **Final EIR comment period:** The City will hold a public hearing before certifying the final EIR, during which the public and agencies can provide additional comments.

Project Description

Background

In 2004, the City adopted a comprehensive General Plan Update. In it, the City designated several parcels east of El Charro Road and south of I-580 as land suitable for Business/Commercial Park uses. The City has also adopted certain road, trail, and other infrastructure plans for this area, known as the El Charro area.

Property owners within the El Charro area have expressed interest in the City preparing a specific plan to address future land uses and development of the area. A specific plan could, in a coordinated manner, address the interests of a variety of property owners and agencies both in terms of development potential and provision of infrastructure necessary to serve it. A specific plan could also assist in planning for and addressing larger issues in the El Charro area, including circulation improvements, traffic safety, flood control, water storage, and conveyance systems.

The property owner of one site within the area has also prepared specific site plans and will be seeking site plan approval, a planned development district, a development agreement, tentative subdivision maps, and grading and building permits from the City concurrently with and immediately subsequent to approval of the Specific Plan.

In order to facilitate the buildout of the El Charro area consistent with the General Plan, complete planned circulation and recreational improvements will be proposed. To provide for unified and consistent planning for the project area, the City has decided to prepare the El Charro Specific Plan (Specific Plan). The City also decided to prepare a single EIR that would analyze the Specific Plan, development proposals, and the associated infrastructure improvements. These elements make up the proposed project and are discussed in more detail below.

Project Location

The project area is located in the City of Livermore, in eastern Alameda County (County), on the western side of the City (See Figure 1).

Downtown Livermore is located approximately 3.5 miles to the east of the

project area. The City of Pleasanton is located approximately 0.5 miles to the west and approximately 2 miles to the south. The City of Dublin is located to the north of the project area, north of I-580.

The Specific Plan Area is approximately 260 acres and is bounded by I-580 on the north, El Charro Road on the west, active mining quarries and undeveloped quarry land to the south, and Arroyo Las Positas, and the Livermore Municipal Golf Course to the east. The Specific Plan Area contains approximately 165 acres of private land, 80 acres owned by the City of Livermore, and 15 acres owned by the Alameda County Flood Control and Water Conservation District (Zone 7 Water Agency [Zone 7]). Much of the private lands are fallowed agricultural fields. One parcel is under lease to a driving range. A portion of the northeastern parcel (also referred to as the Friesman property which was the name of the former owner) is a small rural residential community of 10 to 11 housing units and ranch buildings that are accessible by a private drive. The remainder of the Specific Plan Area is owned by the City and Zone 7 and used either as part of its flood control program or as a buffer to the airport.

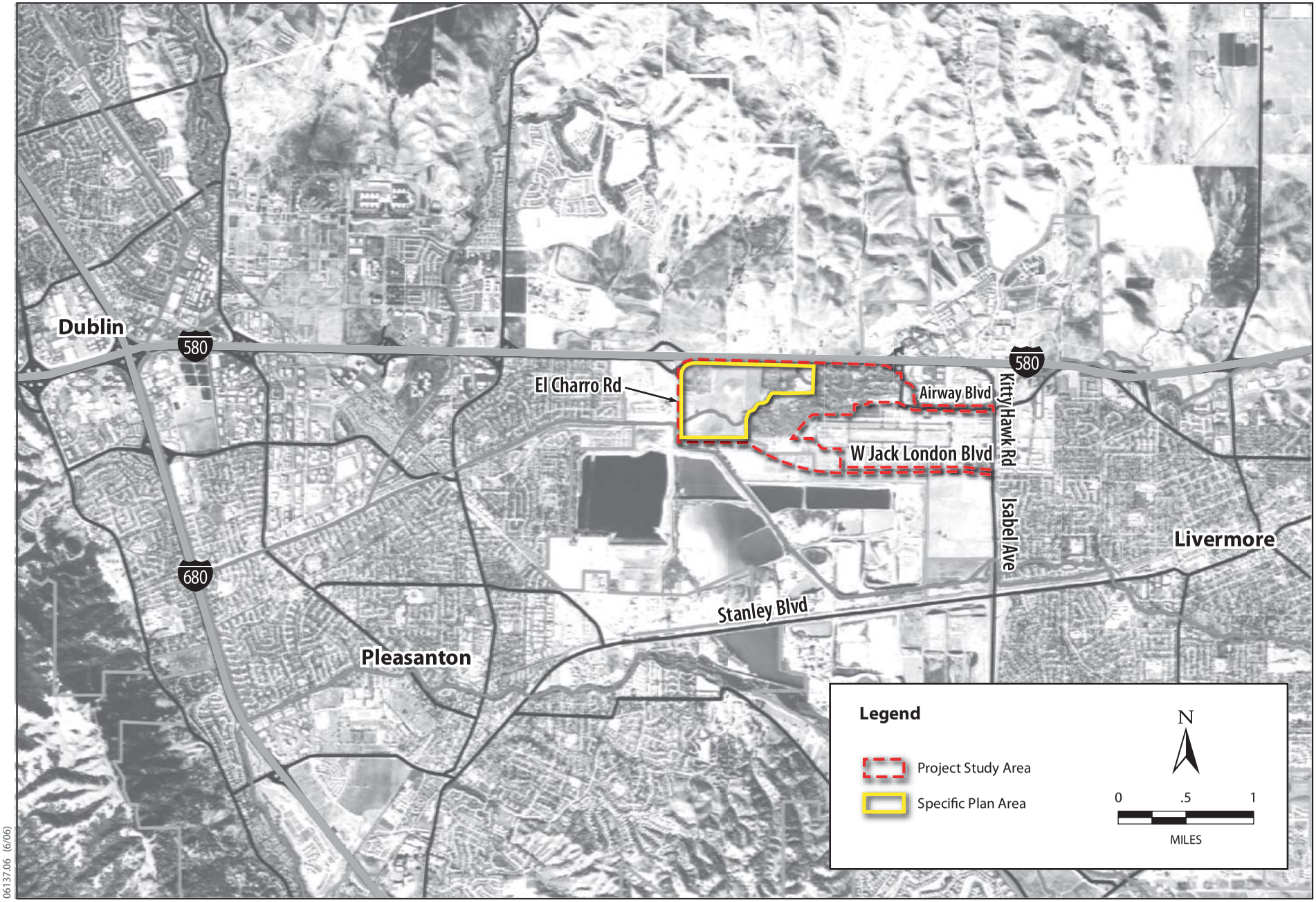
The land to the west of the Specific Plan Area is undeveloped unincorporated private land under the land use jurisdiction of Alameda County. The land to the north (across I-580) is partially within the City of Dublin city limits and partially in unincorporated Alameda County. The land to the east is developed as a public golf course and airport. The land to the south includes agricultural land adjacent to the quarries.

The project area extends beyond the limits of the Specific Plan Area and includes the study corridors for an east/west major road extension. The study corridors for the road extension start at El Charro Road, cross the Specific Plan Area north of Arroyo Las Positas, cross the arroyo, and proceed either southeast until meeting the existing Jack London Boulevard south of the airport or east through the golf course until meeting the existing Airway Boulevard. The study corridors continue east to Kitty Hawk Boulevard and Isabel Avenue.

Project Elements

The proposed project includes a number of distinct elements including the following:

- **El Charro Specific Plan** - The specific plan will be developed in accordance with California Government Code Section 65451 and will include a coherent policy framework and development standards that incorporates the multiple goals and objectives of landowners and agencies in the area. The specific plan will also identify the necessary backbone infrastructure, its phasing, and the funding sources and mechanisms necessary to serve development and other identified needs of the area.
- **Development Projects within the Specific Plan Area** - One of the private owners within the plan area, BBPL Development, is proposing a specific project for a retail development on approximately 57 acres. The project



06137.06 (6/06)

Jones & Stokes

Figure 1
Project Location

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would also include architectural gateway elements that may exceed the height limits established by I-580 Scenic Corridor policies. The purpose of the architectural elements would be to highlight the site as a gateway to Livermore and the Livermore Valley wine country. BBPL has requested a General Plan Amendment from the City's Scenic Corridor policies to facilitate development of the gateway elements and building development on the site.

Development plans for the other privately owned parcels in the area are uncertain at this time. Unless plans are sufficiently mature to advance to permit review (as determined by the City), for analysis purposes retail commercial uses consistent with the Business and Commercial Park (BCP) land use designation will be assumed for these parcels.

For the parcel owned by Crosswinds Church, an alternative use as a church facility, which could include a church, pre-school, living quarters for a caretaker, and other related facilities, will also be considered.

- **Development Agreements** – BBPL Development and the Johnson-Himsl Partnership have submitted applications for development agreements. The development agreements will address phasing and funding of infrastructure improvements, uses and development standards for their sites, provisions for dedication of land for public purposes, as necessary, and public benefits offered by the project. The development agreements may also address requirements for subsequent approvals, and development phasing.
- **General Plan Amendments** – The project will include consideration of General Plan Amendments addressing I-580 Scenic Corridor height limitations and revision to the Circulation Element for the Airway Boulevard extension option. The Johnson-Himsl Partnership has requested an amendment to the height limitations for portions of the project in proximity to the El Charro interchange. BBPL Development has requested amendment to the height limitations for architectural features in its proposed development.
- **Road Improvements** - The EIR will analyze two east/west major street extension corridors, one from West Jack London Boulevard and one from Airway Boulevard. Adjustments to several holes at the municipal golf course would be required with either roadway extension. The EIR will also address the realignment of Friesman Road, improvements to El Charro Road, and possible improvements to a portion of the I-580/El Charro Road Interchange.
- **Drainage Improvements** - The project will include detention basins and/or bypass channel facilities to handle interim flood flows for the Specific Plan Area, local site drainage facilities, and will address consistency with the proposed Zone 7 Water Agency Stream Management Master Plan within the Specific Plan area.
- **Other Infrastructure Improvements** – The project will require sewer, potable water, recycled water improvements, and extension of utility lines to support proposed development.

Figure 2 shows the location of the proposed development projects described above. The Specific Plan, roadway and drainage improvements area described further below.

El Charro Specific Plan

The Specific Plan Area is approximately 260 acres of mostly non-urbanized land that is rectangular in shape except where it follows Arroyo Las Positas on the eastern edge. Property owners include: BBPL Development, the Johnson-Himsl Partnership, Roger Johnson, Crosswinds Church, El Charro Vista LLC, Children's Hospital, the City of Livermore, and the Zone 7 Water Agency. Private land covers about 165 acres and the City and Zone 7 own the remaining land.

General Plan Land Use Designations

The General Plan designates the majority of the Specific Plan Area as Business and Commercial Park (BCP), which allows a Floor Area Ratio (FAR) of .3 to .5. BCP areas are required to be a minimum of 20 acres, located in the general vicinity of the freeway, and typically along major streets.

The City-owned parcels in the southern half of the site and the Jamieson properties adjacent to the site are designated as Limited Agriculture (LDAG). This designation applies to areas where 20 acre parcels may be appropriate and is used to establish transition areas between lower density residential development and larger agriculture parcels around the city designated as Agriculture/ Viticulture. In the Specific Plan Area, the LDAG designation provides flood control and airport buffer functions.

Future Land Use

The Specific Plan will follow the General Plan's land use recommendation for the area, further refining and developing alternatives that will fit within the BCP land use designation. Land contained within the BCP designation is developable under a range of land use categories. These uses include:

- Community/regional commercial uses, such as large, destination-oriented retail commercial uses (factory outlet centers and warehouse wholesale/retail stores) or large commercial service uses (home improvement centers, furnishings and appliance stores, and automobile and recreational vehicles sales).
- Professional and administrative offices.
- Highway-oriented commercial uses (hotel/motel and convention center).



06137.06 NOP (5-06)

Figure 2
Specific Plan Area and Proposed Development Projects

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- Support and ancillary services (restaurants and service stations).
- Low intensity industrial uses as long as they are compatible with the above uses.

The focus of the Specific Plan will be on community/regional commercial uses and associated support services.

It is anticipated that the City of Livermore-owned land within the Specific Plan Area will remain as LDAG. This will allow these areas to continue to provide a buffer between the future BCP land uses and surrounding land uses, such as the quarries to the south and the airport to the east.

Contents of the Specific Plan

The Specific Plan, in accordance with California Government Code Section 65451 shall include all of the following in detail:

- The distribution, location, and extent of the uses of land, including open space, within the area covered by the plan.
- The proposed distribution, location, and extent and intensity of major components of public and private transportation, sewage, water, drainage, solid waste disposal, energy, and other essential facilities proposed to be located within the area covered by the plan and needed to support the land uses described in the plan.
- Standards and criteria by which development will proceed, and standards for the conservation, development, and utilization of natural resources, where applicable.
- A program of implementation measures including regulations, programs, public works projects, and financing measures necessary to carry out paragraphs (1), (2), and (3).
- A statement of the relationship of the Specific Plan to the general plan.

Road Improvements

Major East/West Street Extension

Two alternative major street extension corridors will be considered in the EIR: Jack London Boulevard and Airway Boulevard. The corridor for the extension of West Jack London from Isabel Avenue to El Charro Road includes road improvements and a new bridge crossing at the Arroyo Las Positas. This roadway extension involves right-of-way for a four-lane facility and median and provides a second primary access and circulation spine serving the El Charro area that would allow future development to proceed.

The extension of Jack London Boulevard may be constructed in phases, with the section from El Charro Road north of Arroyo Las Positas constructed in a first phase, and the bridge and the section south of Arroyo Las Positas to the existing section of Jack London Boulevard south of the airport being constructed in one or more phases at a later time.

The corridor for the extension of Airway Boulevard west from Kitty Hawk Boulevard to El Charro Road includes elements similar to the extension of Jack London Boulevard. The alignment of this alternative would pass through Las Positas golf course and would require redesign of the course layout.

Realignment of Friesman Road

Friesman Road will be realigned to provide local access within the Specific Plan area. The existing intersection with El Charro Road would be removed and a new connection to the proposed east/west major street would be provided.

El Charro Road Improvements

El Charro Road anticipated improvements involve widening the road to four lanes between the interchange and the intersection with the major east/west street extension. Planning for El Charro Road would need to be done in concert with Alameda County and the City of Pleasanton due to the parallel planning for the Staples Ranch Specific Plan and because El Charro Road is a County road. Because of previously expressed concerns about existing levels of quarry-related traffic on El Charro, the City will coordinate to the extent possible with quarry operators regarding the assessment of traffic impacts on El Charro and the development of feasible mitigation for any significant impacts relating to quarry traffic.

I-580/El Charro Road Interchange Improvements

As part of the East Dublin Specific Plan development, the first phase of improvements to the existing I-580/El Charro Road interchange is planned by the City of Dublin. The current diamond interchange will be improved to a partial cloverleaf with widening of the overpass from two to four lanes and miscellaneous ramp widening. Completion of the first phase improvement is anticipated by 2008. The EIR will analyze potential impacts to the interchange and possible improvements.

Drainage Improvements

Portions of the Specific Plan Area designated as BCP are within the flood plain

of the Arroyo Las Positas. During flood events, the flood plain acts as a detention basin and limits peak downstream storm flows in Pleasanton. Development within the floodplain could have an impact on regional hydrology during a flood event. In addition, the Specific Plan Area contains portions of the area conceptually planned by Zone 7 for a future flood control bypass facility.

Development of the Specific Plan Area will likely require construction of an interim bypass channel and detention basin in order to address drainage issues. A hydraulic analysis of the project is currently being conducted in order to design necessary flood control improvements. The drainage improvements will be defined at a project level by the Draft EIR in order to assess their potential environmental effects.

Zone 7, the lead agency responsible for regional flood protection, is currently developing a Stream Management Master Plan that identifies a bypass channel east of the Specific Plan Area that would convey watershed and urban storm water runoff from the Arroyo Las Positas to Cope Lake for detention during storm events. Although Cope Lake is currently being used for groundwater recharge, it is located on an active quarry operation which precludes its use until a bypass system is in place that allows water to flow to the lake. Implementation of the proposed project would need to provide reasonable opportunity for the bypass in the future should the SMMP be adopted.

Required Permits and Approvals

Table 1, below, lists the permits and other approvals that may be necessary for the various project elements.

Table 1. Required Permits and Approvals

Agency	Permit, Approval, or Consultation
U.S. Army Corps of Engineers	Authorization under Section 404 of the Clean Water Act for placement of fill within waters of the United States
U.S. Fish and Wildlife Service	Consultation under Section 7 or Section 10 of the federal Endangered Species Act
Federal Emergency Management Agency	Approval of a conditional letter of map revision (CLOMR) and a letter of map revision (LOMR) for removal of the project area from designated floodplain mapping
Federal Aviation Administration	Approval for use of the City land on or adjacent to the Livermore Municipal Airport for flood control and or parking or other uses
U.S. Department of Homeland Security (USDHS)	Portions of the project within the airport safety zone may require approval of USDHS
California Department of Fish and Game	Section 1602 Streambed Alteration Agreement for waters of the State; potential consultation under Section 2081 of state Endangered Species Act; CEQA trustee agency
California Department of Transportation	Encroachment permit and approval for improvements to the I-580/El Charro Road Interchange
California Department of Conservation	Notification of the cancellation of properties under Williamson Act contract
San Francisco Bay Regional Water Quality Control Board	Section 401 Water Quality Certification or waste discharge requirements
San Francisco Bay Area Air Quality Management District	Permit for air emission generating equipment
Alameda County	Coordination on Staples Ranch Specific Plan and El Charro Road improvements
Alameda County Public Works Agency	Approval for improvements/alteration to El Charro Road
Alameda County Airport Land Use Commission	Consultation concerning new land uses in proximity to the airport
Alameda County Flood Control and Water Conservation District/ Zone 7 Water Agency	Authorization for alteration of portions of Arroyo Las Positas owned by Zone 7
City of Livermore	Lead agency under CEQA; Specific Plan approval; approval of site plans, development agreements, planned development district, grading and building permits; approval of infrastructure improvements, funding and phasing; approval of east/west roadway extension; City Council consideration of landowner's request for Williamson Act contract cancellation
City of Pleasanton	Coordination on Staples Ranch Specific Plan and El Charro Road and I-580 interchange improvements
City of Dublin	Coordination on I-580/El Charro Road interchange improvements

U.S Department
of Transportation

**Federal Aviation
Administration**

Western-Pacific Region
Airports Division
San Francisco Airports District Office

831 Mitten Road, Suite 210
Burlingame, CA 94010-1300

RECEIVED
MAY 23 2006
PLANNING DIVISION

May 18, 2006

Ms. Susan Frost, Principal Planner
City of Livermore
1052 South Livermore Avenue
Livermore, CA 94550-4899

Dear Ms. Frost:

RE: May 16, 2006, Notice of Preparation of a Draft Environmental Impact Report, El Charro Specific Plan

We have reviewed the information included in your May 16, 2006 Notice of Preparation (NOP) for impacts the Federal Aviation Administration (FAA) programs and the Livermore Municipal Airport (LVK).

The City has received grant funding for the purpose of acquiring land for the airport runway safety areas, airport approach protection, and airport access.

The NOI does not provide sufficient information regarding right-of-way alignments for the street improvements that may cross through the boundary of the airport property depicted on the Airport Layout Plan (ALP) approved by the FAA on August 27, 2002. The City/FAA airport grant agreements require the City to depict all existing and future improvements within the boundary of the airport property to be depicted on the ALP. The improvements depicted on an ALP are subject to FAA review and approval based on airport design criteria. The improvements made on airport property must be beneficial to civil aviation.

The approval of the ALP is considered a federal action that is subject to federal environmental review requirements covered by the National Environmental Policy Act (NEPA).

If the City's street improvements are for the purpose of supporting the traffic circulation for ingress/egress to the proposed Specific Plan improvements the FAA will require further documentation to determine the benefit to civil aviation. Roads serving the airport must be dedicated to the exclusive use of the airport; i.e. servicing ingress/egress to the airport terminal area, aircraft storage areas, and approved commercial properties within the boundary of the airport boundary.

The City is encouraged to continue to work with the Airport Land Use Commission and the City's airport management to discuss possible impacts to airport traffic patterns, future capital improvement plans for the airport, and airport property land use restrictions.

There are notification requirements for manmade structures that should be evaluated in accordance with FAR Part 77, *Objects affecting Navigable Airspace*.

If you have additional questions please contact me at (650) 876-2778, extension 610.

Sincerely,

Joseph R. Rodriguez
Supervisor, Environmental Planning and Compliance Section

CC: Caltrans: Ms. Sandy Hessnard
City of Livermore Airport Manager

STATE OF CALIFORNIA
PUBLIC UTILITIES COMMISSION
505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3298

ARNOLD SCHWARZENEGGER, *Governor*

May 24, 2006

Susan Frost
City of Livermore
1052 S. Livermore Avenue
Livermore, CA 94550

RECEIVED
MAY 30 2006
PLANNING DIVISION

Dear Ms. Frost:

Re: SCH #2006052112; El Charro Specific Plan

As the state agency responsible for rail safety within California, we recommend that any development projects planned adjacent to or near the rail corridor in the County be planned with the safety of the rail corridor in mind. New developments may increase traffic volumes not only on streets and at intersections, but also at at-grade highway-rail crossings. This includes considering pedestrian circulation patterns/destinations with respect to railroad right-of-way.

Safety factors to consider include, but are not limited to, the planning for grade separations for major thoroughfares, improvements to existing at-grade highway-rail crossings due to increase in traffic volumes and appropriate fencing to limit the access of trespassers onto the railroad right-of-way.

The above-mentioned safety improvements should be considered when approval is sought for the new development. Working with Commission staff early in the conceptual design phase will help improve the safety to motorists and pedestrians in the County.

If you have any questions in this matter, please call me at (415) 703-2795.

Very truly yours,

Kevin Boles
Utilities Engineer
Rail Crossings Engineering Section
Consumer Protection and Safety Division

cc: Pat Kerr, UP
Carol Harris, UP

WENDEL
ROSEN
BLACK
& DEAN
LLP
ATTORNEYS AT LAW

1111 Broadway, 24th Floor
Oakland, CA 94607-4036

Post Office Box 2047
Oakland, CA 94604-2047

Telephone: (510) 834-6600
Fax: (510) 834-1928
NParish@wendel.com

RECEIVED
JUN 06 2006
PLANNING DIVISION

June 1, 2006

Susan Frost
Principal Planner
City of Livermore
1052 South Livermore Avenue
Livermore, CA 94550-4899

Re: Notice of Preparation of a Draft Environmental Impact Report, dated May 16, 2006, for the El Charro Specific Plan

Dear Ms Frost:

This office represents Vulcan Materials Company, Western Division, owner and operator of quarry lands and facilities located south of the area subject to the proposed El Charro Specific Plan ("Specific Plan"). We are in receipt of the Notice of Preparation issued May 16, 2006 ("NOP"), with respect to a Draft Environmental Impact Report ("EIR") for the Specific Plan.

The NOP indicates that the Specific Plan will incorporate improvements to El Charro Road, including a realignment of the El Charro Road / Friesman Road intersection, and would result in significant increases in traffic on El Charro Road. As you are aware, El Charro Road provides the only access to Vulcan's quarry operations. Accordingly, we appreciate the fact that the NOP explicitly notes that Livermore intends to coordinate with Vulcan and the other quarry operators to develop feasible mitigation measures for the impacts of the roadway improvements and increased traffic on El Charro Road that would result from the Specific Plan.

Vulcan and this office have previously written to Livermore regarding the proposed Specific Plan and related roadway improvements. For the record, in connection with the preparation of the EIR, attached are copies of the following such letters:

- A letter from Vulcan to Livermore, the City of Pleasanton, and the County of Alameda, dated May 3, 2006.
- A letter from this office to Livermore, dated January 6, 2006.
- A letter from Vulcan to Livermore, dated January 27, 2005.

Vulcan looks forward to working constructively with Livermore regarding the Specific Plan, the EIR, and the improvements to El Charro Road.

Sincerely,

WENDEL, ROSEN, BLACK & DEAN LLP

Neal A. Parish

NAP:np
Attachments

cc: Sblend Sblendorio, Esq.
Vulcan Materials Co.
David L. Preiss, Esq.

SR
04

Vulcan
Materials Company

Western Division

May 3, 2006

Mr. Nelson Fialho
City Manger
City of Pleasanton
P. O. Box 520
Pleasanton, CA 94566

Ms. Linda Barton
City Manager
City of Livermore
1052 S. Livermore Avenue
Livermore, CA 94554

Mr. James Sorenson
Agency Director
Community Development Agency
County of Alameda
224 W. Winton Avenue
Room 110
Hayward,CA 94544

Re: El Charro Road Area Traffic Improvements

Dear Messrs. Fialho and Sorenson and Ms. Barton:

For many years now, Vulcan has periodically worked with the County, Pleasanton and Livermore, as well as developers and other stakeholders, towards a long-term solution of the traffic circulation issues arising from the potential development of properties accessing El Charro Road in the vicinity of the aggregate quarries owned or operated by Vulcan, Pleasanton Gravel Co. and others. The successful resolution of these issues is critical to maximizing recovery of mineral resources determined by the State to be of "regional significance" as well as the very future of California's transportation infrastructure, as recently attested by the Director of CalTrans in his February 27, 2006 open letter to the State's transportation partners (copy enclosed).

Most recently, your respective agencies have initiated land use proceedings regarding the potential development of Staples Ranch and the area commonly referred to as the El Charro Road Specific Plan, both of which trigger the very obvious and well-documented need to construct significant circulation improvements to safely coordinate continued quarry truck traffic with anticipated increases in passenger vehicle traffic resulting from these developments, as well as developments already being constructed in Dublin on the north side of the El Charro Road/I-580 interchange.

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501 EL CHARRO ROAD • PLEASANTON, CALIFORNIA 94566 • TELEPHONE 925 846-2852

Vulcan remains committed to work with you in a concerted effort to facilitate a safe transition of this very rural area into new extensions of your communities. Undoubtedly there are many pieces that must first be fitted together to assure both shorter-term and long-term solutions to this transportation corridor puzzle. This task is made all the more difficult by the fact that the developments are occurring within separate jurisdictions, each with its own set of goals and guiding policies.

Vulcan looks forward to receiving from you soon for its review, proposed plans for traffic improvements to the El Charro/Stoneridge/Jack London corridor. Please rest assured that, as in the past, Vulcan will review and comment upon such plans in a professional and expeditious manner. Given the need to address and reach consensus on these improvements, as well as related items such as phasing, funding, construction management, unrestricted access assurances, disclosures, etc., Vulcan firmly believes that the only coherent manner in which all of these items can be sensibly memorialized is in the form of one or more pre-development and cooperation agreements between each of the agencies and the quarry stakeholders. Such agreement(s) might generally be similar to the one that was negotiated among the County, Pleasanton, K&B, and CalMat (Vulcan's predecessor) in 1997 with respect to the then-proposed development of Staples Ranch.

We look forward to participating constructively with you on a go-forward basis regarding these projects. We would urge that the improvements review and related agreement process, including stakeholders, be initiated at the earliest possible time in order to avoid any perceived "last minute" hurdles that could jeopardize the success of a public-private partnership to plan for and implement appropriate solutions for these issues.

We look forward to hearing from you in the near future on all of these items. Thank you in advance for your cooperation.

Very truly yours,

Douglas J. Reynolds
Regional Manager Business Development
Northern & Central California

Enclosure

cc: Stuart Cook
Jerry Iserson
Marc Roberts
Sblend Sblendorio, Esq.
Doug Jamieson
David L. Preiss, Esq.

STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY ARNOLD SCHWARZENEGGER, Governor

DEPARTMENT OF TRANSPORTATION
OFFICE OF DIRECTOR
1120 N STREET
P. O. BOX 942873
SACRAMENTO, CA 94273-0001
PHONE (916) 654-5266
FAX (916) 654-6608
TTY (916) 653-4086

Flex your power!
Be energy efficient!

February 27, 2006

Dear Transportation Partners:

As I am sure you are aware, the Governor has proposed the Strategic Growth Plan, which calls for $105 billion to be invested in transportation over the next ten years, plus $2 billion for mitigation of existing air quality impacts from ports and goods movement. In all, nearly half of the estimated $222 billion expected to be raised under the plan is slated for transportation.

Part of the Governor's Strategic Growth Plan is a historic comprehensive transportation investment package that incorporates *GoCalifornia*, a mobility action plan designed to decrease congestion, improve travel times, and increase safety. Last fiscal year, the California Department of Transportation (Department) delivered about $900 million in highway construction. This year we are on track to deliver over $3 billion. If the Legislature adopts the Governor's infrastructure program, the Department will be challenged to deliver an even larger program over the next few years. Although highway construction is a relatively minor component in overall aggregate consumption in California, we are concerned about availability and pricing. As part of *GoCalifornia,* the Department's statewide strategy is to work with communities and other State agencies in securing adequate industry capacity for California's needs.

Towards this effort, I would like to bring to your attention the tremendous amount of aggregate needed to supply the projects that support the improvement of the State's transportation infrastructure and the need for new aggregate sources. In recent industry capacity expansion workshops, our construction industry partners shared their concern about the availability of aggregate and other commodities in California. Based upon information from the Department of Conservation, possible cost increases because of potential shortages of aggregate would impact the fiscal budgets of local, regional, and State public works agencies (see enclosed reduced copy of Map Sheet 52, and visit the following Internet site http://www.conservation.ca.gov/CGS/geologic_resources/mineral_production/ms52.htm).

At these workshops, the industry also informed the Department of the many years it can take to get a new aggregate source through the permitting process. We encourage the development of new material sources for aggregate reserves that are identified and developed within California, but recognize that the permitting of any new mining locations must be done in accordance with federal, State, and local laws and regulations while being environmentally sensitive.

Please share this information with your planning commissions, city councils, and county board of supervisors. Thank you in advance for your assistance in helping the Department in its mission to improve mobility across California.

Sincerely,

WILL KEMPTON
Director

Enclosure

c: Mr. Charlie Rea, Construction Materials Association of California
Mr. Sam Hassoun, ACG of California
Ms. Tara Haas, Engineering & Utility Contractors Association
Mr. Ed Kalish, Southern California Contractors Association, Inc.
RTPAs
MPOs
County Transportation Commissions

WENDEL
ROSEN
BLACK
&DEAN
LLP
ATTORNEYS AT LAW

1111 Broadway, 24th Floor
Oakland, CA 94607-4036

Post Office Box 2047
Oakland, CA 94604-2047

Telephone: (510) 834-6600
Fax: (510) 834-1928
NParish@wendel.com

January 6, 2006

VIA EMAIL

Mayor Marshall Kamena
Members of the City Council
City of Livermore
1052 South Livermore Avenue
Livermore, CA 94550-4899

Re: Request to Initiate Negotiation of a Development Agreement with BBPL Development for Off-Site Infrastructure Improvements, Financing Options and Phasing of Improvements on a 50± Acre Site within the El Charro Specific Plan Area; Development Agreement 05-005
Agenda Item 5.03, City Council Meeting of January 9, 2006

Dear Mayor Kamena and Members of the City Council:

This office represents Vulcan Materials Company, Western Division, owner and operator of quarry lands and facilities located to the south of the proposed BBPL Development project. In a letter from Vulcan to the City, dated January 25, 2005, a copy of which is attached hereto, Vulcan requested that the City prepare and consider a Specific Plan to address, in a coordinated fashion, the future potential uses and development of the Friesman Road corridor along the western edge of the City. The City has apparently decided to follow Vulcan's recommendation, and has taken steps over the past year to initiate what the City refers to as the El Charro Specific Plan.

The BBPL Development project comprises approximately one-third of the proposed Specific Plan area. The Council staff report for this item suggests that the requested development agreement would be processed concurrently with the Specific Plan. We believe it is premature to negotiate a development agreement for the BBDL Development project, especially since it comprises such a large proportion of the Specific Plan Area, until such time as the Specific Plan and related EIR are complete, and the City has taken action on the Specific Plan.

In the past year, the need for a Specific Plan has become even more evident, in light of the significant development proposed for the adjacent Staples Ranch area within the City of Pleasanton. It is imperative that the Specific Plan, and the related EIR, be completed at the earliest possible time, to insure proper coordination between development in Pleasanton and Livermore. The Specific Plan EIR must not only consider the impacts of development within the Specific Plan area, but must also consider the impacts of other development in the area, including but not limited to Staples Ranch (and the related extension of Stoneridge Drive), the redevelopment of the former Hanson quarry property (and the related extension of El Charro Road to Stanley Boulevard), and the build-out of Dublin Ranch. Once completed, the Specific Plan and its associated EIR can then be used by the City to determine the proper type and intensity of development on the BBDL Development site.

Please ensure that this letter and its attachment are included in the administrative records for the BBPL Development project and the Specific Plan.

Sincerely,

WENDEL, ROSEN, BLACK & DEAN LLP

Neal A. Parish

NAP:np
Attachment

cc: Marc Roberts
Alice Calvert
James Sorensen, Alameda County
Stuart Cook, Alameda County
Nelson Fialho, City of Pleasanton
Jerry Iserson, City of Pleasanton
Sblend Sblendorio, Esq.
Richard C. Jacobs, Esq.
Robert Himsl
John Steinbuch
Vulcan Materials Co.
David L. Preiss, Esq.

Vulcan
Materials Company

Western Division

January 27, 2005

Mayor Marshall Kamena
Members of the City Council
City of Livermore
1052 South Livermore Avenue
Livermore, CA 94550-4899

Re: Friesman Road Specific Plan

Dear Mayor Kamena and Members of the City Council:

As the owner and/or operator of over 1,400 acres of quarry lands and related facilities along El Charro Road, between the cities of Pleasanton and Livermore, CalMat Co., d/b/a Vulcan Materials Company, Western Division ("Vulcan"), hereby submits this request that the City of Livermore prepare and consider a Specific Plan to address, in a coordinated fashion, the future potential uses and development of the Friesman Road corridor along the western edge of the City.

As you are aware, the only access to Vulcan's quarry operations is via El Charro Road from I-580. El Charro Road also provides the only access to Friesman Road. For the past two years, Vulcan has been working on an informal basis with Livermore, Alameda County and the CrossWinds Church in order to address, in a cooperation fashion, the impacts of proposed development of the church site on Friesman Road. In particular, Vulcan has remained concerned over the safety impacts resulting from the anticipated mix of increased passenger automobile traffic with existing quarry truck traffic. This concern has led to more focused discussion between the participants regarding possible construction of a new and relocated intersection between El Charro Road and Friesman Road. These efforts to address church-related impacts has been further complicated by the fact that there is not yet in place a definitive City plan for the westward extension/alignment of Jack London Blvd. Additionally, according to published reports, CrossWinds Church is seeking to expand their proposal so that it also includes a sports park jointly developed with the City.

To make matters even more complicated, we have recently been contacted by other property owners and developers regarding additional development proposals for the Friesman Road/El Charro Road area within Livermore. These parties have each requested that Vulcan participate in separate meetings and discussions as to development of their respective properties. Vulcan remains willing and able to participate in meaningful discussions with the City and all other stakeholders in order to address planning and safety issues in the area. However, it does not make good planning sense, and Vulcan should not be expected, to address these various and disparate development proposals on a piecemeal basis.

Instead, Vulcan believes that the appropriate tool to implement logical planning and environmental review for the Friesman Road area within Livermore's jurisdiction would be a Specific Plan for that area. This would establish the means and legal framework to address critical safety and

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501 EL CHARRO ROAD • PLEASANTON, CALIFORNIA 94566 • TELEPHONE 925 846-2852

other environmental impact issues, consistency with Livermore's General Plan, necessary roadway and other infrastructure components, and the coordination of proposed developments both within the planning area and with other potential developments within the neighboring Pleasanton and County jurisdictions.

Pursuant to California Government Code Section 65451(a), the Friesman Road Specific Plan would specify all of the following in detail: (1) the distribution, location, and extent of the uses of land, including open space, within the area covered by the Plan; (2) the proposed distribution, location, and extent and intensity of major components of public and private transportation (including the extension of Jack London Blvd.), sewage, water, drainage, solid waste disposal, energy, and other essential facilities proposed to be located within the Plan area and needed to support the land uses described in the plan; (3) standards and criteria by which potential development would proceed, and standards for the conservation, development, and utilization of natural resources; and (4) a program of implementation measures including regulations, programs, public works projects, and financing measures necessary to carry out the elements of the Specific Plan.

Based on discussions to date, we understand that Robert Himsl, a property owner in the Friesman Road area, also supports the concept of a Friesman Road Specific Plan prior to any City approvals of any development in the area.

Thank you in advance for your consideration of these comments. Please feel free to contact me with any questions you may have in this matter.

Sincerely,

Douglas J. Reynolds
Regional Sales Manager, Northern & Central California

DJR:np

cc: Livermore Planning Commission
Linda Barton, City Manager
Marc Roberts, Community Development Director
Eric Brown, Planning Manager
Stuart Cook, Surplus Property Authority of Alameda County
Karen Borrmann, Alameda County Public Works Agency
Dave Nielson, CrossWinds Church
Geoff Etnire, Esq.
Robert Himsl
Jerry Iserson, Director of Planning and Community Development, City of Pleasanton
David L. Preiss, Esq.

U.S. Department of Homeland Security
FEMA Region IX
1111 Broadway, Suite 1200
Oakland, CA. 94607-4052

FEMA

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PLANNING DIVISION

June 5, 2006

Susan Frost
Principal Planner
City of Livermore
1052 South Livermore Avenue
Livermore, California 94550
Dear Ms. Frost:

This is in response to your Notice of Preparation for an Environmental Impact Report dated May 16, 2006 for the El Charro Specific Plan, Livermore, California.

Please review the current effective Flood Insurance Rate Maps (FIRMs) for the affected area. Please note that the affected area is within a National Flood Insurance Program (NFIP) participating community. The minimum NFIP floodplain management requirements for development are described in the 44CFR, Sections 59 through 65.

A summary of these NFIP floodplain management building requirements are as follows:

- All buildings constructed within a riverine floodplain, (i.e., Flood Zones A, AO, AH, AE, and A1 through A30 as delineated on the FIRM), must be elevated so that the lowest floor is at or above the Base Flood Elevation level in accordance with the effective Flood Insurance Rate Map.

- If the area of construction is located within a Regulatory Floodway as delineated on the FIRM, any ***development*** must not increase base flood elevation levels. **The term *development* means any man-made change to improved or unimproved real estate, including but not limited to buildings, other structures, mining, dredging, filling, grading, paving, excavation or drilling operations, and storage of equipment or materials.** A hydrologic and hydraulic analysis must be performed *prior* to the start of development, and must demonstrate that the development would not cause any rise in base flood levels. No rise in permitted within regulatory floodways.

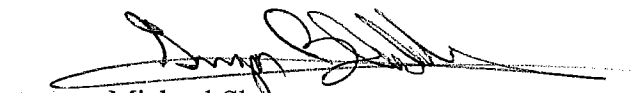
- Upon completion of any development that changes existing Special Flood Hazard Areas, the NFIP directs all participating communities to submit the appropriate hydrologic and hydraulic data to FEMA for a FIRM revision. In accordance with CFR44, Section 65.3, as soon as practicable, but not later than six months after such data becomes available, a community shall notify FEMA of the changes by submitting technical data for a flood map revision. To obtain copies of FEMA's Flood Map Revision Application Packages, please refer to the FEMA website at http://www.fema.gov/pdf/fhm/mt-2.pdf

Please Note:

Many NFIP participating communities have adopted floodplain management building requirements which are more restrictive than the minimum federal standards described in 44CFR. Please contact the local community's floodplain administrator for more information on local floodplain management building requirements.

If you have any questions or concerns, please do not hesitate to call Sarah Owen of my staff at (510) 627-7050.

Sincerely,



For: Michael Shore
Branch Chief
Community Mitigation Programs

cc:
Pamela Lung, Floodplain Manager, City of Livermore
Ray Lee, CA State Coordinator, Central District
Sandro Amaglio, Environmental Officer, FEMA Region IX

DEPARTMENT OF TRANSPORTATION
DIVISION OF AERONAUTICS – M.S.#40
1120 N STREET
P. O. BOX 942873
SACRAMENTO, CA 94273-0001
PHONE (916) 654-4959
FAX (916) 653-9531
TTY (916) 651-6827

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PLANNING DIVISION

Flex your power!
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June 7, 2006

Ms. Susan Frost
City of Livermore
1052 W. Livermore Avenue
Livermore, CA 94550

Dear Ms. Frost:

Re: City of Livermore's Notice of Preparation of a Draft Environmental Impact Report for the El Charro Specific Plan; SCH# 2006052112

The California Department of Transportation (Caltrans), Division of Aeronautics (Division), reviewed the above-referenced document with respect to airport-related noise and safety impacts and regional aviation land use planning issues pursuant to the California Environmental Quality Act (CEQA). The Division has technical expertise in the areas of airport operations safety and airport land use compatibility. We are a funding agency for airport projects and we have permit authority for public and special use airports and heliports. The following comments are offered for your consideration.

The proposal is for the El Charro Specific Plan development proposals and associated infrastructure improvements. As shown in Figure 1 of the Notice of Preparation (NOP), the Project Study Area surrounds Livermore Municipal Airport to the north, west and south. Within the Study Project Area is the El Charro Specific Plan Area, located west/northwest of the airport. The El Charro "Specific Plan Area and Proposed Development Projects" shown in Figure 2 of the NOP, includes a proposed children's hospital approximately 1,000 feet northwest of the west end of the Livermore Municipal Airport's Runway 7L-25R. Also shown in Figure 2 is the proposed Crosswinds Church site that will be located approximately 3,000 feet northwest of the airport. The entire study area is within the Alameda County Airport Land Use Policy Plan's designated Airport Land Use Commission (ALUC) General Referral Area and will be subject to aircraft overflights and subsequent noise and safety impacts.

Livermore is an active airport, with over 600 based aircraft and approximately 235,000 annual operations. Livermore is also considering expansion plans for the airport. Portions of the specific plan area are well within the 60 and 65 decibel (dB) Community Noise Equivalent Level (CNEL) contours projected for the year 2020 in the Livermore Municipal Airport Master Plan Update. Airport-related noise concerns should be thoroughly addressed in the Draft Environmental Impact Report (DEIR)

The proposal should be submitted to the Alameda County ALUC for a consistency determination. The proposal should also be coordinated with Livermore Municipal Airport staff to ensure that the proposal will be compatible with future as well as existing airport operations.

Protecting people and property on the ground from the potential consequences of near-airport aircraft accidents is a fundamental land use compatibility-planning objective. While the chance of an aircraft injuring someone on the ground is historically quite low, an aircraft accident is a high consequence event. To protect people and property on the ground from the risks of near-airport aircraft accidents,

some form of restrictions on land use are essential. The two principal methods for reducing the risk of injury and property damage on the ground are to limit the number of persons in an area and to limit the area covered by occupied structures. The potential severity of an off-airport aircraft accident is highly dependent upon the nature of the land use at the accident site. Airport-related safety and land use concerns should be thoroughly addressed in the DEIR.

The Caltrans Airport Land Use Planning Handbook (Handbook) identifies six airport safety zones based on risk levels. The project site appears to be within the Inner Approach/Departure Zone (Zone 2), Inner Turning Zone (Zone 3), Outer Approach/Departure Zone (Zone 4) and Traffic Pattern Zone (Zone 6) as designated in the Handbook. The Handbook generally recommends against hospitals within all the safety zones. High intensity uses such as meeting halls are also recommended against within Zones 2, 3 and 4. Additional land use compatibility criteria are further discussed in the Handbook. Please note, CEQA, Public Resources Code 21096, requires the Caltrans Handbook be utilized as a resource in the preparation of environmental documents for projects within an airport land use compatibility plan boundaries or if such a plan has not been adopted, within two nautical miles of an airport. The Handbook is available on-line at http://www.dot.ca.gov/hq/planning/aeronaut/-htmlfile/landuse.php.

Federal and State regulations regarding aircraft noise do not establish mandatory criteria for evaluating the compatibility of proposed land use development around airports (with the exception of the 65 dB CNEL "worst case" threshold established in the State Noise Standards for the designated "noise problem" airports). For most airports in California, 65 dB CNEL is considered too high a noise level to be appropriate as a standard for land use compatibility planning. This is particularly the case for evaluating new development in the vicinity of the airport. The 60 dB CNEL, or even 55 dB CNEL, may be more suitable for new development around most airports. For a further discussion of how to establish an appropriate noise level for a particular community, please refer to Chapter 7 of the Caltrans Handbook.

Public Utilities Code, Section 21659, "Hazards Near Airports Prohibited" prohibits structural hazards near airports. To ensure compliance with Federal Aviation Regulation, Part 77, "Objects Affecting Navigable Airspace," submission of a Notice of Proposed Construction or Alteration (Form 7460-1) to the Federal Aviation Administration (FAA) may be required. For further technical information, please refer to the FAA web site at http://www.faa.gov/aso/aso500/obst_eval.htm.

Section 11010 of the Business and Professions Code and Sections 1102.6, 1103.4, and 1353 of the Civil Code (http://www.leginfo.ca.gov/calaw.html) address buyer notification requirements for lands around airports. Any person who intends to offer land for sale or lease within an *airport influence area* is required to disclose that fact to the person buying the property.

Aviation plays a significant role in California's transportation system. This role includes the movement of people and goods within and beyond our State's network of over 250 airports. Aviation contributes nearly 9% of both total State employment (1.7 million jobs) and total State output ($110.7 billion) annually. These benefits were identified in a recent study, "Aviation in California: Benefits to Our Economy and Way of Life," prepared for the Division of Aeronautics which is available at http://www.dot.ca.gov/hq/planning/aeronaut/. Aviation improves mobility, generates tax revenue, saves

lives through emergency response, medical and fire fighting services, annually transports air cargo valued at over $170 billion and generates over $14 billion in tourist dollars, which in turn improves our economy and quality-of-life.

The protection of airports from incompatible land use encroachment is vital to California's economic future. Livermore Municipal Airport is an economic asset that should be protected through effective airport land use compatibility planning and awareness. Although the need for compatible and safe land uses near airports in California is both a local and a State issue, airport staff, airport land use commissions and airport land use compatibility plans are key to protecting an airport and the people residing and working in the vicinity of an airport.

These comments reflect the areas of concern to the Division of Aeronautics with respect to airport-related noise and safety impacts and regional airport land use planning issues. We advise you to contact our District 4 Office in Oakland at (510) 286-4444 concerning surface transportation issues.

Thank you for the opportunity to review and comment on this proposal. We look forward to reviewing the DEIR. If you have any questions, please call me at (916) 654-5314.

Sincerely,

Sandy Hesnard

SANDY HESNARD
Aviation Environmental Planner

c: State Clearinghouse
Alameda County ALUC
Livermore Municipal Airport
Joe Rodriguez-FAA

ALAMEDA COUNTY
CONGESTION MANAGEMENT AGENCY

1333 BROADWAY, SUITE 220 • OAKLAND, CA 94612 • PHONE: (510) 836-2560 • FAX: (510) 836-2185
E-MAIL: mail@accma.ca.gov • WEB SITE: accma.ca.gov

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Dolores Jaquez

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Mayor
Mark Green

Executive Director
Dennis R. Fay

June 14, 2006

Ms. Susan Frost
Principal Planner
City of Livermore Community Development Department
1052 S. Livermore Ave.
Livermore, CA 94550

SUBJECT: Comments on the Notice of Preparation for a Draft Environmental Impact Report (DEIR) for the El Charro Specific Plan

Dear Ms. Frost:

Thank you for the opportunity to comment on the Notice of Preparation (NOP) for a Draft Environmental Impact Report (EIR) for the El Charro Specific Plan. The Specific Plan area is approximately 260 acres and is bounded by I-580 on the north, El Charro Road on the west. The Specific Plan area contains approximately 165 acres of private land, 80 acres owned by the City of Livermore and 15 acres owned by Alameda County. The proposed project includes development of El Charro Specific Plan and related infrastructure improvements. The project area extends beyond the limits of the Specific Plan Area and includes the study corridors for an east/west major road extension. The study corridors for the road extension start at El Charro Road, cross the Specific Plan Area north of Arroyo Las Positas, cross the arroyo, and proceed either southeast until meeting the existing Jack London Boulevard south of the airport or east through the golf course until meeting the existing Airway Boulevard. The study corridors continue east to Kitty Hawk Boulevard and Isabel Avenue.

The ACCMA respectfully submits the following comments:

- The City of Livermore adopted Resolution No. 92-289 on August 10, 1992 establishing guidelines for reviewing the impacts of local land use decisions consistent with the Alameda County Congestion Management Program (CMP). Based on our review of the NOP, the proposed project appears to generate at least 100 p.m. peak hour trips over existing conditions. If this is the case, the CMP Land Use Analysis Program requires the City to conduct a traffic analysis of the project using the Countywide Transportation Demand Model for projection years 2010 and 2025 conditions. Please note the following paragraph as it discusses the responsibility for modeling.

  - The CMA Board amended the CMP on March 26th, 1998 so that local jurisdictions are now responsible for conducting the model runs themselves or through a consultant. The City of Livermore and the ACCMA have signed a Countywide Model Agreement on December 16, 1999. The Countywide model, updated incorporating ABAG's revisions to the employment data for Projections 2002, is available to the local jurisdictions for this purpose. However, before the model can be released to you or your consultant, a

letter must be submitted to the ACCMA requesting use of the model and describing the project. A copy of a sample letter agreement is available upon request.

- If the City chooses to use an alternative model other than the Alameda Countywide Model for traffic impact analysis, then for the purposes of the CMP Land Use Analysis Program, it should be demonstrated that the selected model output traffic volumes are conservative compared with the Alameda Countywide Model, with regard to the MTS roadways that are required to be analyzed. This comparison should be included in the environmental document.

- Potential impacts of the project on the Metropolitan Transportation System (MTS) need to be addressed. (See 2005 CMP Figures E-2 and E-3 and Figure 2). The DEIR should address all potential impacts of the project on the MTS roadway and transit systems. These include I-580, I-680, SR 84, East Stanley Blvd., Santa Rita Road, Holmes Street, North and South Livermore Avenue, 1st Street as well as BART and LAVTA. Potential impacts of the project must be addressed for 2010 and 2025 conditions.
  - Please note that the ACCMA does not have a policy for determining a threshold of significance for Level of Service for the Land Use Analysis Program of the CMP. Professional judgment should be applied to determine the significance of project impacts (Please see chapter 6 of 2005 CMP for more information).
  - In addition, the adopted 2005 CMP requires using 1985 Highway Capacity Manual for freeway capacity standards.

- The CMA requests that there be a discussion on the proposed funding sources of the transportation mitigation measures identified in the environmental documentation. The CMP establishes a Capital Improvement Program (See 2005 CMP, Chapter 7) that assigns priorities for funding roadway and transit projects throughout Alameda County. The improvements called for in the DEIR should be consistent with the CMP CIP. Given the limited resources at the state and federal levels, it would be speculative to assume funding of an improvement unless it is consistent with the project funding priorities established in the Capital Improvement Program (CIP) of the CMP, the federal Transportation Improvement Program (TIP), or the adopted Regional Transportation Plan (RTP). Therefore, we are requesting that the environmental documentation include a financial program for all roadway and transit improvements.

- The adequacy of any project mitigation measures should be discussed. On February 25, 1993 the CMA Board adopted three criteria for evaluating the adequacy of DEIR project mitigation measures:
  - Project mitigation measures must be adequate to sustain CMP service standards for roadways and transit;
  - Project mitigation measures must be fully funded to be considered adequate;
  - Project mitigation measures that rely on state or federal funds directed by or influenced by the CMA must be consistent with the project funding priorities established in the Capital Improvement Program (CIP) section of the CMP or the Regional Transportation Plan (RTP).

  It would be helpful to indicate in the DEIR the adequacy of proposed mitigation measures relative to these criteria. In particular, the DEIR should detail when proposed roadway or transit route improvements are expected to be completed, how they will be funded, and

what would be the effect on LOS if only the funded portions of these projects were assumed to be built prior to project completion.

- Potential impacts of the project on CMP transit levels of service must be analyzed. (See 2005 CMP, Chapter 4). Transit service standards are 15-30 minute headways for bus service and 3.75-15 minute headways for BART during peak hours. The DEIR should address the issue of transit funding as a mitigation measure in the context of the CMA's policies as discussed above.

- The DEIR should also consider demand-related strategies that are designed to reduce the need for new roadway facilities over the long term and to make the most efficient use of existing facilities (see 2005 CMP, Chapter 5). The DEIR could consider the use of TDM measures, in conjunction with roadway and transit improvements, as a means of attaining acceptable levels of service. Whenever possible, mechanisms that encourage ridesharing, flextime, transit, bicycling, telecommuting and other means of reducing peak hour traffic trips should be considered. The Site Design Guidelines Checklist may be useful during the review of the development proposal. A copy of the checklist is enclosed.

- For projects adjacent to state roadway facilities, the analysis should address noise impacts of the project. If the analysis finds an impact, then mitigation measures (i.e., soundwalls) should be incorporated as part of the conditions of approval of the proposed project. It should not be assumed that federal or state funding is available.

Thank you for the opportunity to comment on this Notice of Preparation. Please do not hesitate to contact me at 510/836-2560 ext. 24 if you require additional information.

Sincerely,

Saravana Suthanthira
Associate Transportation Planner

cc: file: CMP - Environmental Review Opinions - Responses - 2006

Attachment

Design Strategies Checklist
for the
Transportation Demand Management Element
of the
Alameda County CMP

The Transportation Demand Management Element included in the 2003 Congestion Management Program requires each jurisdiction to comply with the "" Required Program". This requirement can be satisfied in three ways: 1) adoption of "Design Strategies for encouraging alternatives to auto use through local development review" prepared by ABAG and the Bay Area Quality Management District; 2) adoption of new design guidelines that meet the individual needs of the local jurisdictions and the intent of the goals of the TDM Element or 3) evidence that existing policies and programs meet the intent of the goals of the TDM Element.

For those jurisdictions who have chosen to satisfy this requirement by Option 2 or 3 the following checklist has been prepared. In order to insure consistency and equity throughout the County, this checklist identifies the components of a design strategy that should be included in a local program to meet the minimum CMP conformity requirements. The required components are highlighted in bold type and are shown at the beginning of each section. A jurisdiction must answer Yes to each of the required components to be considered consistent with the CMP. Each jurisdiction will be asked to annually certify that it is complying with the TDM Element. Local jurisdictions will not be asked to submit the back-up information to the CMA justifying its response; however it should be available at the request of the public or neighboring jurisdictions.

Questions regarding optional program components are also included. You are encouraged but not required to answer these questions. ACTAC and the TDM Task Force felt that it might be useful to include additional strategies that could be considered for implementation by each jurisdiction.

CHECKLIST

Bicycle Facilities

Goal: To develop and implement design strategies that foster the development of a countywide bicycle program that incorporates a wide range of bicycle facilities to reduce vehicle trips and promote bicycle use for commuting, shopping and school activities. (Note: an example of facilities are bike paths, lanes or racks.)

Note: Bold type face indicates those components that must be included the "Required Program" in order to be found in compliance with the Congestion Management Program.

Local Responsibilities:

1a. In order to achieve the above goal, does your jurisdiction have design strategies or adopted policies that include the following:

1a.1 provides a system of bicycle facilities that connect residential and/or non-residential development to other major activity centers?

Yes No

1a.2 bicycle facilities that provide access to transit?

Yes No

1a.3 that provide for construction of bicycle facilities needed to fill gaps, (i.e. gap clure), not provided through the development review process?

Yes No

1a.4 that consider bicycle safety such as safe crossing of busy arterials or along bike trails?

Yes No

1a.5 that provide for bicycle storage and bicycle parking for (A) multi-family residential and/or (B) non-residential developments?

Yes No

1b. How does your jurisdiction implement these strategies? Please identify.

Zoning ordinance
Design Review
Standard Conditions of Approval
Capital Improvement Program
Specific Plan
Other

Pedestrian Facilities

Goal: To develop and implement design strategies that reduce vehicle trips and foster walking for commuting, shopping and school activities.

Local Responsibilities

2a. In order to achieve the above goal, does your jurisdiction have design strategies or adopted policies that incorporate the following:

2a.1 that provides reasonably direct, convenient, accessible and safe pedestrian connections to major activity centers, transit stops or hubs parks/open space and other pedestrian facilities?

Yes No

Note: Bold type face indicates those components that must be included the "Required Program" in order to be found in compliance with the Congestion Management Program.

2a.2 that provide for construction of pedestrian paths needed to fill gaps, (i.e. gap closure), not provided through the development process?

Yes No

2a.3 that include safety elements such as convenient crossing at arterials?

Yes No

2a.4 that provide for amenities such as lighting, street trees, trash receptacles that promote walking?

Yes No

2a.5 that encourage uses on the first floor that are pedestrian oriented, entrances that are conveniently accessible from the sidewalk or transit stops or other strategies that promote pedestrian activities in commercial areas?

Yes No

2b. How does your jurisdiction implement these strategies? Please identify.

Zoning ordinance
Design Review, such as ADA Accessibility Design Standards
Standard Conditions of Approval
Capital Improvement Program
Specific Plan
Other

Transit

Goal: To develop and implement design strategies in cooperation with the appropriate transit agencies that reduce vehicle trips and foster the use of transit for commuting, shopping and school activities.

Local Responsibilities

3a. In order to achieve the above goal, does your jurisdiction have design strategies or adopted policies that include the following:

3a.1 provide for the location of transit stops that minimize access time, facilitate intermodal transfers, and promote reasonably direct, accessible, convenient and safe connections to residential uses and major activity centers?

Yes No

Note: Bold type face indicates those components that must be included the "Required Program" in order to be found in compliance with the Congestion Management Program.

3a.2 provide for transit stops that have shelters or benches, trash receptacles, street trees or other street furniture that promote transit use?

Yes No

3a.3 that includes a process for including transit operators in development review?

Yes No

3a.4 provide for directional signage for transit stations and/or stops?

Yes No

3a.5 that include specifications for pavement width, bus pads or pavement structure, length of bus stops, and turning radii that accommodates bus transit?

Yes No

3.b How does your jurisdiction implement these strategies? Please identify.

Zoning ordinance
Design Review
Standard Conditions of Approval
Capital Improvement Program
Specific Plan
Other

Carpools and Vanpools

Goal: To develop and implement design strategies that reduce the overall number of vehicle trips and foster carpool and vanpool use.

Local Responsibilities:

4a. In order to achieve the above goal, does your jurisdiction have design strategies or adopted policies that include the following:

4a.1 For publicly owned parking garages or lots, are there preferential parking spaces and/or charges for carpools or vanpools?

Yes No

4a.2 that provide for convenient or preferential parking for carpools and vanpools in non-residential developments?

Yes No

Note: Bold type face indicates those components that must be included the "Required Program" in order to be found in compliance with the Congestion Management Program.

4.b How does your jurisdiction implement these strategies? Please identify.

Zoning ordinance
Design Review
Standard Conditions of Approval
Capital Improvement Program
Specific Plan
Other

Park and Ride

Goal: To develop design strategies that reduce the overall number of vehicle trips and provide park and ride lots at strategic locations.

Local Responsibilities:
5a. In order to achieve the above goal, does your jurisdiction have design strategies or adopted policies that include the following:

5a.1 promote park and ride lots that are located near freeways or major transit hubs?

Yes No

5a.2 a process that provides input to Caltrans to insure HOV by-pass at metered freeway ramps?

Yes No

5b. How does your jurisdiction implement these strategies? Please identify.

Zoning ordinance
Design Review
Standard Conditions of Approval
Capital Improvement Program
Specific Plan
Other

Note: Bold type face indicates those components that must be included the "Required Program" in order to be found in compliance with the Congestion Management Program.

ALAMEDA COUNTY
CONGESTION MANAGEMENT AGENCY

1333 BROADWAY, SUITE 220 • OAKLAND, CA 94612 • PHONE: (510) 836-2560 • FAX: (510) 836-2185
E-MAIL: mail@accma.ca.gov • WEB SITE: accma.ca.gov

AC Transit
Director
Dolores Jaquez

Alameda County
Supervisors
Nate Miley
Scott Haggerty
Vice Chairperson

City of Alameda
Mayor
Beverly Johnson

City of Albany
Mayor
Allan Maris

BART
Director
Thomas Blalock

City of Berkeley
Councilmember
Kriss Worthington

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City of Pleasanton
Mayor
Jennifer Hosterman

City of San Leandro
Mayor
Shelia Young

City of Union City
Mayor
Mark Green

Executive Director
Dennis R. Fay

June 14, 2006

Ms. Susan Frost
Principal Planner
City of Livermore Community Development Department
1052 S. Livermore Ave.
Livermore, CA 94550

SUBJECT: Supplemental Comments on the Notice of Preparation for a Draft Environmental Impact Report (DEIR) for the El Charro Specific Plan

Dear Ms. Frost:

This is a supplement to the CMA's response letter dated June 14, 2006 regarding the Notice of Preparation (NOP) for a Draft Environmental Impact Report (EIR) for the El Charro Specific Plan. The Specific Plan area is approximately 260 acres and is bounded by I-580 on the north, El Charro Road on the west. The Specific Plan area contains approximately 165 acres of private land, 80 acres owned by the City of Livermore and 15 acres owned by Alameda County. The proposed project includes development of El Charro Specific Plan and related infrastructure improvements. The project area extends beyond the limits of the Specific Plan Area and includes the study corridors for an east/west major road extension. The study corridors for the road extension start at El Charro Road, cross the Specific Plan Area north of Arroyo Las Positas, cross the arroyo, and proceed either southeast until meeting the existing Jack London Boulevard south of the airport or east through the golf course until meeting the existing Airway Boulevard. The study corridors continue east to Kitty Hawk Boulevard and Isabel Avenue.

In the I-580 Corridor Transit Study to extend BART service to Livermore, one of the rail alignments considered was along El Charro Road to downtown Livermore. We request that the environmental document discuss the impacts of the development on this alignment to bring BART to Livermore.

Thank you for the opportunity to comment on this Notice of Preparation. Please do not hesitate to contact me at 510/836-2560 ext. 24 if you require additional information.

Sincerely,

Saravana Suthanthira
Associate Transportation Planner

cc: file: CMP - Environmental Review Opinions - Responses - 2006

DEPARTMENT OF TRANSPORTATION
111 GRAND AVENUE
P. O. BOX 23660
OAKLAND, CA 94623-0660
PHONE (510) 286-5505
FAX (510) 286-5559
TTY (800) 735-2929

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June 13, 2006

ALA580825
SCH2006052112
ALA-580-16.70

Ms. Susan Frost
City of Livermore
1052 S. Livermore Avenue
Livermore, CA 94550

Dear Ms. Frost:

El Charro Specific Plan – Notice of Preparation

Thank you for including the California Department of Transportation (Department) in the environmental review for the proposed project. The comments presented below are based on the Notice of Preparation for the El Charro Specific Plan Draft Environmental Impact Report (DEIR). As lead agency, the City of Livermore is responsible for all project mitigation, including improvements to state highways. The project's fair share contribution, financing, scheduling, implementation responsibilities and lead agency monitoring should be fully discussed for all proposed mitigation measures. Any required roadway improvements should be completed prior to certificate of occupancy. While an encroachment permit is only required when the project involves work in the State Right of Way (ROW), the Department will not issue an encroachment permit until our concerns are adequately addressed. Therefore, we strongly recommend that the lead agency ensure resolution of the Department's concerns prior to submittal of an encroachment permit application. Further comments will be provided during the encroachment permit process; see the end of this letter for more information regarding encroachment permits.

The Department is primarily concerned with impacts to the State Highway system. Specifically, the detailed Traffic Impact Analysis (TIA) should include, but not be limited to the following:

1. Information on the project's traffic impacts in terms of trip generation, distribution, and assignment. The assumptions and methodologies used in compiling this information should be addressed.

2. Average Daily Traffic (ADT) and AM and PM peak hour volumes on all significantly affected streets and highways, including crossroads and controlling intersections.

3. Schematic illustration of the traffic conditions for: 1) existing, 2) existing plus project, and 3) cumulative for the intersections in the project area.

4. Calculation of cumulative traffic volumes should consider all traffic-generating developments, both existing and future, that would affect the State Highway facilities being evaluated.

5. Mitigation measures should consider highway and non-highway improvements and services. Special attention should be given to the development of alternate solutions to circulation problems that do not rely on increased highway construction.

6. All mitigation measures proposed should be fully discussed, including financing, scheduling, implementation responsibilities, and lead agency monitoring.

We encourage the City of Livermore to coordinate preparation of the study with our office, and we would appreciate the opportunity to review the scope of work. Please see the Caltrans' *"Guide for the Preparation of Traffic Impact Studies"* at the following website for more information:
http://www.dot.ca.gov/hq/traffops/developserv/operationalsystems/reports/tisguide.pdf

We look forward to reviewing the TIA, including Technical Appendices, and Draft Environmental Impact Report. Please send two copies to:

Lisa Carboni
Office of Transit and Community Planning
Department of Transportation, District 4
P.O. Box 23660
Oakland, CA 94623-0660

Please be advised that any work or traffic control within the State right-of-way (ROW) will require an encroachment permit from the Department. To apply for an encroachment permit, submit a completed encroachment permit application, environmental documentation, and five (5) sets of plans (in metric units) which clearly indicate State ROW to the following address:

Office of Permits
California Department of Transportation, District 04
P. O. Box 23660
Oakland, Ca 94623-0660

Should you have any questions regarding this letter, please call Lisa Carboni of my staff at (510) 622-5491.

Sincerely,

for TIMOTHY C. SABLE
District Branch Chief
IGR/CEQA

c: Scott Morgan (State Clearinghouse)

THE CITY OF
PLEASANTON

June 22, 2006

RECEIVED
JUN 23 2006
PLANNING DIVISION

RECEIVED
JUN 23 2006
PLANNING DIVISION

Ms. Susan Frost, Principal Planner
City of Livermore
1052 South Livermore Avenue
Livermore, CA 94550

Re: Notice of Preparation – EIR for El Charro Specific Plan

Dear Susan:

Thank you for the opportunity to provide comment on the scope of the Environmental Impact Report for the El Charro Specific Plan. I have reviewed the Notice of Preparation and attended the scooping meeting held on June 8, 2006, and have comments on the following topics:

- **Project Location:** Page 4 of the NOP states that land to the west of the Specific Plan Area is undeveloped unincorporated private land under the jurisdiction of Alameda County. The EIR should note that this property is within the City of Pleasanton's Sphere of Influence.

- **Visual Analysis:** The EIR should address impacts of the project on views from I-580. In its undeveloped state, the site provides a visual community separator and a sense of open space. While the City of Pleasanton recognizes that development of this site will change this, we support the Livermore General Plan goal of preserving views to ridgelines and hillsides.

- **Hydrology and Flooding:** The NOP notes that portions of the Specific Plan area are within the flood plain of the Arroyo Las Positas, and that development of this area will likely require construction of an interim bypass channel and detention basin. The EIR should provide a thorough analysis of the impacts of the project and of the drainage improvements on the Staples Ranch area and other properties in the Pleasanton Planning Area.

- **Traffic and Circulation:** The EIR should address existing and future quarry traffic and the interaction of trucks and passenger vehicles in the vicinity of the project site. The EIR and the Specific Plan should address the ultimate configuration of El Charro given potential development both east and west of El Charro.

As you are aware, the City of Pleasanton is currently reviewing a proposed amendment to the Stoneridge Drive Specific Plan and a development application which involves the

P. O. Box 520, Pleasanton, CA 94566-0802 200 Old Bernal Avenue

Planning & Community Development (925) 931-5600 Fax: 931-5483
Building Inspection (925) 931-5300 Fax: 931-5470
Utility Billing (925) 931-5425 Fax: 931 5481
Business License (925) 931 5440 Fax: 931-5481

Staples Ranch property adjacent to the subject site, on the west side of El Charro Road. We look forward to consulting with the City of Livermore on that proposal and working together to coordinate improvements in the El Charro Road area. Please contact me if you have any questions or comments on the substance of this letter.

Sincerely,

Janice E. Stern, AICP
Principal Planner
(925) 931-5606
jstern@ci.pleasanton.ca.us

c. Mike Tassano, Senior Traffic Engineer

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ALAMEDA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT
100 NORTH CANYONS PARKWAY, LIVERMORE, CA 94551 PHONE (925) 454-5000

June 21, 2006

RECEIVED
JUN 26 2006
PLANNING DIVISION

Ms. Susan Frost, Principal Planner
City of Livermore
1052 S. Livermore Ave.
Livermore, CA 94550

Re: Notice of Preparation of a Draft Environmental Impact Report for the El Charro Specific Plan

Dear Ms. Frost,

Zone 7 has reviewed the referenced CEQA document in the context of Zone 7's mission to provide drinking water, non-potable water for agriculture and irrigated turf, flood protection, and groundwater and stream management within the Livermore-Amador Valley. Our comments are as follows.

On page 9, the second sentence in the second paragraph states that "Cope Lake is currently being used for groundwater recharge." This is an inaccurate statement. Cope Lake is presently inactive and cannot be used for groundwater recharge due to the thickness of silt on the bottom of the lake. However, Zone 7 is currently studying the best use of Cope Lake. In addition, Zone 7 will begin developing the Chain of Lakes Master Plan this summer. The Chain of Lakes Master Plan will be a comprehensive master plan for the operation and maintenance of the entire Chain of Lakes and incorporating it into Zone 7's water supply, flood control and/or untreated water programs. The plan will integrate the important elements of the Management Plan for Lakes H and I, and Cope Lake and include such aspects as geotechnical investigations and recommendations, hydraulic structures, improvements and ancillary facilities, as well as suggested operations and maintenance. Zone 7 requests that the City consider and consult with Zone 7 on the potential impacts of future land uses in the El Charro Specific Plan, as they may impact the Chain of Lakes and its future uses.

Table 1 shows Zone 7 as one of the agencies that the City will be requesting authorization for alteration of portions of the Arroyo Las Positas. In addition to this, the City should consult with Zone 7 to ensure the Specific Plan is compatible with the goals and objectives of Zone 7's Streams Management Master Plan. Recent findings in the development of Zone 7's Stream Management Master Plan (SMMP) indicate the need for consideration and analysis of the impacts of development to the regional flood control system and the identification of appropriate mitigations. Therefore, during the interim period, before full implementation of the regional water storage plan contemplated by the SMMP, the City should consult with Zone 7 prior to undertaking the impact and mitigation analysis. Future improvements to the flood control system are planned, thus, it is imperative that the City provide a technical analysis to identify any

impacts to the regional flood control system that may occur downstream of proposed project in the interim period.

Zone 7's Cross Valley transmission pipeline is located along the existing Freisman Road and crosses the proposed Specific Plan area in an east/westerly direction. Zone 7 has a 25-foot exclusive water line easement. Any development above the transmission line and within the easement will need to be designed to minimize potential impacts upon and/or access to the transmission line. Development would include but not limited to irrigation piping and any planting in which roots would pose a potential obstruction to the pipeline. No structures will be allowed within this easement. Furthermore, on Table 1, an encroachment permit and approval for any work done within Zone 7's water line easement is required prior to construction. Please update Table 1 accordingly.

We appreciate the opportunity to comment on this document. If you have any questions or comments, please feel free to contact me at your earliest convenience by phone at (925) 454-5036 or via email at mlim@zone7water.com.

Sincerely,

Mary Lim
Environmental Services Program Manager

cc: Karla Nemeth, Environmental & Public Affairs Manager, Zone 7
Jim Horen, Principal Engineer, Zone 7
John Koltz, Senior Engineer, Zone7
Joe Seto, Senior Engineer, Zone 7
Matt Katen, Senior Engineer, Zone 7
Jeff Tang, Associate Civil Engineer, Zone 7
Carol Mahoney, Assistant Engineer, Zone 7

CITY OF DUBLIN

100 Civic Plaza, Dublin, California 94568 Website: http://www.ci.dublin.ca.us

June 29, 2006

Susan Frost
City of Livermore
1052 South Livermore Avenue
Livermore, CA 94550

Subject: El Charro Specific Plan – Notice of Preparation of Draft Environmental Impact Report for the El Charro Specific Plan

Dear Ms. Frost:

Thank you for the opportunity to comment on the City of Livermore's Notice of Preparation (NOP) of a Draft Environmental Impact Report (DEIR) for the El Charro Specific Plan. The project area contains approximately 260 acres of land bounded by Interstate 580 to the north, El Charro Road to the west, mining quarries and undeveloped quarry land to the south, and Arroyo Las Positas, and the Livermore Municipal Golf Course to the east. The proposed project would include amendments to the Livermore General Plan, creation of the El Charro Specific Plan, and development plans for retail commercial uses, including an alternative use as a church facility on land owned by Crosswinds Church, and a specific project for retail development on approximately 57 acres.

The City of Dublin respectfully submits the following comments:

1. The City of Dublin supports the City of Livermore's efforts to prepare a new traffic analysis. This traffic analysis should be coordinated with the Fallon Village traffic analysis. A copy of this traffic analysis was previously forwarded to Bob Vinn with the City of Livermore.

2. The traffic analysis for the proposed El Charro Specific Plan should analyze the City of Livermore's fair share of the cost to construct the "Phase I" I-580/Fallon Road interchange improvements based on the proportionate use of the improved interchange by project trips.

3. The development process of the El Charro Specific Plan should take into account the on-going efforts among the Cities of Dublin, Livermore and Pleasanton to devise a funding plan for the "Phase II" I-580/Fallon Road Interchange improvements by sharing the improvement costs proportionately among the three cities.

Thank you for the opportunity to comments on this NOP. Please feel free to contact me at 925-833-6610 if you require additional information. We look forward to reviewing the DEIR when it becomes available.

Sincerely,

Jeff Baker
Associate Planner

cc: City of Dublin City Council
Richard Ambrose, City Manager
Jeri Ram, Community Development Director
Mary Jo Wilson, Planning Manager
Melissa Morton, Public Works Director.

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Appendix B

Air Quality Technical Data

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Appendix B

Air Quality Technical Data

Carbon Monoxide Hot Spot Analysis

The estimated impact of the El Charro Specific Plan and proposed other improvements (proposed Project) on ambient carbon monoxide (CO) concentrations near intersections is described in this section. The methodology employed in this analysis is consistent with the recommendations listed in the *Transportation Project-Level Carbon Monoxide Protocol* (CO Protocol) and the BAAQMD CEQA Guidelines. In this section, historical trends of ambient CO concentrations and CO emission factors will be presented along with the results of a dispersion modeling analysis conducted near a congested project intersection.

Carbon Monoxide Regulations and Historical Overview

CO is a colorless, odorless, tasteless gas that is a byproduct of incomplete combustion of any carbonaceous fuel. CO is designated as a criteria pollutant by the EPA and has a national ambient air quality standard of 9 ppm for an 8-hour averaging period and 35 ppm for a 1-hour averaging period. The California ambient air quality standard for CO for a 1-hour averaging period is 20 ppm, which is significantly more strict than the corresponding federal standard.

Ambient concentrations of CO have decreased significantly over the past four decades in the San Francisco Bay Area. Figure B-1 presents the average of the three highest 1-hour averaged CO concentrations measured from 1968 to 2005 in downtown San Francisco. As shown in Figure B-1, CO concentrations are rapidly decreasing with a peak value of 14.5 in 1968 and a minimum value of 2.3 ppm in 2002. Note that the CO concentrations shown in Figure B-1 are the average of the three *highest* 1-hour measurements; *average* CO concentrations are expected to be considerably lower.

The decreases in ambient CO concentrations are primarily attributed to mobile source emission control technology improvements that result in lower CO emissions from vehicles. Future ambient CO concentrations are expected to decrease further provided that reductions in vehicular CO emissions are greater

than increases in overall vehicle miles traveled (VMT) in the San Francisco Bay Area.

Emission Factor Analysis

The California Air Resources Board (ARB) emission factor model EMFAC2002 version 2.2 was used to determine CO emission factors appropriate for air quality modeling in the Project Area. This section documents the assumptions, model inputs, and results of the EMFAC analysis.

EMFAC Inputs

Alameda County was selected as the geographical area for this analysis because all vehicular activity associated with the project is contained within Alameda County. The EMFAC model requires the specification of the month or season for emission factor (EF) analysis. Since ambient concentrations of CO tend to be higher during the colder months, EF factors for this analysis were specified for the winter time period in EMFAC.

Two design periods were considered for this analysis. *Baseline* conditions refer to the 2008 vehicle fleet whereas *proposed* or *design* refer to a 2030 vehicle fleet. Consistent with EMFAC default inputs, the 2008 fleet was composed of vehicles with model years between 1965 and 2008, and the 2030 fleet was composed of vehicles with model years between 1985 and 2030. The default inspection and maintenance (I/M) specifications were used.

The EMFAC documentation indicates that the temperature and relative humidity specification for EF modeling should be consistent with the methodology outlined in Section B.3.3 of the CO Protocol. The CO Protocol indicates that the temperature used for EF analysis should be the January mean minimum temperature (JMMT) plus a correction factor of zero to 10°F. According to historical data available at Weather.com (2006) for Livermore, California, the JMMT for the study area is 37°F. The CO Protocol indicates that a temperature correction factor of +5°F is appropriate for EF modeling for morning and evening time modeling periods. Consequently, a design temperature of 42°F (37+5) was used for this study. Based on the EMFAC documentation, a relative humidity (RH) of 20% was selected for this analysis.

EMFAC Results

CO EFs for the years 2008 (baseline conditions) and 2030 (future design year) for an Alameda County vehicle fleet with average speeds ranging from 0 (idling) to 65 mph are presented in Table B-1. Table B-1 lists the EFs for six vehicle classes, including light duty auto (LDA), light duty truck (LDT) , medium duty

Table B-1. Carbon Monoxide (CO) Emission Factors for Baseline (2008) and Future Design (2030) Year for Various Vehicle Classes and Average Operating Speeds.

	CO Emission Factor (grams/mile)[1]													
	2008							2030						
Speed mph	LDA	LDT	MDT	HDT	UBUS	MCY	All	LDA	LDT	MDT	HDT	UBUS	MCY	All
1	8.52	12.91	11.08	20.70	37.62	50.52	11.06	1.08	1.71	2.24	4.19	11.36	27.97	1.73
2	8.52	12.91	11.08	20.70	37.62	50.52	11.06	1.08	1.71	2.24	4.19	11.36	27.97	1.73
3	8.36	12.63	10.86	20.70	37.62	50.52	10.87	1.07	1.69	2.22	4.19	11.36	27.97	1.72
4	8.05	12.09	10.44	20.70	37.62	50.52	10.51	1.05	1.66	2.18	4.19	11.36	27.97	1.69
5	7.77	11.59	10.05	20.70	37.62	50.52	10.19	1.03	1.62	2.14	4.19	11.36	27.97	1.67
6	7.50	11.12	9.60	19.05	34.40	48.39	9.73	1.01	1.59	2.08	3.87	10.37	26.95	1.61
7	7.25	10.69	9.18	17.57	31.52	46.45	9.31	0.99	1.56	2.03	3.58	9.50	26.01	1.55
8	7.02	10.29	8.79	16.23	28.95	44.67	8.92	0.97	1.52	1.99	3.32	8.71	25.15	1.50
9	6.80	9.92	8.44	15.03	26.65	43.05	8.57	0.95	1.49	1.94	3.08	8.02	24.36	1.45
10	6.59	9.57	8.11	13.94	24.58	41.57	8.24	0.93	1.46	1.90	2.87	7.39	23.62	1.41
15	5.73	8.14	6.78	9.89	17.01	35.97	6.90	0.85	1.33	1.70	2.06	5.09	20.77	1.22
20	5.07	7.09	5.84	7.39	12.46	32.73	5.96	0.78	1.21	1.54	1.55	3.72	18.97	1.08
25	4.56	6.32	5.17	5.82	9.66	31.32	5.27	0.71	1.11	1.40	1.22	2.87	17.99	0.97
30	4.16	5.74	4.67	4.82	7.93	31.52	4.77	0.66	1.02	1.29	1.01	2.35	17.73	0.89
35	3.85	5.32	4.32	4.20	6.89	33.36	4.41	0.61	0.94	1.19	0.88	2.04	18.21	0.81
40	3.62	5.03	4.08	3.86	6.33	37.17	4.16	0.56	0.87	1.10	0.80	1.87	19.56	0.76
45	3.45	4.85	3.95	3.73	6.15	43.61	4.02	0.52	0.81	1.02	0.76	1.81	22.05	0.71
50	3.35	4.80	3.92	3.80	6.33	53.89	3.98	0.49	0.76	0.96	0.76	1.86	26.20	0.67
55	3.33	4.90	4.02	4.08	6.89	70.16	4.07	0.46	0.71	0.90	0.80	2.03	32.92	0.65
60	3.41	5.18	4.29	4.62	7.94	96.27	4.33	0.43	0.67	0.86	0.89	2.33	43.83	0.64
65	3.62	5.74	4.80	5.51	9.67	139.21	4.84	0.41	0.64	0.82	1.03	2.84	61.92	0.65

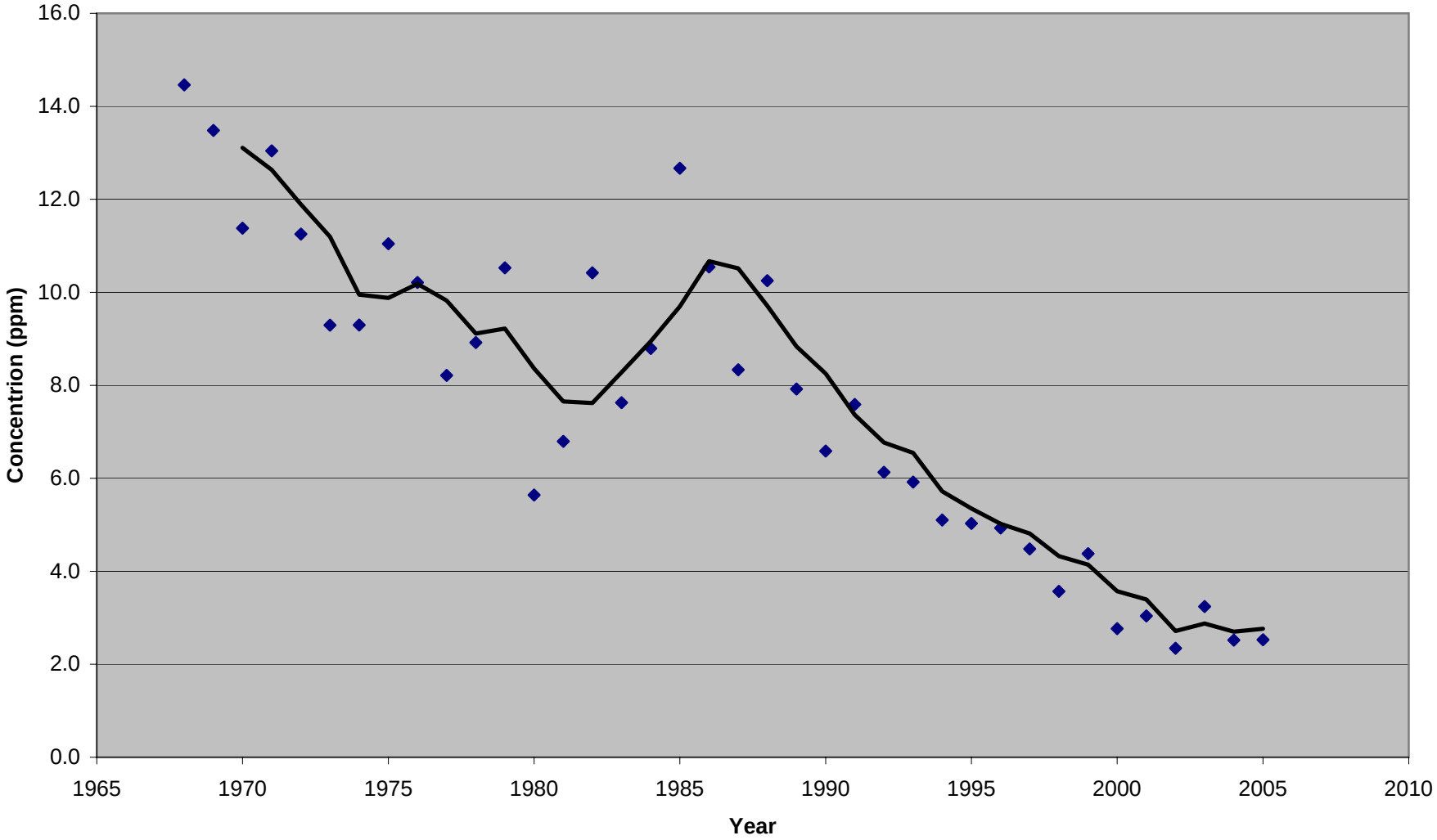
Notes:

[1] Vehicle class abbreviations: LDA, light duty auto; LDT, light duty truck; MDT, medium duty truck; HDT, heavy duty truck (HDT); UBUS, buses; MCY, motorcycles.

Source: EMFAC2002 Version 2.2.

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Figure B-1. Average of the 3 highest 1-hour averaged Carbon Monoxide concentrations per year collected in downtown San Francisco



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truck (MDT), heavy duty truck (HDT), buses (UBUS), and motorcycles (MCY). In addition to the six specified vehicle classes, a composite average CO EF is shown based on EMFAC's recommended VMT distribution for an Alameda County vehicle fleet. Fleet-averaged emission factors for CO, reactive organic gases (ROG), oxides of nitrogen (NO_x), and particulate matter 10 microns or less in diameter (PM10) as a function of average vehicle speed are presented in tabular form in Table B-2 and graphically in Figures B-2 to B-5.

CALINE Dispersion Analysis

The CALINE4 model was selected to simulate pollutant dispersion near intersections impacted by Project-related activities. CALINE4 was specifically designed to simulate pollutant dispersion from roadways and is recommended in the CO Protocol as the preferred model for assessing CO impacts near transportation facilities. The CALINE4 model requires the specification of the roadway geometry, vehicular flow rates, aggregate emission factors, receptor locations, and local meteorology to determine pollutant concentrations near intersections.

The intersection of Santa Rita Road and Stoneridge Drive was selected for microscale analysis in this study since, as shown in Table B-3, this intersection has the greatest modeled delay of all intersections impacted by the Project for all time periods and configurations. The Santa Rita/Stoneridge intersection has five lanes approaching the intersection in each direction with at least two dedicated turn lanes per approach. For this analysis, all traffic lanes are assumed to be a standard width of 12 feet. It is assumed that there are 3 lanes exiting the intersection in each direction. Furthermore, it is assumed that there are no roadway medians or shoulders. Because medians and shoulders tend to separate receptors from emission sources, excluding medians and shoulders in this analysis will result in a conservative analysis. Because an idealized, conservative, intersection was used in this analysis, slight changes in roadway geometry will not affect the microscale modeling performed in this study.

Table B-3. The Worst Intersection Delay Time Associated with Each El Charro Project Configuration for 2008 and 2030.

Year	Time	Configuration	Worst Delay (seconds)	Intersection Associated with Worst Delay
2008	a.m.	Baseline	71.5	W. Jack London and N. Murrieta Boulevards
2008	p.m.	Baseline	48.4	W. Jack London and N. Murrieta Boulevards
2008	a.m.	Phase I	67	W. Jack London and N. Murrieta Boulevards
2008	p.m.	Phase I	61.1	W. Jack London and N. Murrieta Boulevards
2008	a.m.	Jack London Boulevard Extension	94.7	I-580 and Quarry
2008	p.m.	Jack London Boulevard Extension	115.5	W. Jack London and N. Murrieta Boulevards
2008	a.m.	Airway Boulevard Extension	74.5	W. Jack London and N. Murrieta Boulevards
2008	p.m.	Airway Boulevard Extension	102.6	I-580 and Quarry
2030	a.m.	No project	87.8	Bemal Avenue. and Stanley Boulevard
2030	p.m.	No project	232	Stoneridge Drive and Santa Rita Road
2030	a.m.	Jack London Boulevard Extension	102.8	Stoneridge Drive and Santa Rita Road
2030	p.m.	Jack London Boulevard Extension	226.5	Stoneridge Drive and Santa Rita Road
2030	a.m.	Airway Boulevard Extension	146.2	Airway Boulevard east of Kitty Hawk Road
2030	p.m.	Airway Boulevard Extension	257.7	Stoneridge Drive and Santa Rita Road

Based on the CALINE4 manual's guidance for receptor placement, receptors were modeled 3 meters (10 feet) from each corner of the intersection at an elevation of 1.8 meters (5.9 feet). To ensure that the hot spot modeling resulted in the most conservative estimates of CO concentrations near the intersection, it was assumed that all moving vehicles average 1 mph. Obviously, any real vehicle fleet would move substantially faster than 1 mph; however, since CO EFs are inversely proportional to vehicle speeds at typical urban driving speeds, the selection of 1 mph ensures that the greatest CO EF is selected for this analysis, thereby ensuring a conservative analysis. As shown in Table B-2, the CO EF for an Alameda composite fleet is 11.06 and 1.73 grams/mile for 2008 and 2030, respectively.

Table B-2. Alameda County Criteria Pollutants and Precursors for Baseline (2008) and Future Design (2030) Year for Various Vehicle Classes and Average Operating Speeds for a Composite Vehicle Fleet.

Speed MPH	CO 2008 g/mile	CO 2030 g/mile	CO 2008 g/hour	CO 2030 g/hour	ROG 2008 g/mile	ROG 2030 g/mile	ROG 2008 g/hour	ROG 2030 g/hour	NO_x 2008 g/mile	NO_x 2030 g/mile	NO_x 2008 g/hour	NO_x 2030 g/hour	PM10 2008 g/mile	PM10 2030 g/mile	PM10 2008 g/hour	PM10 2030 g/hour
1	11.06	1.73	11.06	1.73	1.261	0.192	1.26	0.19	2.537	0.441	2.54	0.44	0.144	0.125	0.14	0.13
2	11.06	1.73	22.11	3.46	1.261	0.192	2.52	0.38	2.537	0.441	5.07	0.88	0.144	0.125	0.29	0.25
3	10.87	1.72	32.60	5.15	1.218	0.185	3.65	0.56	2.517	0.438	7.55	1.31	0.14	0.121	0.42	0.36
4	10.51	1.69	42.06	6.77	1.138	0.174	4.55	0.70	2.479	0.432	9.92	1.73	0.134	0.113	0.54	0.45
5	10.19	1.67	50.93	8.34	1.066	0.164	5.33	0.82	2.443	0.427	12.22	2.14	0.129	0.107	0.65	0.54
6	9.73	1.61	58.37	9.65	0.986	0.152	5.92	0.91	2.353	0.41	14.12	2.46	0.122	0.1	0.73	0.60
7	9.31	1.55	65.17	10.87	0.915	0.14	6.41	0.98	2.27	0.395	15.89	2.77	0.115	0.094	0.81	0.66
8	8.92	1.50	71.38	12.01	0.85	0.13	6.80	1.04	2.192	0.38	17.54	3.04	0.109	0.088	0.87	0.70
9	8.57	1.45	77.09	13.09	0.791	0.121	7.12	1.09	2.12	0.367	19.08	3.30	0.103	0.083	0.93	0.75
10	8.24	1.41	82.35	14.09	0.738	0.113	7.38	1.13	2.054	0.355	20.54	3.55	0.098	0.079	0.98	0.79
15	6.90	1.22	103.53	18.35	0.536	0.082	8.04	1.23	1.784	0.306	26.76	4.59	0.079	0.062	1.19	0.93
20	5.96	1.08	119.18	21.66	0.408	0.062	8.16	1.24	1.6	0.272	32.00	5.44	0.066	0.052	1.32	1.04
25	5.27	0.97	131.85	24.33	0.324	0.049	8.10	1.23	1.479	0.25	36.98	6.25	0.057	0.045	1.43	1.13
30	4.77	0.89	143.16	26.55	0.27	0.04	8.10	1.20	1.407	0.237	42.21	7.11	0.052	0.041	1.56	1.23
35	4.41	0.81	154.28	28.49	0.234	0.035	8.19	1.23	1.377	0.231	48.20	8.09	0.048	0.038	1.68	1.33
40	4.16	0.76	166.36	30.24	0.212	0.031	8.48	1.24	1.387	0.232	55.48	9.28	0.045	0.036	1.80	1.44
45	4.02	0.71	180.68	31.91	0.201	0.029	9.05	1.31	1.437	0.241	64.67	10.85	0.043	0.035	1.94	1.58
50	3.98	0.67	198.95	33.70	0.198	0.029	9.90	1.45	1.534	0.258	76.70	12.90	0.042	0.035	2.10	1.75
55	4.07	0.65	223.91	35.75	0.205	0.03	11.28	1.65	1.689	0.285	92.90	15.68	0.042	0.035	2.31	1.93
60	4.33	0.64	259.92	38.34	0.223	0.032	13.38	1.92	1.923	0.328	115.38	19.68	0.043	0.036	2.58	2.16
65	4.84	0.65	314.60	41.99	0.253	0.036	16.45	2.34	2.268	0.393	147.42	25.55	0.044	0.038	2.86	2.47

Note:

g/mile = grams per mile

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Table B-4. Peak Hourly Vehicle Flow Rates at the Intersection of Santa Rita and Stoneridge Road for Multiple Project Configurations

		Northbound				Westbound				Southbound				Eastbound				Totals	
Year	Time	L	Th	R	D	L	Th	R	D	L	Th	R	D	L	Th	R	D	In	Out
2008 No Project—Baseline	a.m.	640	1,531	91	1,823	208	241	267	1,193	154	1,584	312	2,152	25	122	360	367	10,703	8,808
2008 No Project—Baseline	p.m.	302	1,839	161	2,210	221	332	306	917	217	1,098	283	1,903	65	331	584	709	10,769	9,176
2008 Phase I Project	a.m.	635	1,579	91	1,874	208	241	268	1,190	154	1,608	314	2,169	27	123	353	368	10,834	8,897
2008 Phase I Project	p.m.	288	1,943	175	2,414	221	332	307	912	254	1,103	292	1,908	164	331	584	760	11,228	9,582
2008 Full Project w/ Jack London Boulevard Extension	a.m.	635	1,517	91	1,810	206	241	267	1,189	154	1,562	313	2,116	26	123	348	368	10,598	8,723
2008 Full Project w/ Jack London Boulevard Extension	p.m.	262	1,981	142	2,457	221	332	311	902	239	1,137	308	1,942	165	331	584	712	11,314	9,641
2008 Full Project w/ Airway Boulevard Extension	a.m.	635	1,600	91	1,898	206	241	270	1,190	154	1,616	314	2,175	28	122	353	367	10,893	8,934
2008 Full Project w/ Airway Boulevard Extension	p.m.	260	2,053	150	2,529	221	332	311	915	268	1,127	323	1,932	165	331	584	749	11,501	9,787
2030 No Project—Baseline	a.m.	635	1,330	146	1,991	983	269	644	1,215	887	1,504	311	2,697	17	434	210	1,467	13,273	12,629
2030 No Project—Baseline	p.m.	205	1,330	1,143	2,789	243	909	1,299	1,314	604	1,005	200	1,832	160	367	584	2,114	13,984	13,420
2030 Full Project w/ Jack London Boulevard Extension	a.m.	635	1,330	248	2,061	1,000	244	714	1,190	920	1,618	311	2,839	17	524	221	1,692	13,872	13,351
2030 Full Project w/ Jack London Boulevard Extension	p.m.	205	1,586	882	3,025	301	1,064	1,279	1,469	723	1,005	200	1,890	160	618	584	2,223	14,991	14,541

Table B-4. Continued

		Northbound				Westbound				Southbound				Eastbound				Totals	
Year	Time	L	Th	R	D	L	Th	R	D	L	Th	R	D	L	Th	R	D	In	Out
2030 Full Project w/ Airway Boulevard Extension	a.m.	635	1,330	267	1,884	1,220	244	537	1,190	914	1,438	311	2,868	17	458	210	1,639	13,523	12,930
2030 Full Project w/ Airway Boulevard Extension	p.m.	205	1,402	1,098	2,991	308	1,034	1,429	1,439	678	1,005	200	1,897	160	401	584	2,177	14,831	14,303

Notes:

L=Left

Th=Through

R=Right

D=Depart

In=Inbound

Out=Outbound

Table B-5. Maximum CO Impacts 3 Meters Away from the Intersection of Santa Rita Road and Stoneridge Drive for Multiple Project Configurations (all concentrations in ppm).

		Maximum 3 Meter Conc.[2]		Background Conc.[3]		Combined Conc.		Most Restrictive Standard	
Year	Time	1-hour	8-hour[2]	1-hour	8-hour[2]	1-hour	8-hour[2]	1-hour	8-hour[2]
2008 No Project—Baseline	AM	5.1	3.6	3.7	1.94	8.8	5.5	20	9
2008 No Project—Baseline	PM	5.1	3.6	3.7	1.94	8.8	5.5	20	9
2008 Phase I Project	AM	5.2	3.6	3.7	1.94	8.9	5.6	20	9
2008 Phase I Project	PM	5.4	3.8	3.7	1.94	9.1	5.7	20	9
2008 Full Project w/ Jack London Boulevard Extension	AM	5.0	3.5	3.7	1.94	8.7	5.4	20	9
2008 Full Project w/ Jack London Boulevard Extension	PM	5.5	3.9	3.7	1.94	9.2	5.8	20	9
2008 Full Project w/ Airway Boulevard Extension	AM	5.2	3.6	3.7	1.94	8.9	5.6	20	9
2008 Full Project w/ Airway Boulevard Extension	PM	5.6	3.9	3.7	1.94	9.3	5.9	20	9
2030 No Project—Baseline	AM	0.9	0.6	3.7	1.94	4.6	2.6	20	9
2030 No Project—Baseline	PM	1.0	0.7	3.7	1.94	4.7	2.6	20	9
2030 Full Project w/ Jack London Boulevard Extension	AM	0.9	0.6	3.7	1.94	4.6	2.6	20	9
2030 Full Project w/ Jack London Boulevard Extension	PM	1.0	0.7	3.7	1.94	4.7	2.6	20	9
2030 Full Project w/ Airway Boulevard Extension	AM	1.0	0.7	3.7	1.94	4.7	2.6	20	9
2030 Full Project w/ Airway Boulevard Extension	PM	1.0	0.7	3.7	1.94	4.7	2.6	20	9
Maximum		**5.6**	**3.9**			**9.3**	**5.9**		

Notes:

[1] Determined with a standard 0.7 persistence factor.

[2] Incremental contribution from the intersection.

[3] Maximum measured concentration from 2003–2005.

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Table B-6: Daily Emissions of Criteria Pollutants and Their Precursors from Transportation Activities for Various El Charro Time Periods and Scenarios (Summary for Livermore Study Region Only)

				Emission Factors (g/mile)				Daily Emissions (pounds)				Daily Emissions above Baseline (pounds)			
Scenario	VMT[1]	VHT[2]	Speed[3]	CO	ROG	NO_x	PM10	CO	ROG	NO_x	PM10	CO	ROG	NO_x	PM10
2008 No Project—Baseline	5,692,576	181,744	31.4	4.77	0.27	1.41	0.05	59,889	3,388	17,658	653	–	–	–	–
2008 Phase I Project	5,723,535	184,205	31.1	4.77	0.27	1.41	0.05	60,214	3,407	17,754	656	326	18	96	4
2008 Full Project w/ Jack London Boulevard Extension	5,766,497	181,682	31.7	4.77	0.27	1.41	0.05	60,666	3,432	17,887	661	778	44	229	8
2008 Full Project w/ Airway Boulevard Extension	5,772,243	182,632	31.6	4.77	0.27	1.41	0.05	60,727	3,436	17,905	662	838	47	247	9
2008 Average	5,738,713	182,566	31.5	4.77	0.27	1.41	0.05	60,374	3,416	17,801	658	–	–	–	–
2030 No Project—Baseline	8,127,935	300,431	27.1	0.97	0.05	0.25	0.05	17,435	878	4,480	806	–	–	–	–
2030 Full Project w/ Jack London Boulevard Extension	8,239,860	315,007	26.1	0.97	0.05	0.25	0.05	17,675	890	4,541	817	240	12	62	11
2030 Full Project w/ Airway Boulevard Extension	8,226,170	320,367	25.7	0.97	0.05	0.25	0.05	17,646	889	4,534	816	211	11	54	10
2030 Average	8,197,988	311,935	26.29	0.97	0.05	0.25	0.05	17,585	886	4,518	813	–	–	–	–
% Change from 2008 to 2030	43%	71%	-16%	-80%	-82%	-82%	-13%	-71%	-74%	-75%	24%	–	–	–	–

Notes:

[1] Vehicle miles of travel

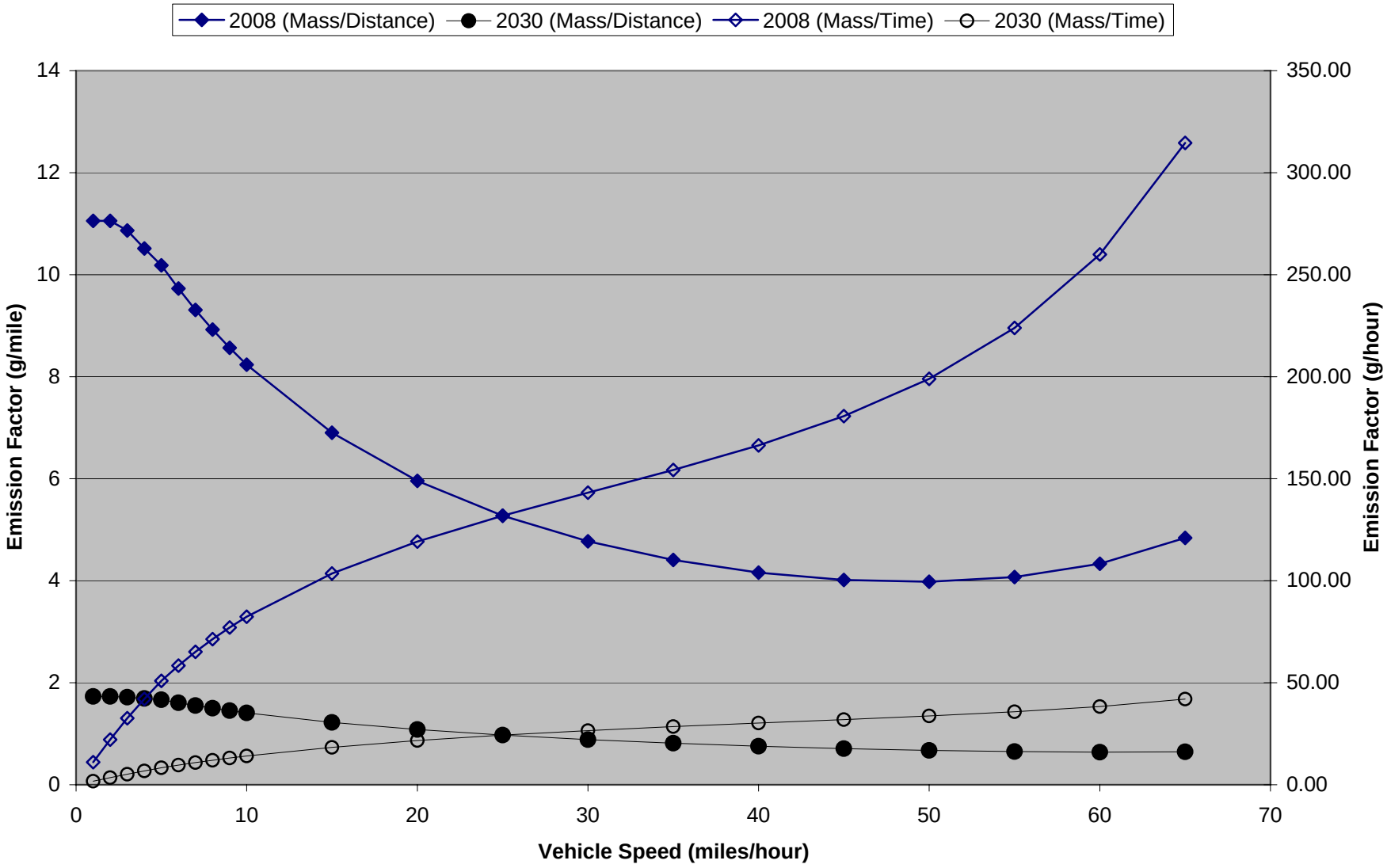
[2] Vehicle hours of travel

[3] Average speed (miles per hour)

g/mile = grams per mile

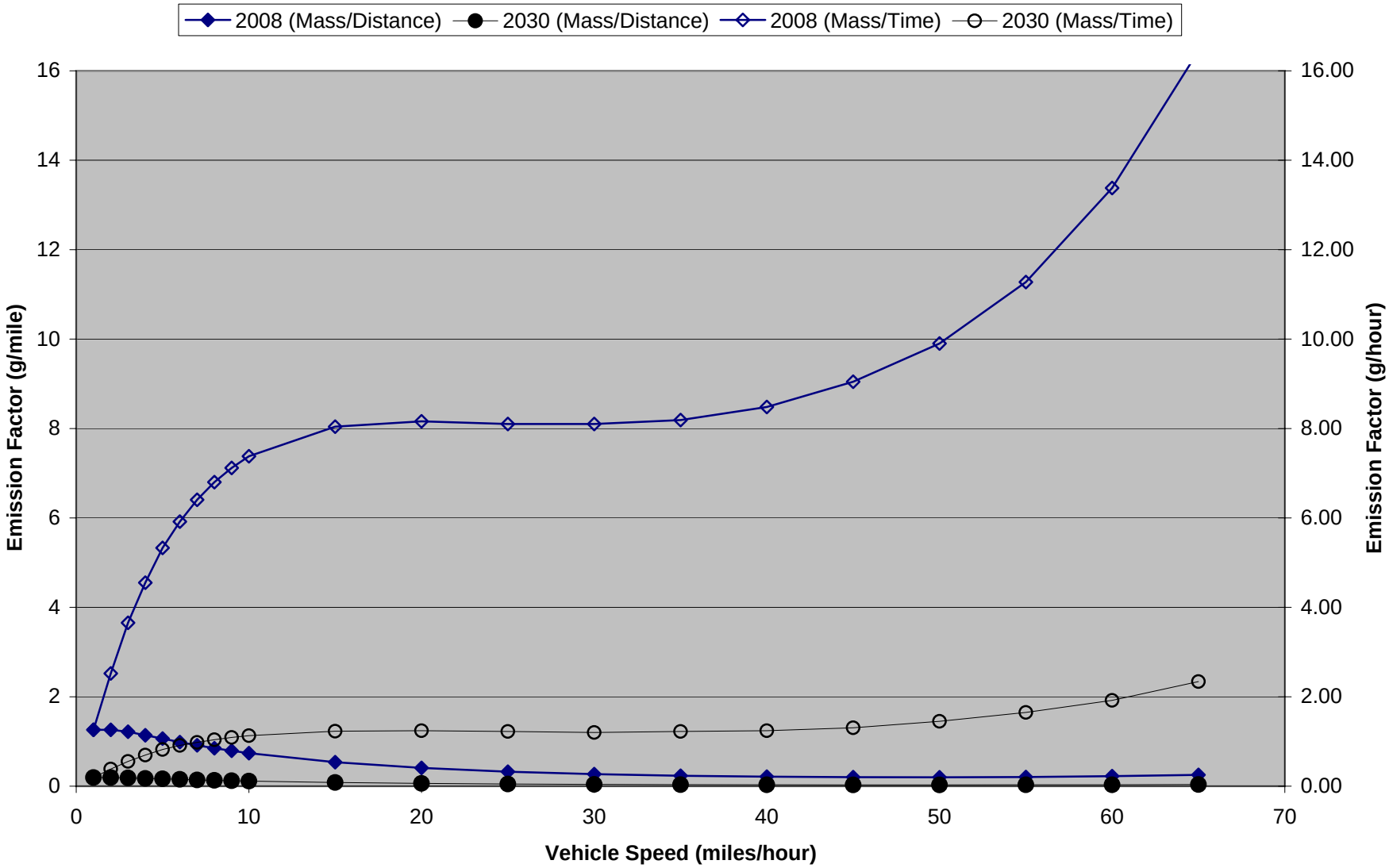
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Figure B-2. Alameda County Carbon Moxoxide Fleet-Averaged Emission Factors



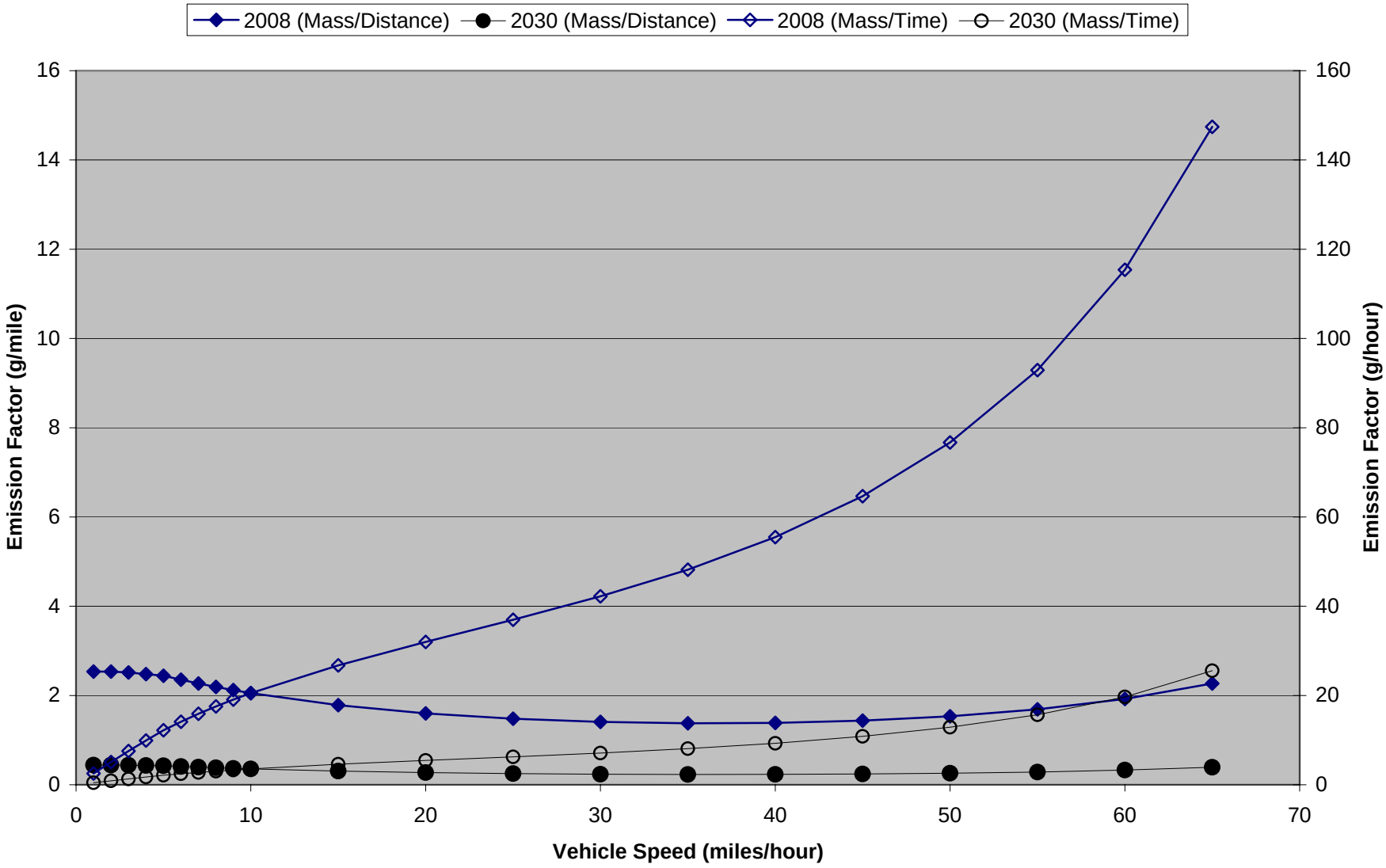
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Figure B-3. Alameda County ROG Fleet-Averaged Emission Factors



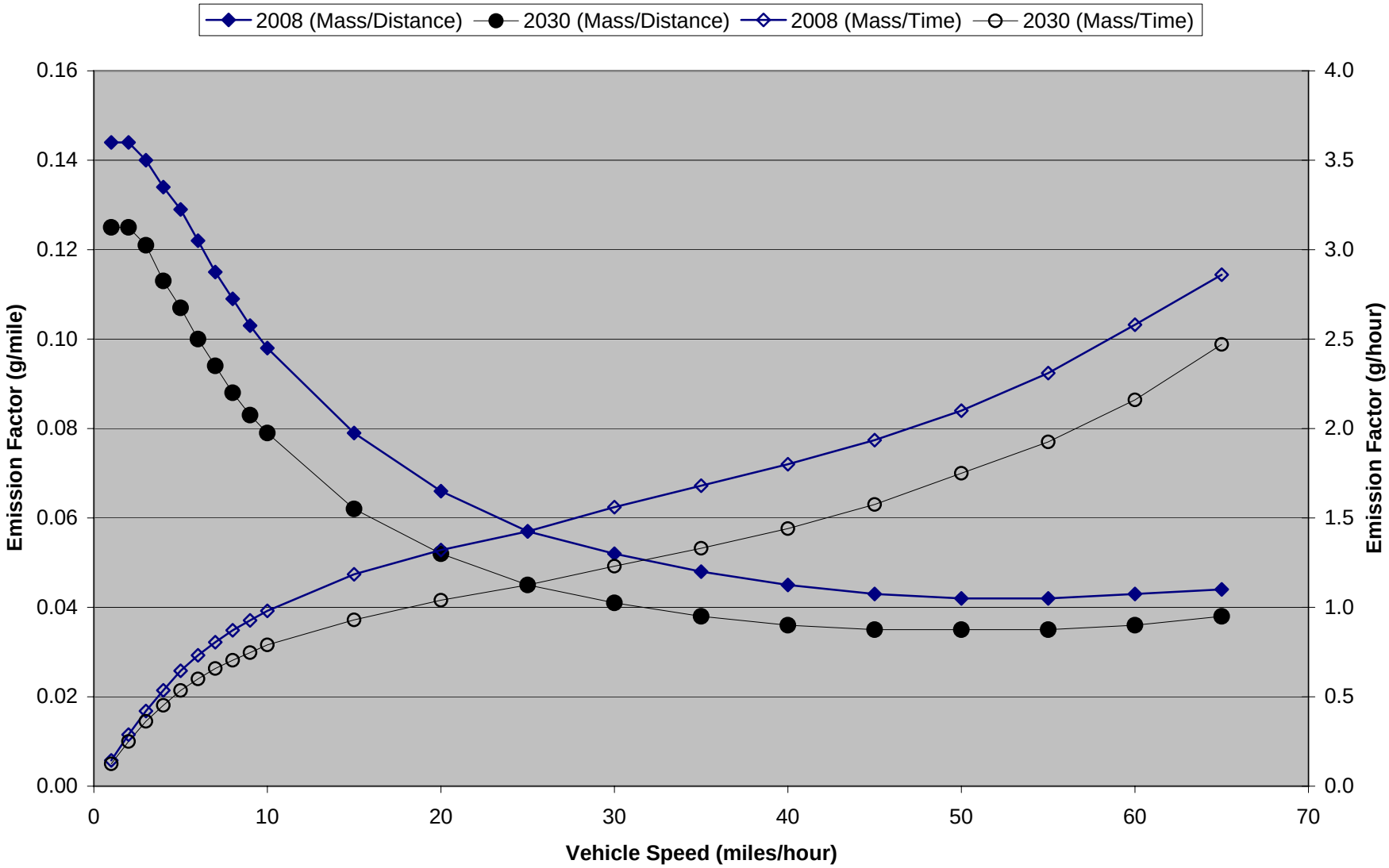
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Figure B-4. Alameda County NOX Fleet-Averaged Emission Factors



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Figure B-5. Alameda County PM10 Fleet-Averaged Emission Factors



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Meteorological inputs for CALINE4 modeling were selected so as to produce the most conservative (highest) CO concentration predictions. Consistent with the EMFAC analysis, the model temperature was 42°F. The wind speed was specified as 0.5 miles per second, which is the lowest possible wind speed permissible for the CALINE4 model. The stability was specified to be G (very stable), and the standard deviation of the horizontal wind direction was selected to be 5 degrees. The worst-case wind direction option was selected to produce the highest possible CO model estimates.

The CALINE4 model was used to simulate the Santa Rita/Stoneridge intersection for the various traffic loadings depicted in Table B-4. Results of CALINE4 analysis are shown in Table B-5 for the worst-case (greatest) modeled CO concentration from the 4 receptors located 3 meters from the intersection. The 1-hour and 8-hour background concentrations listed in Table B-5 were based on the highest measured concentration at the Livermore Rincon Avenue monitoring station from 2003–2005. Because CO concentrations are expected to decrease in the future, using the 2003–2005 data to estimate future background concentrations is conservative.

The highest modeled CO concentration, including background, for the design intersection was 9.3 and 5.9 ppm for the 1-hour and 8-hour modeling scenarios, respectively. The most restrictive national and California CO standards are 20 ppm for 1-hour averaging and 9 ppm for 8-hour averaging.

The intersection of Santa Rita and Stoneridge was selected for analysis because it represents the intersection with the worst delay in the Project Area. Because CO concentrations near this intersection are well below the most restrictive of the federal and California CO air quality standards with and without the project, it can be concluded that the Project will have no significant deleterious impacts on CO concentrations near roadway intersections within the Project Area.

Operational Emissions

The Project will result in increased pollutant emissions resulting from increased vehicular activity and area source emissions associated with the operation of commercial real estate. In this section, the methodology used to estimate vehicular and area source emissions associated with the project is discussed.

The VMT and vehicle hours traveled (VHT) associated with each project configuration for 2008 and 2030 are listed in Table B-6. The average trip speed for each scenario is determined by dividing VMT by VHT. Based on the average trip speed, the EF for CO, ROG, NO_x and PM10 can be determined using the EMFAC modeling results presented in Table B-2. The product of the appropriate VMT and EF estimates allows one to calculate the daily emissions of criteria pollutants and their precursors for each project configuration. Results of these calculations are listed in Table B-6.

Several important phenomena are evident when comparing the average of the 2008 scenarios to the 2030 scenarios. On average VMT is expected to increase by 43%, and VHT is expected to increase by 71%. However, CO, ROG, NO_x, and PM10 emission factors are expected to decrease by 80%, 82%, 82%, and 13%, respectively, over the same period. As a result, even though there are significant increases in VMT for the Project Area, overall emissions in the region are expected to decrease by at least 70% for CO, ROG, and NO_x because improvements in emissions controls are expected to outweigh the increases in VMT. Over the same period, PM10 emissions are expected to increase by approximately 24%.

Average vehicular emission rates for CO, ROG, NO_x, and PM10 are approximately 60,374, 3,416, 17,801, and 658 pounds/day, respectively, for 2008 and 17,585, 886, 4,518, and 813 pounds/day, respectively, for 2030. In comparison with the no-project baseline, the 2008 scenarios result in increased emissions of CO between 326 and 838 pounds/day, increased emissions of ROG between 18 and 47 pounds/day, increased emissions of NO_x between 96 and 247 pounds/day, and increased emissions of PM10 between 4 and 9 pounds/day. In comparison with the no-project baseline, the 2030 scenarios result in increased emissions of CO between 211 and 240 pounds/day, increased emissions of ROG between 11 and 12 pounds/day, increased emissions of NO_x between 54 and 62 pounds/day, and increased emissions of PM10 between 10 and 11 pounds/day. The pollutant emission rates between the Airway Boulevard Extension and Jack London Boulevard Extension options were statistically similar.

In addition to increases in emissions due to increased vehicular activity, changes in land use associated with the project will result in increased area emissions of atmospheric pollutants. The URBEMIS2002 model was used to estimate the increase in ROG, NO_x, CO, SO_2, and PM10 emissions associated with the development of retail property. At the time of air quality modeling, the initial stages of construction were expected to create 550,000 square feet of retail space, whereas the full Project was expected to create 1,449,000 square feet of retail space. Subsequent to the air quality modeling conducted for the proposed Project, the Prime Outlets project has been identified as a retail center with a gross floor area of approximately 450,000 square feet. URBEMIS2002 estimates of the area emissions associated with the operation of the retail space are listed in Table B-7. Area source emissions associated with retail activity result from increases in natural gas usage and off gassing of architectural coatings. URBEMIS indicates that the area emissions associated with retail activity are not a function of time, and, as such, daily area emissions for 2008 and 2030 are identical.

Table B-7: Daily Emissions of Criteria Pollutants and Their Precursors from Area Sources from Increases in Commercial Real Estate

	Emission Factors (pounds/day)			
Scenario	CO	ROG	NO_x	PM10
2008 - Phase I—Summer	5.25	8.22	5.32	0.01
2008 - Phase I—Winter	4.47	8.09	5.32	0.01
2008 - Phase I—Maximum	5.25	8.22	5.32	0.01
2008 - Full Buildout—Summer	12.55	21.45	14.01	0.03
2008 - Full Buildout—Winter	11.77	21.32	14.01	0.03
2008 - Full Buildout—Maximum	12.55	21.45	14.01	0.03
2030 - Full Buildout—Summer	12.55	21.45	14.01	0.03
2030 - Full Buildout—Winter	11.77	21.32	14.01	0.03
2030 - Full Buildout—Maximum	12.55	21.45	14.01	0.03

Note:

Values exclude emissions from vehicles.

The URBEMIS model also predicts increased operational emissions from increased vehicle trips associated with the retail property. URBEMIS vehicle emissions were not used in this analysis because the increase in vehicle trips from project activity is addressed directly in the preceding VMT calculations.

The summation of criteria pollutant emissions from vehicular activity and area source emissions is listed in Table B-8. In comparison with the no-project baseline, the 2008 scenarios result in increased emissions of CO between 331 and 851 pounds/day, increased emissions of ROG between 27 and 69 pounds/day, increased emissions of NO_x between 101 and 261 pounds/day, and increased emissions of PM10 between 4 and 9 pounds/day. In comparison with the no-project baseline, the 2030 scenarios result in increased emissions of CO between 223 and 253 pounds/day, increased emissions of ROG between 32 and 34 pounds/day, increased emissions of NO_x between 68 and 76 pounds/day, and increased emissions of PM10 between 10 and 11 lbs/day. The pollutant emission rates between the Airway Boulevard Extension and Jack London Boulevard Extension options were statistically similar. The area emissions were, in general, significantly less than the transportation-related emissions with the exception of 2030 ROG emissions. For the year 2030, the ROG emissions associated with off gassing of architectural coatings was greater than the increase of ROG emissions above project baseline for transportation activities.

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Table B-8: Daily Emissions of Criteria Pollutants and their Precursors from Transportation Activities and Area Sources Associated with the El Charro Project.

Scenario	Transportation				Area Sources from Commercial				Total Emissions				Total Emissions			
	Daily Emissions (pounds)				Daily Emissions (pounds)				Daily Emissions (pounds)				Daily Emissions above Baseline (pounds)			
	CO	ROG	NO_x	PM10	CO	ROG	NO_x	PM10	CO	ROG	NO_x	PM10	CO	ROG	NO_x	PM10
2008 No Project—Baseline	59,889	3,388	17,658	653	0.0	0.0	0.0	0.0	59,889	3,388	17,658	653	-	-	-	-
2008 Phase I Project	60,214	3,407	17,754	656	5.3	8.2	5.3	0.0	60,219	3,415	17,759	656	331	27	101	4
2008 Full Project w/ Jack London Boulevard Extension	60,666	3,432	17,887	661	12.6	21.5	14.0	0.0	60,679	3,454	17,901	661	790	65	243	9
2008 Full Project w/ Airway Boulevard Extension	60,727	3,436	17,905	662	12.6	21.5	14.0	0.0	60,739	3,457	17,919	662	851	69	261	9
2030 No Project—Baseline	17,435	878	4,480	806	0.0	0.0	0.0	0.0	17,435	878	4,480	806	-	-	-	-
2030 Full Project w/ Jack London Boulevard Extension	17,675	890	4,541	817	12.6	21.5	14.0	0.0	17,688	912	4,555	817	253	34	76	11
2030 Full Project w/ Airway Boulevard Extension	17,646	889	4,534	816	12.6	21.5	14.0	0.0	17,658	910	4,548	816	223	32	68	10

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Appendix C

Species Lists

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Print table Export entire table to a text file Close window

Results for quads centered on LIVERMORE Quad (3712167) - 200 elements selected

Record	QUADNAME	ELMCODE	SCINAME	COMNAME	FEDSTATUS	CALSTATUS	CDFG	CNPS
1	Altamont	AAAAA01180	Ambystoma californiense	California tiger salamander	Threatened	None	SC	
2	Altamont	AAABF01030	Spea (=Scaphiopus) hammondii	western spadefoot	None	None	SC	
3	Altamont	AAABH01022	Rana aurora draytonii	California red-legged frog	Threatened	None	SC	
4	Altamont	ABNKC19120	Buteo regalis	ferruginous hawk	None	None	SC	
5	Altamont	ABNSB10010	Athene cunicularia	burrowing owl	None	None	SC	
6	Altamont	ABPBXB0020	Agelaius tricolor	tricolored blackbird	None	None	SC	
7	Altamont	AMAJA03041	Vulpes macrotis mutica	San Joaquin kit fox	Endangered	Threatened		
8	Altamont	AMAJF04010	Taxidea taxus	American badger	None	None	SC	
9	Altamont	ARADB21021	Masticophis flagellum ruddocki	San Joaquin whipsnake	None	None	SC	
10	Altamont	CTT36210CA	Valley Sink Scrub	Valley Sink Scrub	None	None		
11	Altamont	CTT62100CA	Sycamore Alluvial Woodland	Sycamore Alluvial Woodland	None	None		
12	Altamont	ICBRA03020	Branchinecta longiantenna	longhorn fairy shrimp	Endangered	None		
13	Altamont	ICBRA03030	Branchinecta lynchi	vernal pool fairy shrimp	Threatened	None		
14	Altamont	IICOL38030	Hygrotus curvipes	curved-foot hygrotus diving beetle	None	None		
15	Altamont	PDAST11061	Balsamorhiza macrolepis var. macrolepis	big-scale balsamroot	None	None		1B.2
16	Altamont	PDAST4R0P1	Centromadia parryi ssp. congdonii	Congdon's tarplant	None	None		1B.2
17	Altamont	PDAST4R0V0	Deinandra bacigalupii	Livermore tarplant	None	None		1B.2
18	Altamont	PDBOR01070	Amsinckia lunaris	bent-flowered fiddleneck	None	None		1B.2
19	Altamont	PDBOR0V0B0	Plagiobothrys glaber	hairless popcorn-flower	None	None		1A
20	Altamont	PDBRA2R010	Tropidocarpum capparideum	caper-fruited tropidocarpum	None	None		1B.1
21	Altamont	PDCHE040B0	Atriplex cordulata	heartscale	None	None		1B.2
22	Altamont	PDCHE041F3	Atriplex joaquiniana	San Joaquin spearscale	None	None		1B.2
23	Altamont	PDCHE042L0	Atriplex depressa	brittlescale	None	None		1B.2
24	Altamont	PDFAB0F8R1	Astragalus tener var. tener	alkali milk-vetch	None	None		1B.2
25	Altamont	PDFAB400R5	Trifolium depauperatum var. hydrophilum	saline clover	None	None		1B.2
26	Altamont	PDGER01070	Erodium macrophyllum	round-leaved filaree	None	None		2.1
27	Altamont	PDPAP0A0D0	Eschscholzia rhombipetala	diamond-petaled California poppy	None	None		1B.1
28	Altamont	PDRAN0B0A2	Delphinium californicum ssp. interius	Hospital Canyon larkspur	None	None		1B.2
29	Altamont	PDSCR0J0D1	Cordylanthus mollis ssp. hispidus	hispid bird's-beak	None	None		1B.1
30	Altamont	PDSCR0J0J0	Cordylanthus palmatus	palmate-bracted bird's-beak	Endangered	Endangered		1B.1
31	Byron Hot Springs	AAAAA01180	Ambystoma californiense	California tiger salamander	Threatened	None	SC	
32	Byron Hot Springs	AAABH01022	Rana aurora draytonii	California red-legged frog	Threatened	None	SC	

33	Byron Hot Springs	ABNKC22010	Aquila chrysaetos	golden eagle	None	None	SC	
34	Byron Hot Springs	ABNKD06090	Falco mexicanus	prairie falcon	None	None	SC	
35	Byron Hot Springs	ABNSB10010	Athene cunicularia	burrowing owl	None	None	SC	
36	Byron Hot Springs	ABPBXB0020	Agelaius tricolor	tricolored blackbird	None	None	SC	
37	Byron Hot Springs	AMAJA03041	Vulpes macrotis mutica	San Joaquin kit fox	Endangered	Threatened		
38	Byron Hot Springs	AMAJF04010	Taxidea taxus	American badger	None	None	SC	
39	Byron Hot Springs	ARAAD02030	Emys (=Clemmys) marmorata	western pond turtle	None	None	SC	
40	Byron Hot Springs	ARACF12022	Phrynosoma coronatum (frontale population)	Coast (California) horned lizard	None	None	SC	
41	Byron Hot Springs	ARADB21021	Masticophis flagellum ruddocki	San Joaquin whipsnake	None	None	SC	
42	Byron Hot Springs	ARADB21031	Masticophis lateralis euryxanthus	Alameda whipsnake	Threatened	Threatened		
43	Byron Hot Springs	CTT36210CA	Valley Sink Scrub	Valley Sink Scrub	None	None		
44	Byron Hot Springs	CTT42110CA	Valley Needlegrass Grassland	Valley Needlegrass Grassland	None	None		
45	Byron Hot Springs	CTT44120CA	Northern Claypan Vernal Pool	Northern Claypan Vernal Pool	None	None		
46	Byron Hot Springs	CTT45310CA	Alkali Meadow	Alkali Meadow	None	None		
47	Byron Hot Springs	CTT45320CA	Alkali Seep	Alkali Seep	None	None		
48	Byron Hot Springs	CTT52310CA	Cismontane Alkali Marsh	Cismontane Alkali Marsh	None	None		
49	Byron Hot Springs	ICBRA03020	Branchinecta longiantenna	longhorn fairy shrimp	Endangered	None		
50	Byron Hot Springs	ICBRA03030	Branchinecta lynchi	vernal pool fairy shrimp	Threatened	None		
51	Byron Hot Springs	ICBRA03150	Branchinecta mesovallensis	midvalley fairy shrimp	None	None		
52	Byron Hot Springs	IICOL38030	Hygrotus curvipes	curved-foot hygrotus diving beetle	None	None		
53	Byron Hot Springs	PDAST1C011	Blepharizonia plumosa	big tarplant	None	None		1B.1
54	Byron Hot Springs	PDAST4M020	Helianthella castanea	Diablo helianthella	None	None		1B.2
55	Byron Hot Springs	PDAST4R0P1	Centromadia parryi ssp. congdonii	Congdon's tarplant	None	None		1B.2
56	Byron Hot Springs	PDAST8H060	Senecio aphanactis	rayless ragwort	None	None		2.2
57	Byron Hot Springs	PDBRA2R010	Tropidocarpum capparideum	caper-fruited tropidocarpum	None	None		1B.1
58	Byron Hot Springs	PDCHE041F3	Atriplex joaquiniana	San Joaquin spearscale	None	None		1B.2
59	Byron Hot Springs	PDCHE042L0	Atriplex depressa	brittlescale	None	None		1B.2
60	Byron Hot Springs	PDFAB0F8R1	Astragalus tener var. tener	alkali milk-vetch	None	None		1B.2
61	Byron Hot Springs	PDGER01070	Erodium macrophyllum	round-leaved filaree	None	None		2.1
62	Byron Hot Springs	PDPAP0A0D0	Eschscholzia rhombipetala	diamond-petaled California poppy	None	None		1B.1
63	Byron Hot Springs	PDRAN0B1J0	Delphinium recurvatum	recurved larkspur	None	None		1B.2
64	Diablo	AAAAA01180	Ambystoma californiense	California tiger salamander	Threatened	None	SC	
65	Diablo	AAABH01022	Rana aurora draytonii	California red-legged frog	Threatened	None	SC	
66	Diablo	ABNKD06090	Falco mexicanus	prairie falcon	None	None	SC	
67	Diablo	ABNSB10010	Athene cunicularia	burrowing owl	None	None	SC	

68	Diablo	ABPAT02011	Eremophila alpestris actia	California horned lark	None	None	SC	
69	Diablo	ABPBXB0020	Agelaius tricolor	tricolored blackbird	None	None	SC	
70	Diablo	AMAFD03061	Dipodomys heermanni berkeleyensis	Berkeley kangaroo rat	None	None		
71	Diablo	AMAJA03041	Vulpes macrotis mutica	San Joaquin kit fox	Endangered	Threatened		
72	Diablo	AMAJF04010	Taxidea taxus	American badger	None	None	SC	
73	Diablo	ARAAD02030	Emys (=Clemmys) marmorata	western pond turtle	None	None	SC	
74	Diablo	ARADB21031	Masticophis lateralis euryxanthus	Alameda whipsnake	Threatened	Threatened		
75	Diablo	IIDIP07010	Efferia antiochi	Antioch efferian robberfly	None	None		
76	Diablo	IILEPE2202	Callophrys mossii bayensis	San Bruno elfin butterfly	Endangered	None		
77	Diablo	IMGASC2362	Helminthoglypta nickliniana bridgesi	Bridges' coast range shoulderband (snail)	None	None		
78	Diablo	NBMUS7S010	Triquetrella californica	coastal triquetrella	None	None		1B.2
79	Diablo	NBMUS80010	Anomobryum julaceum	slender silver-moss	None	None		2.2
80	Diablo	PDAST4M020	Helianthella castanea	Diablo helianthella	None	None		1B.2
81	Diablo	PDAST4R0P1	Centromadia parryi ssp. congdonii	Congdon's tarplant	None	None		1B.2
82	Diablo	PDBRA2G0M0	Streptanthus hispidus	Mt. Diablo jewel-flower	None	None		1B.3
83	Diablo	PDCAM020A0	Campanula exigua	chaparral harebell	None	None		1B.2
84	Diablo	PDCHE041F3	Atriplex joaquiniana	San Joaquin spearscale	None	None		1B.2
85	Diablo	PDCPR07080	Viburnum ellipticum	oval-leaved viburnum	None	None		2.3
86	Diablo	PDERI04040	Arctostaphylos auriculata	Mt. Diablo manzanita	None	None		1B.3
87	Diablo	PDERI04273	Arctostaphylos manzanita ssp. laevigata	Contra Costa manzanita	None	None		1B.2
88	Diablo	PDHYD0C3Q0	Phacelia phacelioides	Mt. Diablo phacelia	None	None		1B.2
89	Diablo	PDLIN01030	Hesperolinon breweri	Brewer's western flax	None	None		1B.2
90	Diablo	PDMAL0Q0F0	Malacothamnus hallii	Hall's bush mallow	None	None		1B.2
91	Diablo	PDPGN085Z0	Eriogonum truncatum	Mt. Diablo buckwheat	None	None		1B.1
92	Diablo	PMLIL0D160	Calochortus pulchellus	Mt. Diablo fairy-lantern	None	None		1B.2
93	Dublin	AAAAA01180	Ambystoma californiense	California tiger salamander	Threatened	None	SC	
94	Dublin	AAABH01022	Rana aurora draytonii	California red-legged frog	Threatened	None	SC	
95	Dublin	ABNSB10010	Athene cunicularia	burrowing owl	None	None	SC	
96	Dublin	ABPAT02011	Eremophila alpestris actia	California horned lark	None	None	SC	
97	Dublin	ABPBXB0020	Agelaius tricolor	tricolored blackbird	None	None	SC	
98	Dublin	AMAJA03041	Vulpes macrotis mutica	San Joaquin kit fox	Endangered	Threatened		
99	Dublin	AMAJF04010	Taxidea taxus	American badger	None	None	SC	
100	Dublin	ARAAD02030	Emys (=Clemmys) marmorata	western pond turtle	None	None	SC	
101	Dublin	ARADB21031	Masticophis lateralis euryxanthus	Alameda whipsnake	Threatened	Threatened		
102	Dublin	ICBRA06010	Linderiella occidentalis	California linderiella	None	None		

103	Dublin	PDAST4M020	Helianthella castanea	Diablo helianthella	None	None		1B.2
104	Dublin	PDAST4R0P1	Centromadia parryi ssp. congdonii	Congdon's tarplant	None	None		1B.2
105	Dublin	PDBOR0V0B0	Plagiobothrys glaber	hairless popcorn-flower	None	None		1A
106	La Costa Valley	AAAAA01180	Ambystoma californiense	California tiger salamander	Threatened	None	SC	
107	La Costa Valley	AAABH01022	Rana aurora draytonii	California red-legged frog	Threatened	None	SC	
108	La Costa Valley	AAABH01050	Rana boylii	foothill yellow-legged frog	None	None	SC	
109	La Costa Valley	ABNKC12020	Accipiter striatus	sharp-shinned hawk	None	None	SC	
110	La Costa Valley	ABNKC12040	Accipiter cooperii	Cooper's hawk	None	None	SC	
111	La Costa Valley	ABNKC22010	Aquila chrysaetos	golden eagle	None	None	SC	
112	La Costa Valley	ABNKD06071	Falco peregrinus anatum	American peregrine falcon	Delisted	Endangered		
113	La Costa Valley	ABPBXB0020	Agelaius tricolor	tricolored blackbird	None	None	SC	
114	La Costa Valley	AFCHA0209G	Oncorhynchus mykiss irideus	steelhead-central California coast esu	Threatened	None		
115	La Costa Valley	AMACC08010	Corynorhinus townsendii	Townsend's big-eared bat	None	None	SC	
116	La Costa Valley	AMACC10010	Antrozous pallidus	pallid bat	None	None	SC	
117	La Costa Valley	ARAAD02030	Emys (=Clemmys) marmorata	western pond turtle	None	None	SC	
118	La Costa Valley	ARAAD02032	Emys (=Clemmys) marmorata pallida	southwestern pond turtle	None	None	SC	
119	La Costa Valley	ARADB21031	Masticophis lateralis euryxanthus	Alameda whipsnake	Threatened	Threatened		
120	La Costa Valley	CTT62100CA	Sycamore Alluvial Woodland	Sycamore Alluvial Woodland	None	None		
121	La Costa Valley	ICBRA06010	Linderiella occidentalis	California linderiella	None	None		
122	La Costa Valley	PDAST4M020	Helianthella castanea	Diablo helianthella	None	None		1B.2
123	La Costa Valley	PDBRA2G012	Streptanthus albidus ssp. peramoenus	most beautiful jewel-flower	None	None		1B.2
124	La Costa Valley	PDCAM020A0	Campanula exigua	chaparral harebell	None	None		1B.2
125	Livermore	AAAAA01180	Ambystoma californiense	California tiger salamander	Threatened	None	SC	
126	Livermore	AAABH01022	Rana aurora draytonii	California red-legged frog	Threatened	None	SC	
127	Livermore	ABNKC06010	Elanus leucurus	white-tailed kite	None	None		
128	Livermore	ABNKC19120	Buteo regalis	ferruginous hawk	None	None	SC	
129	Livermore	ABNSB10010	Athene cunicularia	burrowing owl	None	None	SC	
130	Livermore	ABPAT02011	Eremophila alpestris actia	California horned lark	None	None	SC	
131	Livermore	ABPBXB0020	Agelaius tricolor	tricolored blackbird	None	None	SC	
132	Livermore	AMACC08010	Corynorhinus townsendii	Townsend's big-eared bat	None	None	SC	
133	Livermore	AMAJA03041	Vulpes macrotis mutica	San Joaquin kit fox	Endangered	Threatened		
134	Livermore	AMAJF04010	Taxidea taxus	American badger	None	None	SC	
135	Livermore	ARAAD02030	Emys (=Clemmys) marmorata	western pond turtle	None	None	SC	
136	Livermore	CTT36210CA	Valley Sink Scrub	Valley Sink Scrub	None	None		
137	Livermore	CTT62100CA	Sycamore Alluvial Woodland	Sycamore Alluvial Woodland	None	None		

138	Livermore	ICBRA03030	Branchinecta lynchi	vernal pool fairy shrimp	Threatened	None		
139	Livermore	ICBRA06010	Linderiella occidentalis	California linderiella	None	None		
140	Livermore	PDAST4R0P1	Centromadia parryi ssp. congdonii	Congdon's tarplant	None	None		1B.2
141	Livermore	PDBOR0V0B0	Plagiobothrys glaber	hairless popcorn-flower	None	None		1A
142	Livermore	PDBRA2R010	Tropidocarpum capparideum	caper-fruited tropidocarpum	None	None		1B.1
143	Livermore	PDCHE040B0	Atriplex cordulata	heartscale	None	None		1B.2
144	Livermore	PDCHE041F3	Atriplex joaquiniana	San Joaquin spearscale	None	None		1B.2
145	Livermore	PDCHE042L0	Atriplex depressa	brittlescale	None	None		1B.2
146	Livermore	PDFAB400R5	Trifolium depauperatum var. hydrophilum	saline clover	None	None		1B.2
147	Livermore	PDSCR0J0J0	Cordylanthus palmatus	palmate-bracted bird's-beak	Endangered	Endangered		1B.1
148	Mendenhall Springs	AAAAA01180	Ambystoma californiense	California tiger salamander	Threatened	None	SC	
149	Mendenhall Springs	AAABH01022	Rana aurora draytonii	California red-legged frog	Threatened	None	SC	
150	Mendenhall Springs	ABNKC10010	Haliaeetus leucocephalus	bald eagle	Threatened	Endangered		
151	Mendenhall Springs	ABNKC22010	Aquila chrysaetos	golden eagle	None	None	SC	
152	Mendenhall Springs	ABNKD06090	Falco mexicanus	prairie falcon	None	None	SC	
153	Mendenhall Springs	AMAFD03061	Dipodomys heermanni berkeleyensis	Berkeley kangaroo rat	None	None		
154	Mendenhall Springs	AMAJF04010	Taxidea taxus	American badger	None	None	SC	
155	Mendenhall Springs	ARAAD02030	Emys (=Clemmys) marmorata	western pond turtle	None	None	SC	
156	Mendenhall Springs	ARACF12022	Phrynosoma coronatum (frontale population)	Coast (California) horned lizard	None	None	SC	
157	Mendenhall Springs	ARADB21031	Masticophis lateralis euryxanthus	Alameda whipsnake	Threatened	Threatened		
158	Mendenhall Springs	CTT62100CA	Sycamore Alluvial Woodland	Sycamore Alluvial Woodland	None	None		
159	Mendenhall Springs	PDAST2L0C0	Coreopsis hamiltonii	Mt. Hamilton coreopsis	None	None		1B.2
160	Mendenhall Springs	PDCAM0C010	Legenere limosa	legenere	None	None		1B.1
161	Mendenhall Springs	PDRAN0B0A2	Delphinium californicum ssp. interius	Hospital Canyon larkspur	None	None		1B.2
162	Niles	AAAAA01180	Ambystoma californiense	California tiger salamander	Threatened	None	SC	
163	Niles	AAABH01022	Rana aurora draytonii	California red-legged frog	Threatened	None	SC	
164	Niles	ABNGA04010	Ardea herodias	great blue heron	None	None		
165	Niles	ABNKC22010	Aquila chrysaetos	golden eagle	None	None	SC	
166	Niles	ABNME03041	Laterallus jamaicensis coturniculus	California black rail	None	Threatened		
167	Niles	ABNSB10010	Athene cunicularia	burrowing owl	None	None	SC	
168	Niles	ABPBXA301S	Melospiza melodia pusillula	Alameda song sparrow	None	None	SC	
169	Niles	ABPBXB0020	Agelaius tricolor	tricolored blackbird	None	None	SC	
170	Niles	AFCHA0209G	Oncorhynchus mykiss irideus	steelhead-central California coast esu	Threatened	None		
171	Niles	AMAJA03041	Vulpes macrotis mutica	San Joaquin kit fox	Endangered	Threatened		
172	Niles	ARAAD02030	Emys (=Clemmys) marmorata	western pond turtle	None	None	SC	

173	Niles	ARADB21031	Masticophis lateralis euryxanthus	Alameda whipsnake	Threatened	Threatened		
174	Niles	PDAST4R0P1	Centromadia parryi ssp. congdonii	Congdon's tarplant	None	None		1B.2
175	Niles	PDBRA2G012	Streptanthus albidus ssp. peramoenus	most beautiful jewel-flower	None	None		1B.2
176	Niles	PDCAM020A0	Campanula exigua	chaparral harebell	None	None		1B.2
177	Niles	PDCHE041F3	Atriplex joaquiniana	San Joaquin spearscale	None	None		1B.2
178	Tassajara	AAAAA01180	Ambystoma californiense	California tiger salamander	Threatened	None	SC	
179	Tassajara	AAABH01022	Rana aurora draytonii	California red-legged frog	Threatened	None	SC	
180	Tassajara	ABNKC06010	Elanus leucurus	white-tailed kite	None	None		
181	Tassajara	ABNKC11010	Circus cyaneus	northern harrier	None	None	SC	
182	Tassajara	ABNKC22010	Aquila chrysaetos	golden eagle	None	None	SC	
183	Tassajara	ABNKD06090	Falco mexicanus	prairie falcon	None	None	SC	
184	Tassajara	ABNKD06090	Falco mexicanus	prairie falcon	None	None	SC	
185	Tassajara	ABNSB10010	Athene cunicularia	burrowing owl	None	None	SC	
186	Tassajara	ABPAT02011	Eremophila alpestris actia	California horned lark	None	None	SC	
187	Tassajara	AMAJA03041	Vulpes macrotis mutica	San Joaquin kit fox	Endangered	Threatened		
188	Tassajara	AMAJF04010	Taxidea taxus	American badger	None	None	SC	
189	Tassajara	ARAAD02030	Emys (=Clemmys) marmorata	western pond turtle	None	None	SC	
190	Tassajara	ARADB21031	Masticophis lateralis euryxanthus	Alameda whipsnake	Threatened	Threatened		
191	Tassajara	CTT42110CA	Valley Needlegrass Grassland	Valley Needlegrass Grassland	None	None		
192	Tassajara	NBMUS80010	Anomobryum julaceum	slender silver-moss	None	None		2.2
193	Tassajara	PDAST4M020	Helianthella castanea	Diablo helianthella	None	None		1B.2
194	Tassajara	PDAST4R0P1	Centromadia parryi ssp. congdonii	Congdon's tarplant	None	None		1B.2
195	Tassajara	PDBOR01050	Amsinckia grandiflora	large-flowered fiddleneck	Endangered	Endangered		1B.1
196	Tassajara	PDBRA2R010	Tropidocarpum capparideum	caper-fruited tropidocarpum	None	None		1B.1
197	Tassajara	PDERI04040	Arctostaphylos auriculata	Mt. Diablo manzanita	None	None		1B.3
198	Tassajara	PDERI04273	Arctostaphylos manzanita ssp. laevigata	Contra Costa manzanita	None	None		1B.2
199	Tassajara	PDLIN01030	Hesperolinon breweri	Brewer's western flax	None	None		1B.2
200	Tassajara	PMLIL0D160	Calochortus pulchellus	Mt. Diablo fairy-lantern	None	None		1B.2

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Appendix D

Water Supply Assessment

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LIVERMORE MUNICIPAL WATER
EL CHARRO SPECIFIC PLAN AREA
SB 610 WATER ASSESSMENT

November 2006

1) Does SB 610 apply to the proposed project per Water Code sections 10910 and 10912?

a) The proposed project is subject to the California Environmental Quality Act Division 13 (Water Section 10910); therefore it must comply with Water Code Section 10912.
b) At completion, the project has an equivalent water demand in excess of a 500 dwelling unit project. Therefore the proposed project is subject to the SB 610 definition of a "project."
c) The proposed project is also subject to the SB 610 definition of a project since it will be a shopping center employing more than 1,000 persons or having more than 500,000 square feet of floor space.
d) SB 610 applies to this proposed project. The proposed project will use recycled water for all outdoor landscape irrigation except if not appropriate to support vineyards due to soil type.

2) Who will prepare the SB 610 Assessment?

This document has been prepared by the water staff of Livermore Municipal Water along with legal insight from the City Attorney's Office.

3) Has an assessment already been prepared that includes this proposed project per Water Code section 10919?

No SB 610 assessment has been prepared for this proposed project.

4) Is there a current Urban Water Management Plan (UWMP)?

a) Yes, Livermore Municipal Water has a current UWMP, revised and adopted in December 2005.
b) The proposed project is located within Livermore Municipal's adopted water service area boundary.
c) The estimated water demand for the project is 140 acre-feet per year (AFA) which is based on 156 acres of Business Commercial Park at 800 gallons per day per acre.
d) The water demand for the proposed project is accounted for in the UWMP in Section 2, Table 7 which describes the Past, Current, and Projected Water Deliveries & Number of Accounts.

5) Is the projected water demand for the proposed project accounted for in the UWMP per Water Code section 10910 (c)(2)?

The projected water demands are accounted for in Section 2, Table 7 of the UWMP dated December 2005.

6) Identify existing water supply entitlements and quantify water received from entitlements.

Livermore Municipal receives 100% of our treated water from Zone 7 Water Agency (Zone 7), the valley's water wholesaler. Zone 7 has obtained water to satisfy the demands of Livermore Municipal until the year 2030. A water transfer agreement was made by Zone 7 with Byron Bethany Irrigation District and water storage agreements have been made with Semitropic Water Storage and Cawelo Water Districts to provide the water for the proposed demands along with Zone 7's long term contract with the Department of Water Resources. These supplies were noted in our UWMP by an email from Zone 7 indicating the amount of water intended for our utility labeled as ***"Wholesaler Identified, Quantified, and Planned Sources of Water available to Livermore Municipal".*** The amount of treated water available to Livermore Municipal as identified in Zone 7's UWMP is shown in Table 5. The supply reliability of this water from Zone 7 in both the Zone 7 UWMP and Livermore Municipal's UWMP is listed as 100%. Livermore Municipal, along with two other valley retail water agencies have long term contracts with Zone 7 assuring that treated water will be delivered when it is scheduled. Livermore Municipal's contract has been in effect since March of 1963. Since 1963, Zone 7 has delivered 100% of the water that Livermore Municipal has requested. Even during the two state-wide droughts in that time frame, Livermore Municipal's water demands were met by Zone 7. The available water since the 1989-91 drought has been increased many times over. The quantities of treated water available for purchase and use by Livermore Municipal were listed as follows for the future years.

2010 - 7,620 A.F. **2015 - 9,400 A.F.** **2020 - 9,900 A.F.**

2025 - 10,200 A.F. **2030 - 10,200 A.F.**

In addition to the treated water quantities shown above, Livermore Municipal has a maximum of 5,600 Acre Feet per year of recycled water available for outdoor irrigation uses to offset potable water uses in the western portion of our service area. See Table 4 below for the recycled water demands for the last six years. The demand for recycled water has increased from 534 AF in 2000 to 834 in 2005. This means that there is over 4,600 AF of recycled water still available for use in the western portion of the Livermore Municipal Service Area for outdoor irrigation of landscaping, orchards, food crops, pastures, cemeteries and commercial nurseries. The recycled water can also be used for ornamental fountains, toilet & urinal flushing, industrial processes, laundries, and cooling & air conditioning purposes.

The combination of available treated water and recycled water meets the City's estimated water demands.

The only capital outlay project that effects this project is Livermore Municipal's proposed Doolan Water Reservoir #2. The tank design and pump station took the water demands of the Westside Area into consideration. The tank project is funded by water connection fees that are paid by each user based on meter size. The tank construction will require Livermore Municipal to obtain a building permit from the Livermore Building Division. As a courtesy, Livermore Municipal may file an amended water supply permit with the Department of Health, but the filing is currently not required by existing code.

Table 1. Ten-year Water Deliveries from Zone 7 to Livermore Municipal

Year	Delivery in Acre Feet
1996	4,387.59
1997	4,991.54
1998	5,079.69
1999	5,828.89
2000	6,170.67
2001	6,729.71
2002	6,728.26
2003	6,191.24
2004	6,784.95
2005	6,624.46

Table 2. Total Water Received in Prior 20 Years

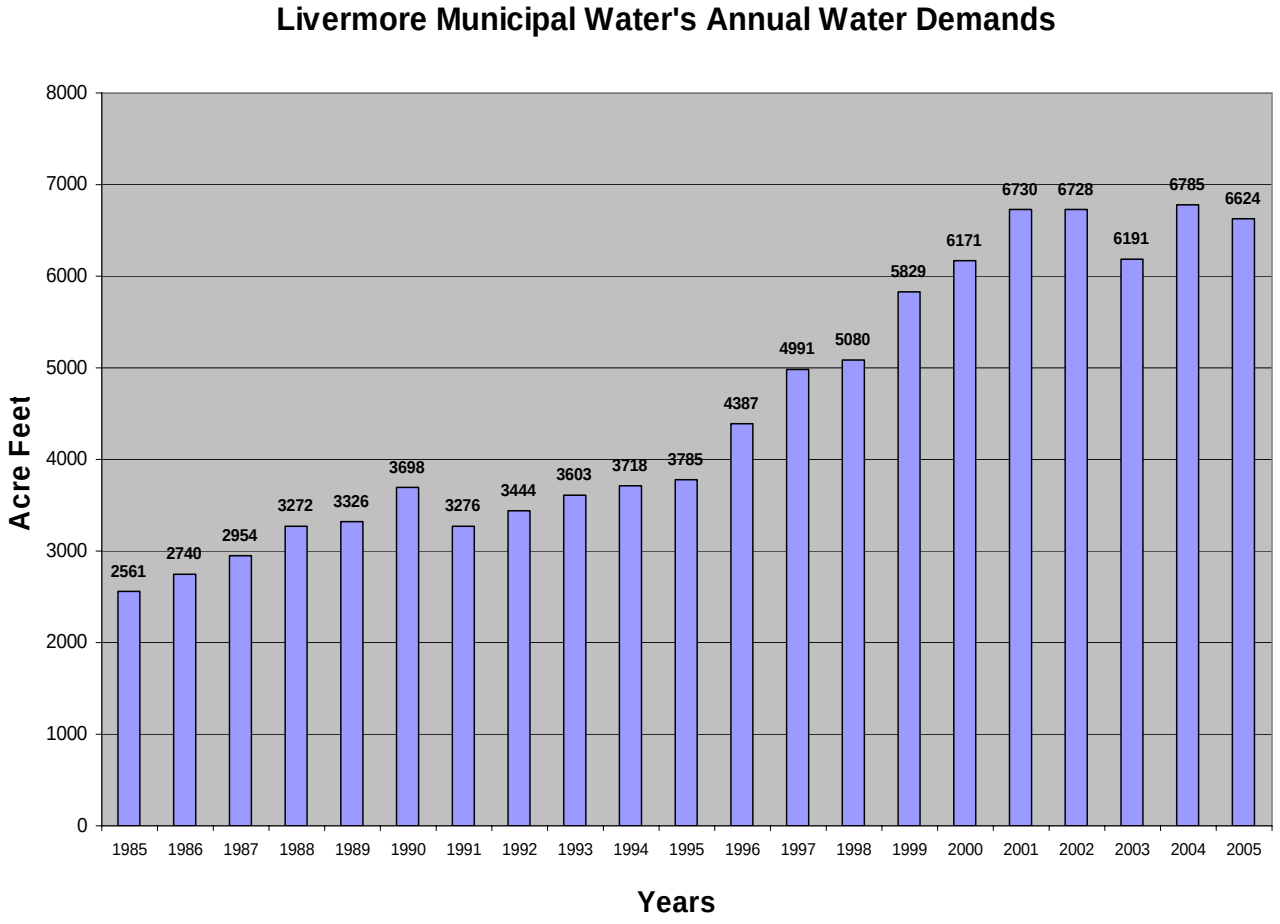


Table 3. Historic & Projected Water Use by Customer Sector (UWMP 2005) *includes both treated and recycled water demands.

Sector/Year	2000	2005	2010	2015	2020	2025	2030
Single Family Residential	3,041	3,345	4,979	5,065	5,065	5,065	5,065
Commercial / Industrial	2,263	2,252	2,605	2,650	2,650	2,650	2,650
Public Agency	320	425	460	470	470	470	470
Total	**5,624**	**6,022**	**8,044**	**8,185**	**8,185**	**8,185**	**8,185**

Table 4. Recycled Water Demands – 2000 to 2005 (A.F.)

Locations	2000	2001	2002	2003	2004	2005
City Treatment Plant	109.20	100.72	100.72	48.87	50.57	86.35
Golf Course - South	305.90	444.08	399.65	187.39	113.41	109.32
Golf Course - North	115.12	40.89	87.11	134.94	327.30	289.75
Golf Course - Misc.	0	1.94	6.75	0	88.25	6.33
City Airport	3.71	5.58	6.81	5.82	4.40	6.29
All Other Metered Serv	-0.53	59.58	89.09	159.60	204.21	238.03
City Metered Services	0	0	0	18.60	15.62	98.19
Totals	**534.46**	**652.79**	**690.13**	**555.22**	**803.76**	**834.26**

Table 5. Total Water Available to Livermore Municipal in AF(UWMP 2005)

Wholesaler Sources	2010		2015		2020		2025		2030	
	% of Source	Planned	% of Source	Planned	% of Source	Planned	% of Source	Planned	% of Source	Planned
State Water	86%	6,553	85%	7,990	84%	8,316	84%	8,568	80%	8,160
Groundwater	0%	0	0%	0	0%	0	0%	0	0%	0
Lake Del Valle	11%	838	13%	1,222	13%	1,287	14%	1,428	17%	1,734
B.B.I.D.	3%	229	2%	188	3%	297	2%	204	3%	306
Total – Zone 7	100%	7,620	100%	9,400	100%	9,900	100%	10,200	100%	10,200
Available City Recycled Water		5,600		5,600		5,600		5,600		5,600
Total Water Available		**13,220**		**15,000**		**15,500**		**15,800**		**15,800**

Table 5 above, shows that Zone 7 has allocated 0% of their groundwater supply in the Livermore Amador Valley through 203. Zone 7 pumps and then recharges approximately 13,000 A.F. of groundwater each year. They have not shown any consumption in the groundwater numbers provided to Livermore Municipal in any of the future years but rather have held these available sources in reserve for future out years. These reserves are also potentially available should demands exceed identified supply.

7) Will the projected water supply available during normal, single dry, and multiple dry water years meet the projected water demand of the proposed project, in addition to the water supplier's existing and planned future uses?

Yes, per the UWMP (December 2005, Section 7). The reliability of current and future water supplies is discussed in Section 7 - Water Service

Reliability. Section 7 also shows that there is sufficient available water for normal years, single dry years, and multiple dry years. As mentioned before, Zone 7 has acquired the water needed by the entire Livermore Amador Valley until 2030. The Zone also has access to significant amounts of groundwater (240,000 AF) inside the main basin. While Livermore Municipal has no groundwater wells, Zone 7 has seven wells in three separate well fields. This groundwater is in addition to all other amounts that Zone 7 has purchased. During Zone 7's six driest years, the amount of groundwater available to the Valley ranged from 13,300 AF in 1992 to 33,400 AF in 1988. Zone 7 water, whether it is surface water or groundwater, goes into their transmission supply mains. Livermore Municipal has supply turnouts spread throughout its service area.

8) Documentation of the groundwater supply

Livermore Municipal does not have a groundwater supply. As mentioned before, Livermore Municipal receives 100% of our treated water from Zone 7. As mentioned above, Zone 7 does have seven groundwater wells to supply water to their transmission lines. Livermore Municipal has no control of which water comes out of the Zone 7 mains. Since Livermore is located in the eastern portion of the Valley, the water received from Zone 7 is usually surface water, but at any time the supply could be surface water, well water, or a blend of the two. For further details of the groundwater supply, see Zone 7's UWMP Section 6 on groundwater in the Livermore Amador Valley.

9) Does the assessment conclude that the water supply is sufficient?

Yes, the assessment concludes that the water supply is sufficient to serve the proposed project based on the following:

a) The UWMP projected water use for Livermore Municipal in 2005 is accurate compared to the actual water use.
b) The UWMP projected water use by demand accounts shows that there is sufficient water based on the project's estimated water use.
c) The ultimate source of water for irrigation in and around the proposed project will be recycled water of which there is an abundant supply as has been demonstrated in the above discussion and Table 4.
d) The Livermore Municipal Code Title 13 and Resolution 1992-34, provides the institutional controls to reduce or curtail the delivery of potable water to the proposed project during emergencies including, but not limited to, multiple dry years.

Appendix E

Traffic Analysis Data

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Table E-1. Study Intersections

Intersection/ Access Point	Location
Study Area Intersection	
1	El Charro Road at I-580 eastbound ramps
2	El Charro Road at Freisman Road
3	Airway Boulevard at North Canyons Parkway
4	Airway Boulevard (SR 84) at I-580 westbound ramps
5	Airway Boulevard (SR 84) at I-580 eastbound ramps
6	Airway Boulevard (SR 84) at East Airway Boulevard–Kitty Hawk Road
7	Collier Canyon Road at North Canyons Parkway
8	Isabel Avenue (SR 84) at Jack London Boulevard
9	Isabel Avenue (SR 84) at East Stanley Boulevard offramp (north)
10	Isabel Avenue (SR 84) at Stanley Boulevard onramp (south)
11	Isabel Avenue (SR 84) at Concannon Boulevard
12	East Vallecitos Road (SR 84) at Isabel Avenue
13	Murrieta Boulevard at East Jack London Boulevard–Pine Street
14	Murrieta Boulevard at East Stanley Boulevard
15	Isabel Avenue–Campus Drive at Portola Avenue [1]
16	Isabel Avenue (SR 84) at I-580 westbound ramps [1]
17	Isabel Avenue (SR 84) at I-580 eastbound ramps [1]
18	El Charro Road at West Jack London Boulevard [1]
19	Isabel Avenue (SR 84) at Airway Boulevard [1]
20	Airway Boulevard at Airway Extension [2]
21	Hacienda Drive at Dublin Boulevard
22	Hacienda Drive at I-580 westbound ramps
23	Tassajara Road at Central Parkway
24	Tassajara Road at Dublin Boulevard
25	Tassajara Road at I-580 westbound ramps
26	Fallon Road at Central Parkway [1]
27	Fallon Road at Dublin Boulevard [1]
28	El Charro Road–Fallon Road at I-580 westbound ramps
29	Hacienda Drive at I-580 eastbound ramps
30	Hacienda Drive at Owens Drive
31	West Las Positas Boulevard at Stoneridge Drive
32	Santa Rita Road at Pimlico Drive–I-580 eastbound ramps

Intersection/ Access Point	Location
33	Santa Rita Road at West Las Positas Boulevard
34	Santa Rita Road at Stoneridge Drive
35	Santa Rita Road at Valley Avenue
36	Rheem Drive–Milani Avenue at Stoneridge Drive
37	Kamp Drive–Garden Circle at Stoneridge Drive
38	Busch Road at Valley Avenue
39	Valley Avenue–Bernal Road at Stanley Boulevard
40	El Charro Road at Busch Road [1]
41	El Charro Road at Stanley Boulevard [1]
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47	Road A at Prime Outlets southerly access[3]
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Notes:

[1] Planned future intersection

[2] Potential future intersection planned with implementation of the El Charro Specific Plan

[3] Future intersection based on implementation of the El Charro Specific Plan

Source: Dowling Associates, Inc., 2006.

Table E-2. Highway Capacity Manual Level of Service Criteria, Signalized Intersections

Level of Service (LOS)	Average Delay (seconds/vehicle)	Description
A	$\leq$ 10	Very low delay: This LOS occurs when progression is extremely favorable and most vehicles arrive during a green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.
B	> 10 and $\leq$ 20	Minimal delays: This LOS generally occurs with good progression, short cycle lengths, or both. More vehicles stop than at LOS A, causing higher levels of average delay.
C	> 20 and $\leq$ 35	Acceptable delay: Delay increases due to fair progression, longer cycle lengths, or both. Individual cycle failures may begin to appear at this LOS. The number of vehicles stopping is significant, though many still pass through the intersection without stopping.
D	> 35 and $\leq$ 55	Approaching unstable operation/significant delays: The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high volume / capacity ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.
E	> 55 and $\leq$ 80	Unstable operation/substantial delays: These high delay values generally indicate poor progression, long cycle lengths, and high volume-to-capacity ratios. Individual cycle failures are frequent occurrences.
F	> 80	Excessive delays: This LOS, considered unacceptable to most drivers, often occurs with oversaturation (that is, when arrival traffic volumes exceed the capacity of the intersection). It may also occur at high volume-to-capacity ratios below 1.0 with many individual cycle failures. Poor progression and long cycle lengths may also be major contributing causes to such delay levels.

Source: *Highway Capacity Manual*, Transportation Research Board, Washington, DC, 2000, Chapter 16 (Signalized Intersections).

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Table E-3. Highway Capacity Manual Level of Service Criteria, Unsignalized Intersections

Level of Service (LOS)	Average Delay (seconds/vehicle)	Description
A	$\leq$ 10	Very low delay
B	> 10 and $\leq$ 15	Minimal delays
C	> 15 and $\leq$ 25	Acceptable delay
D	> 25 and $\leq$ 35	Approaching unstable operation and/or significant delays
E	> 35 and $\leq$ 50	Unstable operation and/or substantial delays
F	> 50	Excessive delays

Source: *Highway Capacity Manual*, Transportation Research Board, Washington, DC, 2000, Chapter 17 (Unsignalized Intersections).

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Table E-4. Freeway Segment LOS for Existing (2006) A.M. and P.M. Peak Hours (No Project)

Location	A.M. Peak LOS[1]	P.M. Peak LOS[1]
I-580 Eastbound		
Hacienda Dr to Santa Rita Rd	A	F
Santa Rita Rd to El Charro Rd	A	E
El Charro Rd to Airway Blvd	A	E
Airway Blvd to Portola Avenue	A	E
I-580 Westbound		
Portola Ave to Airway Blvd	E	A
Airway Blvd to El Charro Rd	E	A
El Charro Rd to Santa Rita Rd	E	A
Santa Rita Rd to Hacienda Dr	D	B

Notes:

Source: 2006 Level of Service Monitoring, Alameda County Congestion Management Agency, July, 2006

[1] LOS = Level of Service

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Table E-5. Intersection Level of Service Using Highway Capacity Manual (HCM) Existing Conditions (2006)

Signalized Intersections[1]	LOS Threshold	Count Date	A.M. Peak Hour LOS	A.M. Peak Hour Average Delay[2]	A.M. Peak Hour V/C	P.M. Peak Hour LOS	P.M. Peak Hour Average Delay[2]	P.M. Peak Hour V/C
Livermore								
3 Airway Blvd at North Canyons Pkwy	E	2005	B	19.4	0.478	B	10.4	0.457
4 Airway Blvd (SR 84) at I-580 westbound ramps	E	2005	B	18.3	0.647	B	20.0	0.431
5 Airway Blvd (SR 84) at I-580 eastbound ramps	E	2005	D	36.6	0.855	C	31.7	0.574
6 Isabel Ave–Kitty Hawk Rd (SR 84) at Airway Blvd	E	2005	C	26.0	0.841	C	20.7	0.630
7 Collier Canyon Rd at North Canyons Pkwy	Midlevel D	2005	A	9.3	0.339	B	10.2	0.402
8 Isabel Ave (SR 84) at Jack London Blvd	Midlevel D	2005	B	11.5	0.464	B	11.5	0.642
9 Isabel Ave (SR 84) at East Stanley Blvd offramp (north)	Midlevel D	2005	B	19.7	0.697	B	18.3	0.886
10 Isabel Ave (SR 84) at Stanley Blvd onramp (south)	Midlevel D	2005	C	22.5	0.571	C	25.5	0.539
11 Isabel Ave (SR 84) at Concannon Blvd	Midlevel D	2005	C	22.0	0.529	C	25.9	0.740
12 East Vallecitos Rd (SR 84) at Isabel Ave	Midlevel D	2005	E	58.2	1.011	D	43.1	1.012
13 Murrieta Blvd at East Jack London Blvd–Pine St	Midlevel D	2005	E	71.5	1.012	C	31.8	0.491
14 Murrieta Blvd at East Stanley Blvd	Midlevel D	2005	D	43.6	0.900	C	32.0	0.707
15 Isabel Ave–Campus Dr at Portola Ave	E	*Future Intersection*						
16 Isabel Ave (SR 84) at I-580 westbound ramps	E	*Future Intersection*						
17 Isabel Ave (SR 84) at I-580 eastbound ramps	E	*Future Intersection*						
18 El Charro Rd at West Jack London Blvd	Midlevel D	*Future Intersection*						
19 Isabel Ave (SR 84) at Airway Blvd	E	*Future Intersection*						
20 Airway Blvd at Airway Extension	Midlevel D	*Future Project Intersection*						
Dublin								
21 Hacienda Dr at Dublin Blvd	E	Feb-04	C	25.0	0.300	C	25.0	0.424
22 Hacienda Dr at I-580 westbound ramps	E	Jun-04	B	16.3	0.469	B	12.1	0.519
23 Tassajara Rd at Central Pkwy	E	Jun-04	A	3.1	0.275	A	4.0	0.329
24 Tassajara Rd at Dublin Blvd	E	Jun-04	B	16.9	0.267	C	21.1	0.391
25 Tassajara Rd at I-580 westbound ramps	E	Jun-04	B	15.0	0.423	B	15.3	0.454
26 Fallon Rd at Central Pkwy	E	*Future Intersection*						
27 Fallon Rd at Dublin Blvd	E	*Future Intersection*						

Table E-5. Continued

Signalized Intersections[1]	LOS Threshold	Count Date	A.M. Peak Hour LOS	A.M. Peak Hour Average Delay[2]	A.M. Peak Hour V/C	P.M. Peak Hour LOS	P.M. Peak Hour Average Delay[2]	P.M. Peak Hour V/C
Pleasanton								
29 Hacienda Dr at I-580 eastbound ramps	E	2003	B	18.5	0.569	B	18.1	0.581
30 Hacienda Dr at Owens Dr	E	2003	C	20.2	0.362	C	31.8	0.591
31 West Las Positas Blvd at Stoneridge Dr	E	2003	C	24.5	0.325	C	28.3	0.488
32 Santa Rita Rd at Pimlico Dr–I-580 eastbound ramps	E	2003	D	41.4	0.568	C	20.4	0.613
33 Santa Rita Rd at West Las Positas Blvd	E	2003	C	26.1	0.472	C	31.1	0.574
34 Santa Rita Rd at Stoneridge Dr	E	2003	C	27.9	0.739	C	31.2	0.665
35 Santa Rita Rd at Valley Ave	E	2003	D	36.6	0.758	C	34.5	0.773
36 Rheem Dr–Milani Ave at Stoneridge Dr	E	2003	B	13.3	0.166	B	12.1	0.202
37 Kamp Dr–Garden Cir at Stoneridge Dr	E	2003	B	13.3	0.161	A	3.7	0.082
38 Busch Rd at Valley Ave	E	2003	D	35.2	0.931	C	20.9	0.667
39 Valley Ave–Bernal Rd at Stanley Blvd	E	2003	C	26.2	0.760	C	31.7	0.826
40 El Charro Rd at Busch Rd	E	*Future Intersection*						
41 El Charro Rd at Stanley Blvd	E	*Future Intersection*						

Unsignalized Intersections[3]			A.M. Peak-Hour LOS	A.M. Peak-Hour Worst Delay[4]	A.M. Peak-Hour Average Delay[2]	P.M. Peak-Hour LOS	P.M. Peak-Hour Worst Delay[4]	P.M. Peak-Hour Average Delay[2]
1 El Charro Rd at I-580 eastbound ramps[5]	Mid-level D	Oct-06	A	9.7	4.9	F	Overflow	Overflow
2 El Charro Rd at Freisman Rd	None	Oct-06	A	0.0	0.0	A	8.7	2.1
28 El Charro Rd–Fallon Rd at I-580 westbound ramps[5]	E	Oct-06	A	4.2	9.7	B	13.8	0.9

Notes:

LOS = level of service; V/C = volume-to-capacity ratio

1 Calculations for LOS at signalized intersections are based on weighted average delay.

2 Weighted average control delay per vehicle in seconds.

3 Calculations for LOS at side-street stop-controlled intersections are based on the intersection leg with the worst delay, but the weighted average delay was also calculated for reference.

4 Weighted average control delay per vehicle on the intersection leg with the worst LOS.

5 Offramp stop-controlled with free right turns, which will be signalized in the future.

Source: TRAFFIX, Dowling Associates, Inc., October 2006.

Table E-6. Freeway Operations—Baseline (2008)

Location	Type	Volume[1]	Density[2]	LOS[3]
I-580 Eastbound—A.M. Peak				
Hacienda Dr to Santa Rita Rd	Weave	6,044	21.1	C
Santa Rita Rd to El Charro Rd	Mainline	6,476	22.0	C
El Charro Rd to Airway Blvd	Mainline	6,880	30.2	D
Airway Blvd to Portola Ave	Mainline	5,573	23.7	C
I-580 Westbound—A.M. Peak				
Portola Ave to Airway Blvd	Mainline	8,258	41.8	E
Airway Blvd to El Charro Rd	Mainline	8,651	>45	F
El Charro Rd to Santa Rita Rd	Mainline	7,701	36.1	E
Santa Rita Rd to Hacienda Dr	Weave	8,276	29.7	D
I-580 Eastbound—P.M. Peak				
Hacienda Dr to Santa Rita Rd	Weave	9,088	35.3	E
Santa Rita Rd to El Charro Rd	Mainline	8,351	29.1	D
El Charro Rd to Airway Blvd	Mainline	9,011	>45	F
Airway Blvd to Portola Ave	Mainline	8,237	41.6	E
I-580 Westbound—P.M. Peak				
Portola Ave to Airway Blvd	Mainline	5,811	24.8	C
Airway Blvd to El Charro Rd	Mainline	6,588	28.6	D
El Charro Rd to Santa Rita Rd	Mainline	6,248	26.8	D
Santa Rita Rd to Hacienda Dr	Weave	6,579	23.2	C

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Table E-7. Intersection LOS and V/C for Baseline (2008) AM & PM Peak-Hours (No Project)

Signalized Intersections	AM Peak-Hour			PM Peak-Hour		
	LOS	Average Delay	V/C	LOS	Average Delay	V/C
Livermore						
1 El Charro Rd at I-580 eastbound ramps	B	13.5	0.378	A	9.7	0.243
3 Airway Blvd at North Canyons Pkwy	C	25.1	0.694	B	17.2	0.538
4 Airway Blvd (SR-84) at I-580 westbound ramps	B	19.1	0.739	B	19.9	0.506
5 Airway Blvd (SR-84) at I-580 eastbound ramps	D	41.5	0.918	C	30.5	0.543
6 Isabel Ave-Kitty Hawk Rd (SR-84) at Airway Blvd	E	70.4	1.108	C	28.0	0.788
7 Collier Canyon Rd at North Canyons Pkwy	B	10.8	0.458	B	11.0	0.460
8 Isabel Ave (SR-84) at Jack London Blvd	B	13.2	0.528	C	22.2	0.884
9 Isabel Ave (SR-84) at East Stanley Blvd off-ramp (north)	B	20.0	0.735	C	22.3	0.907
10 Isabel Ave (SR-84) at Stanley Blvd on-ramp (south)	C	23.0	0.579	C	26.4	0.590
11 Isabel Ave (SR-84) at Concannon Blvd	C	22.6	0.563	C	26.6	0.800
12 East Vallecitos Rd (SR-84) at Isabel Ave	C	29.2	0.911	B	16.0	0.800
13 Murrieta Blvd at East Jack London Blvd-Pine St	***E***	***71.5***	***1.001***	***D***	***48.4***	***0.873***
14 Murrieta Blvd at East Stanley Blvd	C	34.6	0.809	C	32.8	0.750
15 Isabel Ave-Campus Dr at Portola Ave	*Future Intersection*					
16 Isabel Ave (SR-84) at I-580 westbound ramps	*Future Intersection*					
17 Isabel Ave (SR-84) at I-580 eastbound ramps	*Future Intersection*					
18 El Charro Rd at West Jack London Blvd	*Future Intersection*					
19 Isabel Ave (SR-84) at Airway Blvd	*Future Intersection*					
20 Airway Blvd at Airway Extension	*Future Intersection*					
Dublin						
21 Hacienda Dr at Dublin Blvd	D	37.8	0.898	C	32.1	0.718
22 Hacienda Dr at I-580 westbound ramps	B	18.6	0.557	B	16.9	0.751
23 Tassajara Rd at Central Pkwy	C	20.5	0.690	B	15.3	0.768
24 Tassajara Rd at Dublin Blvd	C	25.4	0.467	C	26.8	0.835
25 Tassajara Rd at I-580 westbound ramps	B	15.7	0.679	C	21.1	0.944
26 Fallon Rd at Central Pkwy	B	18.9	0.429	B	19.0	0.337
27 Fallon Rd at Dublin Blvd	C	23.3	0.561	B	19.6	0.391
28 El Charro Rd-Fallon Rd at I-580 westbound ramps	B	14.0	0.588	B	12.9	0.452
Pleasanton						
29 Hacienda Dr at I-580 eastbound ramps	B	19.9	0.644	B	18.4	0.588
30 Hacienda Dr at Owens Dr	B	19.3	0.428	C	32.4	0.650
31 West Las Positas Blvd at Stoneridge Dr	C	25.4	0.337	C	29.0	0.498
32 Santa Rita Rd at Pimlico Dr-I-580 eastbound ramps	D	53.1	0.803	D	36.2	0.898
33 Santa Rita Rd at West Las Positas Blvd	C	24.8	0.568	C	33.4	0.779
34 Santa Rita Rd at Stoneridge Dr	C	29.6	0.837	C	33.3	0.833
35 Santa Rita Rd at Valley Ave	D	40.6	0.860	D	44.6	0.918
36 Rheem Dr-Milani Ave at Stoneridge Dr	B	13.2	0.167	B	12.0	0.204
37 Kamp Dr-Garden Cir at Stoneridge Dr	B	13.7	0.165	A	3.8	0.083
38 Busch Rd at Valley Ave	D	44.8	0.998	C	23.9	0.752
39 Valley Ave-Bernal Rd at Stanley Blvd	C	30.1	0.821	D	37.1	0.916
40 El Charro Rd at Busch Rd	*Future Intersection*					
41 El Charro Rd at Stanley Blvd	*Future Intersection*					
Unsignalized Intersections	**AM Peak-Hour**			**PM Peak-Hour**		
	LOS	**Worst Delay**	**Average Delay**	**LOS**	**Worst Delay**	**Average Delay**
2 El Charro Rd at Freisman Rd	A	9.0	0.3	A	8.8	3.5

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Table E-8. Twelve-Hour Truck Count on El Charro Road between Freisman Road and I-580 during Peak Commute Hours

Vehicle Type	12-Hour Total				8:00-9:00 AM Peak Hour				4:45-5:45 PM Peak Hour			
	Northbound		Southbound		Northbound		Southbound		Northbound		Southbound	
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
Gravel Trucks	773	55.8%	761	60.2%	69	61.1%	63	66.3%	3	5.2%	9	23.1%
Garbage Trucks	31	2.2%	33	2.6%	3	2.7%	3	3.2%	0	0.0%	0	0.0%
Cement Trucks	100	7.2%	97	7.7%	9	8.0%	5	5.3%	2	3.4%	12	30.8%
Other Trucks	132	9.5%	101	8.0%	20	17.7%	16	16.8%	3	5.2%	6	15.4%
All Other Vehicles	350	25.3%	273	21.6%	12	10.6%	8	8.4%	50	86.2%	12	30.8%
Total	**1386**	**100%**	**1265**	**100%**	**113**	**100%**	**95**	**100%**	**58**	**100%**	**39**	**100%**

Count conducted on Wednesday, October 18, 2006 by Wiltec

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Table E-9. Twenty-Four Hour Vehicle Counts on El Charro Road near Freisman Road

Day/Direction	Northbound	Southbound	Total
Monday	1,762	2,168	3,930
Tuesday	1,935	1,891	3,826
Wednesday	2,331	1,799	4,129
Thursday	2,103	1,918	4,020
Friday	1,727	1,968	3,695
Weekday Average	**1,972**	**1,949**	**3,920**
Saturday	1,432	1,639	3,071
Sunday	331	352	683
Weekend Average	**882**	**996**	**1,877**

Counts conducted by Wiltec from October 19 to October 25, 2006

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Table E-10. Trip Generation

Phase	Prime Outlets Livermore Valley Only	Full Project
Use	Retail	Retail
Size	550	1,449
Units	ksf	ksf
ITE Code	820	820
Daily Rate	42.92	42.92
Daily Trips	23,606	62,191
A.M. Peak Hour		
Rate	1.03	1.03
% In	0.61	0.61
% Out	0.39	0.39
In	346	910
Out	221	582
P.M. Peak Hour		
Rate	3.74	3.74
% In	0.48	0.48
% Out	0.52	0.52
In	987	2,601
Out	1,070	2,818

Note:

ksf = thousand square feet

Source: *ITE Trip Generation, 6th Edition*, and City of Livermore Model.

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Table E-11. Freeway Operations—2008 with Prime Outlets Livermore Valley

Location	Type	Baseline			2008 with Prime Outlets Livermore Valley		
		Volume[1]	Density[2]	LOS[3]	Volume[1]	Density[2]	LOS[3]
I-580 Eastbound—A.M. Peak							
Hacienda Dr to Santa Rita Rd	Weave	6,044	21.1	C	6,094	21.3	C
Santa Rita Rd to El Charro Rd	Mainline	6,476	22.0	C	6,521	22.2	C
El Charro Rd to Airway Blvd	Mainline	6,880	30.2	D	6,829	29.9	D
Airway Blvd to Portola Ave	Mainline	5,573	23.7	C	5,545	23.6	C
I-580 Westbound—A.M. Peak							
Portola Ave to Airway Blvd	Mainline	8,258	41.8	E	8,245	41.6	E
Airway Blvd to El Charro Rd	Mainline	8,651	>45	F	8,565	>45	F
El Charro Rd to Santa Rita Rd	Mainline	7,701	36.1	E	7,662	35.8	E
Santa Rita Rd to Hacienda Dr	Weave	8,276	29.7	D	8,261	29.8	D
I-580 Eastbound—P.M. Peak							
Hacienda Dr to Santa Rita Rd	Weave	9,088	35.3	E	8,967	34.8	D
Santa Rita Rd to El Charro Rd	Mainline	8,351	29.1	D	8,480	29.7	D
El Charro Rd to Airway Blvd	Mainline	9,011	>45	F	9,005	>45	F
Airway Blvd to Portola Ave	Mainline	8,237	41.6	E	8,230	41.5	E
I-580 Westbound—P.M. Peak							
Portola Ave to Airway Blvd	Mainline	5,811	24.8	C	5,840	24.9	C
Airway Blvd to El Charro Rd	Mainline	6,588	28.6	D	6,663	29.0	D
El Charro Rd to Santa Rita Rd	Mainline	6,248	26.8	D	6,306	27.1	D
Santa Rita Rd to Hacienda Dr	Weave	6,579	23.2	C	6,677	23.7	C

Notes:

Significance criteria = Decline to F; if already F, velocity-to-capacity ratio increase by 3%; significant impacts in **bold** (none in this table)

[1] Volume = vehicles per hour (vph)

[2] Density = passenger car per mile per lane (pc/m/ln)

[3] LOS = level of service

Source: Dowling Associates, Inc., 2006.

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Table E-12. AM Peak-Hour Intersection LOS and V/C Analysis for Baseline (2008) with and without Prime Outlets Livermore Valley

Signalized Intersections	No Project			With Prime Outlets		
	LOS	Average Delay	V/C	LOS	Average Delay	V/C
Livermore						
1 El Charro Rd at I-580 eastbound ramps	B	13.5	0.378	C	22.8	0.516
3 Airway Blvd at North Canyons Pkwy	C	25.1	0.694	C	25.2	0.699
4 Airway Blvd (SR-84) at I-580 westbound ramps	B	19.1	0.739	B	19.3	0.743
5 Airway Blvd (SR-84) at I-580 eastbound ramps	D	41.5	0.918	D	40.5	0.907
6 Isabel Ave-Kitty Hawk Rd (SR-84) at Airway Blvd	E	70.4	1.108	E	66.0	1.092
7 Collier Canyon Rd at North Canyons Pkwy	B	10.8	0.458	B	10.8	0.458
8 Isabel Ave (SR-84) at Jack London Blvd	B	13.2	0.528	B	12.7	0.513
9 Isabel Ave (SR-84) at East Stanley Blvd off-ramp (north)	B	20.0	0.735	B	19.9	0.740
10 Isabel Ave (SR-84) at Stanley Blvd on-ramp (south)	C	23.0	0.579	C	22.7	0.573
11 Isabel Ave (SR-84) at Concannon Blvd	C	22.6	0.563	C	22.4	0.564
12 East Vallecitos Rd (SR-84) at Isabel Ave	C	29.2	0.911	C	28.9	0.910
13 Murrieta Blvd at East Jack London Blvd-Pine St	***E***	***71.5***	***1.001***	***E***	***67.0***	***0.984***
14 Murrieta Blvd at East Stanley Blvd	C	34.6	0.809	C	34.7	0.809
15 Isabel Ave-Campus Dr at Portola Ave	*Future Intersection*					
16 Isabel Ave (SR-84) at I-580 westbound ramps	*Future Intersection*					
17 Isabel Ave (SR-84) at I-580 eastbound ramps	*Future Intersection*					
18 El Charro Rd at West Jack London Blvd	*Future Intersection*			B	16.6	0.285
19 Isabel Ave (SR-84) at Airway Blvd	*Future Intersection*					
20 Airway Blvd at Airway Extension	*Future Project Intersection*					
Dublin						
21 Hacienda Dr at Dublin Blvd	D	37.8	0.898	C	34.2	0.828
22 Hacienda Dr at I-580 westbound ramps	B	18.6	0.557	B	18.8	0.555
23 Tassajara Rd at Central Pkwy	C	20.5	0.690	B	19.7	0.678
24 Tassajara Rd at Dublin Blvd	C	25.4	0.467	C	32.7	0.728
25 Tassajara Rd at I-580 westbound ramps	B	15.7	0.679	B	15.7	0.679
26 Fallon Rd at Central Pkwy	B	18.9	0.429	B	19.9	0.434
27 Fallon Rd at Dublin Blvd	C	23.3	0.561	C	24.5	0.588
28 El Charro Rd-Fallon Rd at I-580 westbound ramps	B	14.0	0.588	B	16.8	0.490
Pleasanton						
29 Hacienda Dr at I-580 eastbound ramps	B	19.9	0.644	C	20.1	0.654
30 Hacienda Dr at Owens Dr	B	19.3	0.428	B	18.9	0.452
31 West Las Positas Blvd at Stoneridge Dr	C	25.4	0.337	C	25.4	0.325
32 Santa Rita Rd at Pimlico Dr-I-580 eastbound ramps	D	53.1	0.803	D	53.4	0.816
33 Santa Rita Rd at West Las Positas Blvd	C	24.8	0.568	C	24.6	0.578
34 Santa Rita Rd at Stoneridge Dr	C	29.6	0.837	C	29.6	0.843
35 Santa Rita Rd at Valley Ave	D	40.6	0.860	D	41.7	0.870
36 Rheem Dr-Milani Ave at Stoneridge Dr	B	13.2	0.167	B	13.2	0.167
37 Kamp Dr-Garden Cir at Stoneridge Dr	B	13.7	0.165	B	13.7	0.165
38 Busch Rd at Valley Ave	D	44.8	0.998	D	47.6	1.012
39 Valley Ave-Bernal Rd at Stanley Blvd	C	30.1	0.821	C	30.1	0.836
40 El Charro Rd at Busch Rd	*Future Intersection*					
41 El Charro Rd at Stanley Blvd	*Future Intersection*					
Unsignalized Intersection	**LOS**	**Worst Delay**	**Average Delay**	**LOS**	**Worst Delay**	**Average Delay**
2 El Charro Rd at Freisman Rd	A	9.0	0.3	*Eliminated Intersection*		

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Table E-13. PM Peak-Hour Intersection LOS and V/C Analysis for Baseline (2008) with and without Prime Outlets Livermore Valley

Signalized Intersections	No Project			With Prime Outlets		
	LOS	Average Delay	V/C	LOS	Average Delay	V/C
Livermore						
1 El Charro Rd at I-580 eastbound ramps	A	9.7	0.243	C	22.8	0.726
3 Airway Blvd at North Canyons Pkwy	B	17.2	0.538	B	17.1	0.543
4 Airway Blvd (SR-84) at I-580 westbound ramps	B	19.9	0.506	B	19.7	0.511
5 Airway Blvd (SR-84) at I-580 eastbound ramps	C	30.5	0.543	C	32.0	0.600
6 Isabel Ave-Kitty Hawk Rd (SR-84) at Airway Blvd	C	28.0	0.788	C	28.7	0.792
7 Collier Canyon Rd at North Canyons Pkwy	B	11.0	0.460	B	11.0	0.462
8 Isabel Ave (SR-84) at Jack London Blvd	C	22.2	0.884	C	24.7	0.911
9 Isabel Ave (SR-84) at East Stanley Blvd off-ramp (north)	C	22.3	0.907	C	28.2	0.963
10 Isabel Ave (SR-84) at Stanley Blvd on-ramp (south)	C	26.4	0.590	C	27.1	0.613
11 Isabel Ave (SR-84) at Concannon Blvd	C	26.6	0.800	C	26.1	0.790
12 East Vallecitos Rd (SR-84) at Isabel Ave	B	16.0	0.800	B	16.1	0.803
13 Murrieta Blvd at East Jack London Blvd-Pine St	***D***	***48.4***	***0.873***	***E***	***61.1***	***0.958***
14 Murrieta Blvd at East Stanley Blvd	C	32.8	0.750	C	33.6	0.755
15 Isabel Ave-Campus Dr at Portola Ave	*Future Intersection*					
16 Isabel Ave (SR-84) at I-580 westbound ramps	*Future Intersection*					
17 Isabel Ave (SR-84) at I-580 eastbound ramps	*Future Intersection*					
18 El Charro Rd at West Jack London Blvd	*Future Intersection*			C	23.4	0.620
19 Isabel Ave (SR-84) at Airway Blvd	*Future Intersection*					
20 Airway Blvd at Airway Extension	*Future Project Intersection*					
Dublin						
21 Hacienda Dr at Dublin Blvd	C	32.1	0.718	C	32.3	0.716
22 Hacienda Dr at I-580 westbound ramps	B	16.9	0.751	B	18.2	0.766
23 Tassajara Rd at Central Pkwy	B	15.3	0.768	B	14.7	0.758
24 Tassajara Rd at Dublin Blvd	C	26.8	0.835	D	38.8	0.968
25 Tassajara Rd at I-580 westbound ramps	C	21.1	0.944	B	17.4	0.869
26 Fallon Rd at Central Pkwy	B	19.0	0.337	C	20.8	0.413
27 Fallon Rd at Dublin Blvd	B	19.6	0.391	C	22.7	0.605
28 El Charro Rd-Fallon Rd at I-580 westbound ramps	B	12.9	0.452	B	14.5	0.562
Pleasanton						
29 Hacienda Dr at I-580 eastbound ramps	B	18.4	0.588	B	18.5	0.593
30 Hacienda Dr at Owens Dr	C	32.4	0.650	C	32.3	0.649
31 West Las Positas Blvd at Stoneridge Dr	C	29.0	0.498	C	29.0	0.499
32 Santa Rita Rd at Pimlico Dr-I-580 eastbound ramps	D	36.2	0.898	D	37.7	0.926
33 Santa Rita Rd at West Las Positas Blvd	C	33.4	0.779	C	33.6	0.806
34 Santa Rita Rd at Stoneridge Dr	C	33.3	0.833	C	34.5	0.871
35 Santa Rita Rd at Valley Ave	D	44.6	0.918	D	46.3	0.935
36 Rheem Dr-Milani Ave at Stoneridge Dr	B	12.0	0.204	B	11.0	0.224
37 Kamp Dr-Garden Cir at Stoneridge Dr	A	3.8	0.083	A	3.8	0.083
38 Busch Rd at Valley Ave	C	23.9	0.752	C	24.0	0.763
39 Valley Ave-Bernal Rd at Stanley Blvd	D	37.1	0.916	D	39.4	0.939
40 El Charro Rd at Busch Rd	*Future Intersection*					
41 El Charro Rd at Stanley Blvd	*Future Intersection*					
Unsignalized Intersection	**LOS**	**Worst Delay**	**Average Delay**	**LOS**	**Worst Delay**	**Average Delay**
2 El Charro Rd at Freisman Rd	A	8.8	3.5	*Eliminated Intersection*		

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Table E-14. Level of Service Summary for Site Access Intersections

Intersection		Control	Time Period	2008 Baseline + Prime Outlets Livermore Valley		2008 Baseline + Full Project (Jack London Ext.)		2008 Baseline + Full Project (Airway Ext.)		2030 Cumulative + Full Project (Jack London Ext.)		2030 Cumulative + Full Project (Airway Ext.)	
				LOS	Delay [1]	LOS	Delay [1]	LOS	Delay [1]	LOS	Delay [1]	LOS	Delay [1]
42	Road A at W Jack London Blvd	Signal	A.M.	A	7.3	B	15.8	B	15.8	B	13.5	B	13.0
			P.M.	B	12.3	C	26.1	C	31.7	D	41.2	D	40.8
43	Road C access at Jack London/Airway Boulevard	Stop Sign	A.M.	N/A	N/A	B	11.1	B	10.5	C	17.1	C	17.4
			P.M.	N/A	N/A	C	21.0	C	19.6	D	26.5	C	20.4
44	Prime Outlets access at Jack London/Airway Boulevard	Stop Sign	A.M.	A	8.7	B	10.7	B	10.2	B	12.3	B	11.8
			P.M.	B	11.4	B	14.6	B	15.0	C	19.3	C	19.9
45	Road B at Jack London/Airway Boulevard [2]	Signal	A.M.	N/A	N/A	A	9.3	A	9.8	A	9.0	A	8.5
			P.M.	N/A	N/A	B	12.7	B	13.7	C	22.7	C	24.7
46	Johnson-Himsl access at El Charro Road	Stop Sign	A.M.	N/A	N/A	A	9.5	A	9.5	B	11.7	B	13.2
			P.M.	N/A	N/A	A	9.4	A	9.4	B	13.5	B	14.1

[1] At signalized intersections, “delay” refers to average stop-control delay per vehicle in seconds. At stop-controlled intersections, "delay" refers to the average stop-control delay per vehicle in seconds on the leg with the worst level of service.
[2] LOS and delay at intersection 45 is based on a southbound right turn overlap, which would require the prohibition of U-turns from eastbound left-turn lane, and optimized signal timing.

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Table E-15. Freeway Operations—2008 Full Project (Jack London Boulevard Extension)

Location	Type	Baseline			2008 Full Project		
		Volume[1]	Density[2]	LOS[3]	Volume[1]	Density[2]	LOS[3]
I-580 Eastbound—A.M. Peak							
Hacienda Dr to Santa Rita Rd	Weave	6,044	21.1	C	6,368	22.3	C
Santa Rita Rd to El Charro Rd	Mainline	6,476	22.0	C	6,910	23.5	C
El Charro Rd to Airway Blvd	Mainline	6,880	30.2	D	6,751	29.5	D
Airway Blvd to Portola Ave	Mainline	5,573	23.7	C	5,661	24.1	C
I-580 Westbound—A.M. Peak							
Portola Ave to Airway Blvd	Mainline	8,258	41.8	E	8,047	39.5	E
Airway Blvd to El Charro Rd	Mainline	8,651	>45	F	8,301	42.3	E
El Charro Rd to Santa Rita Rd	Mainline	7,701	36.1	E	7,722	36.3	E
Santa Rita Rd to Hacienda Dr	Weave	8,276	29.7	D	8,135	29.1	D
I-580 Eastbound—P.M. Peak							
Hacienda Dr to Santa Rita Rd	Weave	9,088	35.3	E	9,245	35.9	E
Santa Rita Rd to El Charro Rd	Mainline	8,351	29.1	D	8,736	30.9	D
El Charro Rd to Airway Blvd	Mainline	9,011	>45	F	8,864	>45	F
Airway Blvd to Portola Ave	Mainline	8,237	41.6	E	8,127	40.3	E
I-580 Westbound—P.M. Peak							
Portola Ave to Airway Blvd	Mainline	5,811	24.8	C	5,848	24.9	C
Airway Blvd to El Charro Rd	Mainline	6,588	28.6	D	6,630	28.8	D
El Charro Rd to Santa Rita Rd	Mainline	6,248	26.8	D	6,581	28.5	D
Santa Rita Rd to Hacienda Dr	Weave	6,579	23.2	C	6,910	24.6	C

Notes:

Significance criteria = Decline to F; if already F, velocity-to-capacity ratio increase by 3%; significant impacts in **bold** (none in this table)

[1] Volume = vehicles per hour (vph)

[2] Density = passenger car per mile per lane (pc/m/ln)

[3] LOS = level of service

Source: Dowling Associates, Inc., 2006.

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Table E-16. Freeway Operations—2008 Full Project (Airway Boulevard Extension)

Location	Type	Baseline			P.M. Peak Hour		
		Volume[1]	Density[2]	LOS[3]	Volume[1]	Density[2]	LOS[3]
I-580 Eastbound—A.M. Peak							
Hacienda Dr to Santa Rita Rd	Weave	6,044	21.1	C	6,353	22.2	C
Santa Rita Rd to El Charro Rd	Mainline	6,476	22.0	C	6,927	23.6	C
El Charro Rd to Airway Blvd	Mainline	6,880	30.2	D	6,735	29.4	D
Airway Blvd to Portola Ave	Mainline	5,573	23.7	C	5,699	24.3	C
I-580 Westbound—A.M. Peak							
Portola Ave to Airway Blvd	Mainline	8,258	41.8	E	8,286	42.2	E
Airway Blvd to El Charro Rd	Mainline	8,651	>45	F	8,125	40.3	E
El Charro Rd to Santa Rita Rd	Mainline	7,701	36.1	E	7,666	35.8	E
Santa Rita Rd to Hacienda Dr	Weave	8,276	29.7	D	8,126	29.1	D
I-580 Eastbound—P.M. Peak							
Hacienda Dr to Santa Rita Rd	Weave	9,088	35.3	E	9,212	35.6	E
Santa Rita Rd to El Charro Rd	Mainline	8,351	29.1	D	8,644	30.5	D
El Charro Rd to Airway Blvd	Mainline	9,011	>45	F	8,849	>45	F
Airway Blvd to Portola Ave	Mainline	8,237	41.6	E	8,380	43.3	E
I-580 Westbound—P.M. Peak							
Portola Ave to Airway Blvd	Mainline	5,811	24.8	C	5,941	25.4	C
Airway Blvd to El Charro Rd	Mainline	6,588	28.6	D	6,566	28.4	D
El Charro Rd to Santa Rita Rd	Mainline	6,248	26.8	D	6,584	28.5	D
Santa Rita Rd to Hacienda Dr	Weave	6,579	23.2	C	6,897	24.6	C

Notes:

Significance criteria = Decline to F; if already F, velocity-to-capacity increase by 3%; significant impacts in **bold** (none in this table)

[1] Volume = vehicles per hour (vph)

[2] Density = passenger car per mile per lane (pc/m/ln)

[3] LOS = level of service

Source: Dowling Associates, Inc., 2006.

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Table E-17. A.M. Peak-Hour Intersection LOS and V/C Analysis for Baseline (2008) with and without Full Project Buildout—Jack London Boulevard Extension Option

Signalized Intersections	No Project			Full Project		
	LOS	Average Delay	V/C	LOS	Average Delay	V/C
Livermore						
1 El Charro Rd at I-580 eastbound ramps	B	13.5	0.378	***F***	***94.7***	***1.174***
3 Airway Blvd at North Canyons Pkwy	C	25.1	0.694	C	24.0	0.669
4 Airway Blvd (SR-84) at I-580 westbound ramps	B	19.1	0.739	B	18.9	0.718
5 Airway Blvd (SR-84) at I-580 eastbound ramps	D	41.5	0.918	D	41.0	0.900
6 Isabel Ave-Kitty Hawk Rd (SR-84) at Airway Blvd	E	70.4	1.108	D	54.7	1.014
7 Collier Canyon Rd at North Canyons Pkwy	B	10.8	0.458	B	10.8	0.456
8 Isabel Ave (SR-84) at Jack London Blvd	B	13.2	0.528	B	15.9	0.729
9 Isabel Ave (SR-84) at East Stanley Blvd off-ramp (north)	B	20	0.735	B	19.5	0.709
10 Isabel Ave (SR-84) at Stanley Blvd on-ramp (south)	C	23	0.579	C	24.0	0.601
11 Isabel Ave (SR-84) at Concannon Blvd	C	22.6	0.563	C	22.1	0.585
12 East Vallecitos Rd (SR-84) at Isabel Ave	C	29.2	0.911	C	31.5	0.928
13 Murrieta Blvd at East Jack London Blvd-Pine St	***E***	***71.5***	***1.001***	***E***	***58.7***	***0.995***
14 Murrieta Blvd at East Stanley Blvd	C	34.6	0.809	D	35.9	0.835
15 Isabel Ave-Campus Dr at Portola Ave	*Future Intersection*					
16 Isabel Ave (SR-84) at I-580 westbound ramps	*Future Intersection*					
17 Isabel Ave (SR-84) at I-580 eastbound ramps	*Future Intersection*					
18 El Charro Rd at West Jack London Blvd	*Future Intersection*			C	22.9	0.696
19 Isabel Ave (SR-84) at Airway Blvd	*Future Intersection*					
20 Airway Blvd at Airway Extension	*Future Project Intersection*					
Dublin						
21 Hacienda Dr at Dublin Blvd	D	37.8	0.898	D	38.5	0.897
22 Hacienda Dr at I-580 westbound ramps	B	18.6	0.557	B	18.7	0.550
23 Tassajara Rd at Central Pkwy	C	20.5	0.690	B	18.7	0.638
24 Tassajara Rd at Dublin Blvd	C	25.4	0.467	C	28.2	0.547
25 Tassajara Rd at I-580 westbound ramps	B	15.7	0.679	B	15.4	0.661
26 Fallon Rd at Central Pkwy	B	18.9	0.429	C	22.3	0.483
27 Fallon Rd at Dublin Blvd	C	23.3	0.561	C	32.9	0.877
28 El Charro Rd-Fallon Rd at I-580 westbound ramps	B	14.0	0.588	B	15.8	0.706
Pleasanton						
29 Hacienda Dr at I-580 eastbound ramps	B	19.9	0.644	B	19.5	0.617
30 Hacienda Dr at Owens Dr	B	19.3	0.428	B	19.8	0.428
31 West Las Positas Blvd at Stoneridge Dr	C	25.4	0.337	C	25.4	0.351
32 Santa Rita Rd at Pimlico Dr-I-580 eastbound ramps	D	53.1	0.803	D	42.3	0.853
33 Santa Rita Rd at West Las Positas Blvd	C	24.8	0.568	C	25.1	0.574
34 Santa Rita Rd at Stoneridge Dr	C	29.6	0.837	C	29.4	0.832
35 Santa Rita Rd at Valley Ave	D	40.6	0.860	D	41.1	0.856
36 Rheem Dr-Milani Ave at Stoneridge Dr	B	13.2	0.167	B	13.2	0.167
37 Kamp Dr-Garden Cir at Stoneridge Dr	B	13.7	0.165	B	13.7	0.165
38 Busch Rd at Valley Ave	D	44.8	0.998	D	44.3	0.987
39 Valley Ave-Bernal Rd at Stanley Blvd	C	30.1	0.821	C	27.9	0.762
40 El Charro Rd at Busch Rd	*Future Intersection*					
41 El Charro Rd at Stanley Blvd	*Future Intersection*					
Unsignalized Intersection	**LOS**	**Worst Delay**	**Average Delay**	**LOS**	**Worst Delay**	**Average Delay**
2 El Charro Rd at Freisman Rd	A	9.0	0.3	*Eliminated Intersection*		

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Table E-18. A.M. Peak Hour Intersection LOS Using Highway Capacity Manual (HCM) Baseline (2008) Conditions with and without Full Project—Airway Boulevard Extension

		No Project			Full Project		
	Signalized Intersections	**LOS**	**Average Delay**	**V/C**	**LOS**	**Average Delay**	**V/C**
Livermore							
1	El Charro Rd at I-580 eastbound ramps	B	13.5	0.378	***E***	***59.5***	***1.056***
3	Airway Blvd at North Canyons Pkwy	C	25.1	0.694	C	23.5	0.658
4	Airway Blvd (SR-84) at I-580 westbound ramps	B	19.1	0.739	B	19.4	0.712
5	Airway Blvd (SR-84) at I-580 eastbound ramps	D	41.5	0.918	E	55.6	0.995
6	Isabel Ave-Kitty Hawk Rd (SR-84) at Airway Blvd	E	70.4	1.108	D	53.1	1.060
7	Collier Canyon Rd at North Canyons Pkwy	B	10.8	0.458	B	10.8	0.457
8	Isabel Ave (SR-84) at Jack London Blvd	B	13.2	0.528	C	21.2	0.510
9	Isabel Ave (SR-84) at East Stanley Blvd off-ramp (north)	B	20	0.735	C	21.1	0.725
10	Isabel Ave (SR-84) at Stanley Blvd on-ramp (south)	C	23	0.579	C	25.4	0.709
11	Isabel Ave (SR-84) at Concannon Blvd	C	22.6	0.563	C	22.0	0.583
12	East Vallecitos Rd (SR-84) at Isabel Ave	C	29.2	0.911	C	34.5	0.949
13	Murrieta Blvd at East Jack London Blvd-Pine St	***E***	***71.5***	***1.001***	***E***	***74.5***	***1.037***
14	Murrieta Blvd at East Stanley Blvd	C	34.6	0.809	D	35.8	0.830
15	Isabel Ave-Campus Dr at Portola Ave	*Future Intersection*					
16	Isabel Ave (SR-84) at I-580 westbound ramps	*Future Intersection*					
17	Isabel Ave (SR-84) at I-580 eastbound ramps	*Future Intersection*					
18	El Charro Rd at West Jack London Blvd	*Future Intersection*			C	21.8	0.608
19	Isabel Ave (SR-84) at Airway Blvd	*Future Intersection*					
20	Airway Blvd at Airway Extension	*Future Project Intersection*			C	22.5	0.477
Dublin							
21	Hacienda Dr at Dublin Blvd	D	37.8	0.898	D	35.3	0.832
22	Hacienda Dr at I-580 westbound ramps	B	18.6	0.557	B	18.8	0.553
23	Tassajara Rd at Central Pkwy	C	20.5	0.690	B	18.3	0.655
24	Tassajara Rd at Dublin Blvd	C	25.4	0.467	C	27.8	0.531
25	Tassajara Rd at I-580 westbound ramps	B	15.7	0.679	B	15.4	0.656
26	Fallon Rd at Central Pkwy	B	18.9	0.429	C	21.7	0.483
27	Fallon Rd at Dublin Blvd	C	23.3	0.561	C	30.2	0.820
28	El Charro Rd-Fallon Rd at I-580 westbound ramps	B	14.0	0.588	B	15.4	0.670
Pleasanton							
29	Hacienda Dr at I-580 eastbound ramps	B	19.9	0.644	B	19.7	0.625
30	Hacienda Dr at Owens Dr	B	19.3	0.428	B	19.4	0.433
31	West Las Positas Blvd at Stoneridge Dr	C	25.4	0.337	C	25.4	0.342
32	Santa Rita Rd at Pimlico Dr-I-580 eastbound ramps	D	53.1	0.803	D	45.0	0.848
33	Santa Rita Rd at West Las Positas Blvd	C	24.8	0.568	C	24.8	0.585
34	Santa Rita Rd at Stoneridge Dr	C	29.6	0.837	C	29.7	0.847
35	Santa Rita Rd at Valley Ave	D	40.6	0.860	D	41.2	0.861
36	Rheem Dr-Milani Ave at Stoneridge Dr	B	13.2	0.167	B	13.2	0.167
37	Kamp Dr-Garden Cir at Stoneridge Dr	B	13.7	0.165	B	13.7	0.165
38	Busch Rd at Valley Ave	D	44.8	0.998	D	45.3	1.000
39	Valley Ave-Bernal Rd at Stanley Blvd	C	30.1	0.821	C	30.0	0.821
40	El Charro Rd at Busch Rd	*Future Intersection*					
41	El Charro Rd at Stanley Blvd	*Future Intersection*					
	Unsignalized Intersection	**LOS**	**Worst Delay**	**Average Delay**	**LOS**	**Worst Delay**	**Average Delay**
2	El Charro Rd at Freisman Rd	A	9.0	0.3	*Eliminated Intersection*		

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Table E-19. P.M. Peak-Hour Intersection LOS and V/C Analysis for Baseline (2008) with and without Full Project Buildout—Jack London Boulevard Extension

Signalized Intersections	No Project			Full Project		
	LOS	Average Delay	V/C	LOS	Average Delay	V/C
Livermore						
1 El Charro Rd at I-580 eastbound ramps	A	9.7	0.243	***F***	***106.9***	***1.240***
3 Airway Blvd at North Canyons Pkwy	B	17.2	0.538	B	17.0	0.557
4 Airway Blvd (SR-84) at I-580 westbound ramps	B	19.9	0.506	B	19.9	0.528
5 Airway Blvd (SR-84) at I-580 eastbound ramps	C	30.5	0.543	C	30.8	0.569
6 Isabel Ave-Kitty Hawk Rd (SR-84) at Airway Blvd	C	28.0	0.788	C	27.9	0.793
7 Collier Canyon Rd at North Canyons Pkwy	B	11.0	0.460	B	11.1	0.466
8 Isabel Ave (SR-84) at Jack London Blvd	C	22.2	0.884	C	25.6	0.934
9 Isabel Ave (SR-84) at East Stanley Blvd off-ramp (north)	C	22.3	0.907	C	23.2	0.918
10 Isabel Ave (SR-84) at Stanley Blvd on-ramp (south)	C	26.4	0.590	C	26.7	0.598
11 Isabel Ave (SR-84) at Concannon Blvd	C	26.6	0.800	C	30.7	0.864
12 East Vallecitos Rd (SR-84) at Isabel Ave	B	16.0	0.800	B	16.6	0.790
13 Murrieta Blvd at East Jack London Blvd-Pine St	***D***	***48.4***	***0.873***	***F***	***115.5***	***1.165***
14 Murrieta Blvd at East Stanley Blvd	C	32.8	0.750	C	34.1	0.774
15 Isabel Ave-Campus Dr at Portola Ave	*Future Intersection*					
16 Isabel Ave (SR-84) at I-580 westbound ramps	*Future Intersection*					
17 Isabel Ave (SR-84) at I-580 eastbound ramps	*Future Intersection*					
18 El Charro Rd at West Jack London Blvd	*Future Intersection*			C	26.7	0.882
19 Isabel Ave (SR-84) at Airway Blvd	*Future Intersection*					
20 Airway Blvd at Airway Extension	*Future Project Intersection*					
Dublin						
21 Hacienda Dr at Dublin Blvd	C	32.1	0.718	C	32.9	0.773
22 Hacienda Dr at I-580 westbound ramps	B	16.9	0.751	B	18.2	0.762
23 Tassajara Rd at Central Pkwy	B	15.3	0.768	B	12.7	0.730
24 Tassajara Rd at Dublin Blvd	C	26.8	0.835	D	36.7	0.869
25 Tassajara Rd at I-580 westbound ramps	C	21.1	0.944	B	20.0	0.931
26 Fallon Rd at Central Pkwy	B	19.0	0.337	C	21.5	0.457
27 Fallon Rd at Dublin Blvd	B	19.6	0.391	***E***	***69.3***	***1.079***
28 El Charro Rd-Fallon Rd at I-580 westbound ramps	B	12.9	0.452	B	12.4	0.763
Pleasanton						
29 Hacienda Dr at I-580 eastbound ramps	B	18.4	0.588	B	18.6	0.593
30 Hacienda Dr at Owens Dr	C	32.4	0.650	C	32.5	0.663
31 West Las Positas Blvd at Stoneridge Dr	C	29.0	0.498	C	28.9	0.496
32 Santa Rita Rd at Pimlico Dr-I-580 eastbound ramps	D	36.2	0.898	D	43.2	0.974
33 Santa Rita Rd at West Las Positas Blvd	C	33.4	0.779	D	35.3	0.847
34 Santa Rita Rd at Stoneridge Dr	C	33.3	0.833	C	34.3	0.870
35 Santa Rita Rd at Valley Ave	D	44.6	0.918	D	44.8	0.920
36 Rheem Dr-Milani Ave at Stoneridge Dr	B	12.0	0.204	B	12.1	0.205
37 Kamp Dr-Garden Cir at Stoneridge Dr	A	3.8	0.083	A	3.9	0.083
38 Busch Rd at Valley Ave	C	23.9	0.752	C	24.0	0.758
39 Valley Ave-Bernal Rd at Stanley Blvd	D	37.1	0.916	D	36.0	0.900
40 El Charro Rd at Busch Rd	*Future Intersection*					
41 El Charro Rd at Stanley Blvd	*Future Intersection*					
Unsignalized Intersection	**LOS**	**Worst Delay**	**Average Delay**	**LOS**	**Worst Delay**	**Average Delay**
2 El Charro Rd at Freisman Rd	A	8.8	3.5	*Eliminated Intersection*		

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Table E-20. P.M. Peak-Hour Intersection LOS and V/C Analysis for Baseline (2008) with and without Full Project Buildout—Airway Boulevard Extension Option

	Signalized Intersections	No Project			Full Project		
		LOS	Average Delay	V/C	LOS	Average Delay	V/C
Livermore							
1	El Charro Rd at I-580 eastbound ramps	A	9.7	0.243	***F***	***102.6***	***1.225***
3	Airway Blvd at North Canyons Pkwy	B	17.2	0.538	B	16.9	0.553
4	Airway Blvd (SR-84) at I-580 westbound ramps	B	19.9	0.506	C	20.2	0.527
5	Airway Blvd (SR-84) at I-580 eastbound ramps	C	30.5	0.543	D	37.9	0.763
6	Isabel Ave-Kitty Hawk Rd (SR-84) at Airway Blvd	C	28.0	0.788	C	32.6	0.832
7	Collier Canyon Rd at North Canyons Pkwy	B	11.0	0.460	B	11.1	0.467
8	Isabel Ave (SR-84) at Jack London Blvd	C	22.2	0.884	C	27.5	0.767
9	Isabel Ave (SR-84) at East Stanley Blvd off-ramp (north)	C	22.3	0.907	C	23.2	0.929
10	Isabel Ave (SR-84) at Stanley Blvd on-ramp (south)	C	26.4	0.590	C	26.0	0.594
11	Isabel Ave (SR-84) at Concannon Blvd	C	26.6	0.800	C	25.7	0.757
12	East Vallecitos Rd (SR-84) at Isabel Ave	B	16.0	0.800	B	16.5	0.824
13	Murrieta Blvd at East Jack London Blvd-Pine St	***D***	***48.4***	***0.873***	***F***	***80.7***	***1.053***
14	Murrieta Blvd at East Stanley Blvd	C	32.8	0.750	C	33.8	0.770
15	Isabel Ave-Campus Dr at Portola Ave	*Future Intersection*					
16	Isabel Ave (SR-84) at I-580 westbound ramps	*Future Intersection*					
17	Isabel Ave (SR-84) at I-580 eastbound ramps	*Future Intersection*					
18	El Charro Rd at West Jack London Blvd	*Future Intersection*			C	28.9	0.903
19	Isabel Ave (SR-84) at Airway Blvd	*Future Intersection*					
20	Airway Blvd at Airway Extension	*Future Project Intersection*			C	23.7	0.616
Dublin							
21	Hacienda Dr at Dublin Blvd	C	32.1	0.718	C	32.9	0.742
22	Hacienda Dr at I-580 westbound ramps	B	16.9	0.751	B	17.7	0.743
23	Tassajara Rd at Central Pkwy	B	15.3	0.768	B	12.5	0.723
24	Tassajara Rd at Dublin Blvd	C	26.8	0.835	D	36.2	0.859
25	Tassajara Rd at I-580 westbound ramps	C	21.1	0.944	C	22.7	0.962
26	Fallon Rd at Central Pkwy	B	19.0	0.337	C	21.3	0.468
27	Fallon Rd at Dublin Blvd	B	19.6	0.391	***E***	***66.7***	***1.070***
28	El Charro Rd-Fallon Rd at I-580 westbound ramps	B	12.9	0.452	B	12.0	0.761
Pleasanton							
29	Hacienda Dr at I-580 eastbound ramps	B	18.4	0.588	B	18.5	0.589
30	Hacienda Dr at Owens Dr	C	32.4	0.650	C	32.3	0.647
31	West Las Positas Blvd at Stoneridge Dr	C	29.0	0.498	C	29.0	0.496
32	Santa Rita Rd at Pimlico Dr-I-580 eastbound ramps	D	36.2	0.898	D	40.6	0.956
33	Santa Rita Rd at West Las Positas Blvd	C	33.4	0.779	D	35.4	0.848
34	Santa Rita Rd at Stoneridge Dr	C	33.3	0.833	D	35.5	0.897
35	Santa Rita Rd at Valley Ave	D	44.6	0.918	D	47.4	0.933
36	Rheem Dr-Milani Ave at Stoneridge Dr	B	12.0	0.204	B	11.9	0.207
37	Kamp Dr-Garden Cir at Stoneridge Dr	A	3.8	0.083	A	3.9	0.083
38	Busch Rd at Valley Ave	C	23.9	0.752	C	24.1	0.767
39	Valley Ave-Bernal Rd at Stanley Blvd	D	37.1	0.916	D	36.8	0.920
40	El Charro Rd at Busch Rd	*Future Intersection*					
41	El Charro Rd at Stanley Blvd	*Future Intersection*					
	Unsignalized Intersection	**LOS**	**Worst Delay**	**Average Delay**	**LOS**	**Worst Delay**	**Average Delay**
2	El Charro Rd at Freisman Rd	A	8.8	3.5	*Eliminated Intersection*		

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Table E-21. El Charro Specific Plan Traffic Impact Segment Operations Analysis for Metropolitan Transportation System Segments, 2010, A.M. Peak

	Northbound/Eastbound							
	No Project	Project			No Project	Project		
Link Location	2010 A.M. Vol	2010 A.M. Vol	% Vol Diff	Contribution	2010 A.M. LOS	2010 A.M. LOS	Decline to F or Worsen F?	Change in V/C > 3%
Freeways								
I-680—north of SR 84	1,352	1,371	1.4%	19	A	A	no	n/a
I-680—north of Bernal Ave	2,892	2,866	-0.9%	-26	B	B	no	n/a
I-580—west of El Charro Rd	4,417	4,719	6.8%	302	B	B	no	n/a
I-580—east of El Charro Rd	4,544	4,608	1.4%	64	B	B	no	n/a
I-580—west of Livermore Ave	4,717	4,773	1.2%	56	C	C	no	n/a
Arterials								
SR 84—east of I-680	695	688	-1.0%	-7	C	C	no	n/a
SR 84—north of Stanley Blvd	2,002	**2,261**	**12.9%**	**259**	**F**	**F**	**yes**	**yes**
SR 84—south of Airway Blvd	2,602	2,174	-16.4%	-428	F	F	no	n/a
Stanley Blvd—west of SR 84	879	883	0.5%	4	B	B	no	n/a
Stanley Blvd—west of Murrieta Blvd	748	756	1.1%	8	B	B	no	n/a
Santa Rita Rd—north of Valley Ave	3,444	3,332	-3.3%	-112	F	F	no	n/a
Holmes St—south of Murrieta Blvd	647	658	1.7%	11	D	D	no	n/a
South Livermore Ave—north of East Ave	460	454	-1.3%	-6	D	D	no	n/a
North Livermore Ave—south of Las Positas Rd	851	800	-6.0%	-51	D	D	no	n/a
First St—south of Portola Ave	1,311	1,298	-1.0%	-13	D	D	no	n/a
First St—south of I-580	1,142	1,138	-0.4%	-4	D	D	no	n/a

	Southbound/Westbound							
	No Project	Project			No Project	Project		
Link Location	2010 A.M. Vol	2010 A.M. Vol	% Vol Diff	Vol Diff	2010 A.M. LOS	2010 A.M. LOS	Decline to F or Worsen F?	Change in V/C > 3%
Freeways								
I-680—north of SR 84	6,564	6,514	-0.8%	-50	F	F	no	n/a
I-680—north of Bernal Ave	5,394	5,393	0.0%	-1	D	D	no	n/a
I-580—west of El Charro Rd	8,930	**9,120**	**2.1%**	**190**	**E**	**F**	**yes**	no
I-580—east of El Charro Rd	9,557	9,102	-4.8%	-455	F	F	no	n/a
I-580—west of Livermore Ave	8,638	8,630	-0.1%	-8	F	F	no	n/a
Arterials								
SR 84—east of I-680	1,687	1,695	0.5%	8	F	F	yes	no
SR 84—north of Stanley Blvd	2,599	2,567	-1.2%	-32	F	F	no	n/a
SR 84—south of Airway Blvd	2,358	2,341	-0.7%	-17	F	F	no	n/a
Stanley Blvd—west of SR 84	3,108	2,962	-4.7%	-146	F	F	no	n/a
Stanley Blvd—west of Murrieta Blvd	1,615	1,620	0.3%	5	B	B	no	n/a
Santa Rita Rd—north of Valley Ave	1,527	1,510	-1.1%	-17	C	C	no	n/a
Holmes St—south of Murrieta Blvd	565	569	0.7%	4	D	D	no	n/a
South Livermore Ave—north of East Ave	175	174	-0.6%	-1	D	D	no	n/a
North Livermore Ave—south of Las Positas Rd	1,052	1,049	-0.3%	-3	D	D	no	n/a
First St—south of Portola Ave	1,666	1,706	2.4%	40	E	E	no	n/a
First St—south of I-580	1,988	2,044	2.8%	56	D	D	no	n/a

Note:

Significance Criteria = Worsen to F or if F already, cumulative increase in velocity-to-capacity (v/c) ratio by > 3% and project makes positive contribution; considerable contributions in **bold**; if no or negative contribution, not considerable.

Source: Dowling Associates, Inc., 2006.

Table E-22. El Charro Specific Plan Traffic Impact Segment Operations Analysis for Metropolitan Transportation System Segments, 2010, P.M. Peak

	Northbound/Eastbound							
	No Project	Project			No Project	Project		
Link Location	2010 P.M. Vol	2010 P.M. Vol	% Vol Diff	Contribution	2010 P.M. LOS	2010 P.M. LOS	Decline to F or Worsen F?	Change in V/C > 3%
Freeways								
I-680—north of SR 84	6,027	6,062	0.6%	35	F	F	yes	no
I-680—north of Bernal Ave	4,658	4,632	-0.6%	-26	D	D	no	NA
I-580—west of El Charro Rd	9,045	9,297	2.8%	252	F	F	yes	no
I-580—east of El Charro Rd	9,497	9,019	-5.0%	-478	F	F	no	NA
I-580—west of Livermore Ave	8,735	8,756	0.2%	21	F	F	yes	no
Arterials								
SR 84—east of I-680	1,684	1,664	-1.2%	-20	F	F	no	NA
SR 84—north of Stanley Blvd	2,793	2,794	0.0%	1	F	F	yes	no
SR 84—south of Airway Blvd	2,631	2,587	-1.7%	-44	F	F	no	NA
Stanley Blvd—west of SR 84	2,957	2,836	-4.1%	-121	F	F	no	NA
Stanley Blvd—west of Murrieta Blvd	1,487	1,497	0.7%	10	B	B	no	NA
Santa Rita Rd—north of Valley Ave	1,639	1,601	-2.3%	-38	D	D	no	NA
Holmes St—south of Murrieta Blvd	535	539	0.7%	4	D	D	no	NA
South Livermore Ave—north of East Ave	261	260	-0.4%	-1	D	D	no	NA
North Livermore Ave—south of Las Positas Rd	1,148	1,167	1.7%	19	D	D	no	NA
First St—south of Portola Ave	1,535	1,608	4.8%	73	D	D	no	NA
First St—south of I-580	1,458	1,545	6.0%	87	D	D	no	NA

	Southbound/Westbound							
	No Project	Project			No Project	Project		
Link Location	2010 P.M. Vol	2010 P.M. Vol	% Vol Diff	Contribution	2010 P.M. LOS	2010 P.M. LOS	Decline to F or Worsen F?	Change in V/C > 3%
Freeways								
I-680—north of SR 84	5,503	5,529	0.5%	26	E	E	no	n/a
I-680—north of Bernal Ave	5,540	5,540	0.0%	0	E	E	no	n/a
I-580—west of El Charro Rd	5,186	5,513	6.3%	327	C	C	no	n/a
I-580—east of El Charro Rd	5,263	5,331	1.3%	68	C	C	no	n/a
I-580—west of Livermore Ave	5,253	5,331	1.5%	78	C	C	no	n/a
Arterials								
SR 84—east of I-680	1,317	1,313	-0.3%	-4	F	F	no	n/a
SR 84—north of Stanley Blvd	2,302	**2,517**	**9.3%**	**215**	**F**	**F**	**yes**	**yes**
SR 84—south of Airway Blvd	2,965	2,594	-12.5%	-371	F	F	no	n/a
Stanley Blvd—west of SR 84	1,324	1,302	-1.7%	-22	B	B	no	n/a
Stanley Blvd—west of Murrieta Blvd	1,133	1,126	-0.6%	-7	B	B	no	n/a
Santa Rita Rd—north of Valley Ave	3,644	3,511	-3.6%	-133	F	F	no	n/a
Holmes St—south of Murrieta Blvd	667	670	0.4%	3	D	D	no	n/a
South Livermore Ave—north of East Ave	484	472	-2.5%	-12	D	D	no	n/a
North Livermore Ave—south of Las Positas Rd	746	664	-11.0%	-82	D	D	no	n/a
First St—south of Portola Ave	1,618	1,615	-0.2%	-3	D	D	no	n/a
First St—south of I-580	1,159	1,155	-0.3%	-4	D	D	no	n/a

Note:

Significance Criteria = Worsen to F or if F already, cumulative increase in velocity-to-capacity (v/c) ratio by > 3%, and project makes positive contribution; considerable contributions in **bold**; if no or negative contribution, not considerable.

Source: Dowling Associates, Inc., 2006.

Table E-23. El Charro Specific Plan Traffic Impact Freeway Operations—2030 Full Project (Jack London Boulevard Extension)

Location	Type	Baseline (2008)			2030 No Project			2030 Full Project		
		Volume[1]	Density[2]	LOS[3]	Volume[1]	Density[2]	LOS[3]	Volume[1]	Density[2]	LOS[3]
I-580 Eastbound—A.M. Peak										
Hacienda Dr to Santa Rita Rd	Weave	6,044	21.1	C	9,250	35.5	E	9,325	35.8	E
Santa Rita Rd to El Charro Rd	Mainline	6,476	22.0	C	8,534	29.9	D	8,770	31.1	D
El Charro Rd to Airway Blvd	Mainline	6,880	30.2	D	8,898	31.7	D	9,182	33.3	D
Airway Blvd to Isabel Ave	Mainline	5,573	23.7	C	7,553	25.8	C	7,692	26.3	D
I-580 Westbound—A.M. Peak										
Isabel Ave to Airway Blvd	Mainline	8,258	41.8	E	8,513	29.8	D	8,536	29.9	D
Airway Blvd to El Charro Rd	Mainline	8,651	>45	F	8,790	31.2	D	8,761	31.0	D
El Charro Rd to Santa Rita Rd	Mainline	7,701	36.1	E	8,487	29.7	D	8,478	29.7	D
Santa Rita Rd to Hacienda Dr	Weave	8,276	29.7	D	8,607	32.4	D	8,572	32.2	D
I-580 Eastbound—P.M. Peak										
Hacienda Dr to Santa Rita Rd	Weave	9,088	35.3	E	9,606	37.4	E	9,640	37.4	E
Santa Rita Rd to El Charro Rd	Mainline	8,351	29.1	D	8,876	31.6	D	9,012	32.2	D
El Charro Rd to Airway Blvd	Mainline	9,011	>45	F	9,105	32.9	D	9,334	34.2	D
Airway Blvd to Isabel Ave	Mainline	8,237	41.6	E	8,341	29.0	D	8,450	29.5	D
I-580 Westbound—P.M. Peak										
Isabel Ave to Airway Blvd	Mainline	5,811	24.8	C	8,051	27.8	D	8,258	28.7	D
Airway Blvd to El Charro Rd	Mainline	6,588	28.6	D	8,970	32.1	D	9,448	35.0	D
El Charro Rd to Santa Rita Rd	Mainline	6,248	26.8	D	8,256	28.7	D	8,402	29.3	D
Santa Rita Rd to Hacienda Dr	Weave	6,579	23.2	C	8,627	32.1	D	8,686	32.5	D

Notes:

Significance Criteria = Significant Cumulative Impact = Decline to F; if already F, velocity-to-capacity (v/c) increase > 3 % and > 1% project contribution

Significant impacts in **bold** (none in this table).

[1] Volume = vehicles per hour (vph)

[2] Density = passenger car per mile per lane (pc/m/ln)

[3] LOS = level of service

Source: Dowling Associates, Inc., 2006.

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Table E-24. El Charro Specific Plan Traffic Impact Freeway Operations—2030 Full Project (Airway Boulevard Extension)

Location	Type	Baseline (2008)			2030 No Project			P.M. Peak Hour		
		Volume[1]	Density[2]	LOS[3]	Volume[1]	Density[2]	LOS[3]	Volume[1]	Density[2]	LOS[3]
I-580 Eastbound—A.M. Peak										
Hacienda Dr to Santa Rita Rd	Weave	6,044	21.1	C	9,250	35.5	E	9,272	35.5	E
Santa Rita Rd to El Charro Rd	Mainline	6,476	22.0	C	8,534	29.9	D	8,592	30.2	D
El Charro Rd to Airway Blvd	Mainline	6,880	30.2	D	8,898	31.7	D	9,122	33.0	D
Airway Blvd to Isabel Ave	Mainline	5,573	23.7	C	7,553	25.8	C	7,933	27.3	D
I-580 Westbound—A.M. Peak										
Isabel Ave to Airway Blvd	Mainline	8,258	41.8	E	8,513	29.8	D	8,824	31.4	D
Airway Blvd to El Charro Rd	Mainline	8,651	>45	F	8,790	31.2	D	8,814	31.3	D
El Charro Rd to Santa Rita Rd	Mainline	7,701	36.1	E	8,487	29.7	D	8,448	29.5	D
Santa Rita Rd to Hacienda Dr	Weave	8,276	29.7	D	8,607	32.4	D	8,528	32.2	D
I-580 Eastbound—P.M. Peak										
Hacienda Dr to Santa Rita Rd	Weave	9,088	35.3	E	9,606	37.4	E	9,560	36.8	E
Santa Rita Rd to El Charro Rd	Mainline	8,351	29.1	D	8,876	31.6	D	8,955	32.1	D
El Charro Rd to Airway Blvd	Mainline	9,011	>45	F	9,105	32.9	D	9,365	34.4	D
Airway Blvd to Isabel Ave	Mainline	8,237	41.6	E	8,341	29.0	D	8,477	29.7	D
I-580 Westbound—P.M. Peak										
Isabel Ave to Airway Blvd	Mainline	5,811	24.8	C	8,051	27.8	D	8,332	29.0	D
Airway Blvd to El Charro Rd	Mainline	6,588	28.6	D	8,970	32.1	D	9,452	35.0	D
El Charro Rd to Santa Rita Rd	Mainline	6,248	26.8	D	8,256	28.7	D	8,302	28.9	D
Santa Rita Rd to Hacienda Dr	Weave	6,579	23.2	C	8,627	32.1	D	8,663	32.4	D

Notes:
Significance Criteria = Significant Cumulative Impact = Decline to F; if already F, velocity-to-capacity (v/c) increase > 3 % and > 1% project contribution.
Significant impacts in **bold** (none in this table).
[1] Volume = vehicles per hour (vph).
[2] Density = passenger car per mile per lane (pc/m/ln).
[3] LOS = level of service.
Source: Dowling Associates, Inc. 2006.

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Table E-25. El Charro Specific Plan Traffic Impact Peak Hour Intersection Level of Service, Cumulative 2030 Conditions

	Intersections	LOS Standard	Time Period	2008	LOS from 2030 Scenarios		
				No Project	Cumulative w/o Project	Cumulative with Project—Jack London Boulevard Extension option	Cumulative with Project—Airway Boulevard Extension option
	Livermore						
1	El Charro Rd at I-580 eastbound ramps	Midlevel D	a.m.	B	B	B	B
			p.m.	A	B	B	B
2	El Charro Rd at Freisman Rd	None	a.m.	A	F	N/A	N/A
			p.m.	A	F	N/A	N/A
3	Airway Blvd at North Canyons Pkwy	E	a.m.	C	C	C	C
			p.m.	B	C	C	C
4	Airway Blvd (SR 84) at I-580 westbound ramps	E	a.m.	B	C	C	C
			p.m.	B	C	C	C
5	Airway Blvd (SR 84) at I-580 eastbound ramps	E	a.m.	D	C	C	C
			p.m.	C	C	C	C
6	Isabel Ave–Kitty Hawk Rd (SR 84) at Airway Blvd	E	a.m.	E	N/A	N/A	N/A
			p.m.	C	N/A	N/A	N/A
7	Collier Canyon Rd at North Canyons Pkwy	Midlevel D	a.m.	B	C	C	C
			p.m.	B	B	C	C
8	Isabel Ave (SR 84) at Jack London Blvd	Midlevel D	a.m.	B	E	E	C
			p.m.	C	F	F	D
9	Isabel Ave (SR 84) at East Stanley Blvd offramp (north)	Midlevel D	a.m.	B	C	D	C
			p.m.	C	D	D	D
10	Isabel Ave (SR 84) at Stanley Blvd onramp (south)	Midlevel D	a.m.	C	B	B	B
			p.m.	C	C	C	C
11	Isabel Ave (SR 84) at Concannon Blvd	Midlevel D	a.m.	C	C	D	D
			p.m.	C	B	B	B
12	East Vallecitos Rd (SR 84) at Isabel Ave	Midlevel D	a.m.	C	B	B	B
			p.m.	B	A	A	A
13	Murrieta Blvd at East Jack London Blvd–Pine St	Midlevel D	a.m.	E	F	E	D
			p.m.	D	D	D	D
14	Murrieta Blvd at East Stanley Blvd	Midlevel D	a.m.	C	D	D	E
			p.m.	C	D	D	D
15	Isabel Ave–Campus Dr at Portola Ave	E	a.m.	N/A	C	C	C
			p.m.	N/A	C	C	C
16	Isabel Ave (SR 84) at I-580 westbound ramps	E	a.m.	N/A	D	D	D
			p.m.	N/A	C	C	C
17	Isabel Ave (SR 84) at I-580 eastbound ramps	E	a.m.	N/A	B	C	C
			p.m.	N/A	C	D	C

Intersections	LOS Standard	Time Period	2008 No Project	LOS from 2030 Scenarios Cumulative w/o Project	Cumulative with Project—Jack London Boulevard Extension option	Cumulative with Project—Airway Boulevard Extension option
18 El Charro Rd at West Jack London Blvd	Midlevel D	a.m.	A	C	C	C
		p.m.	B	D	D	D
19 Isabel Ave (SR 84) at Airway Blvd	E	a.m.	N/A	E	D	F
		p.m.	N/A	F	F	F
20 Airway Blvd at Airway Extension	Midlevel D	a.m.	N/A	N/A	N/A	C
		p.m.	N/A	N/A	N/A	D
Dublin						
21 Hacienda Dr at Dublin Blvd	E	a.m.	D	D	D	D
		p.m.	C	D	D	D
22 Hacienda Dr at I-580 westbound ramps	E	a.m.	B	C	C	C
		p.m.	B	C	C	C
23 Tassajara Rd at Central Pkwy	E	a.m.	C	C	C	C
		p.m.	B	D	D	D
24 Tassajara Rd at Dublin Blvd	E	a.m.	C	C	C	C
		p.m.	C	D	D	D
25 Tassajara Rd at I-580 westbound ramps	E	a.m.	B	D	D	D
		p.m.	C	B	B	B
26 Fallon Rd at Central Pkwy	E	a.m.	B	C	C	C
		p.m.	B	D	D	D
27 Fallon Rd at Dublin Blvd	E	a.m.	C	C	C	C
		p.m.	B	C	C	C
28 El Charro Rd–Fallon Rd at I-580 westbound ramps	E	a.m.	B	B	C	C
		p.m.	B	C	D	D
Pleasanton						
29 Hacienda Dr at I-580 eastbound ramps	E	a.m.	B	C	C	C
		p.m.	B	C	C	C
30 Hacienda Dr at Owens Dr	E	a.m.	B	C	C	C
		p.m.	C	C	C	C
31 West Las Positas Blvd at Stoneridge Dr	E	a.m.	C	C	C	C
		p.m.	C	C	C	C
32 Santa Rita Rd at Pimlico Dr–I-580 eastbound ramps	E	a.m.	D	F	F	E
		p.m.	D	D	E	E
33 Santa Rita Rd at West Las Positas Blvd	E	a.m.	C	C	C	C
		p.m.	C	D	D	D
34 Santa Rita Rd at Stoneridge Dr	E	a.m.	C	E	F	F
		p.m.	C	F	F	F

Table E-25. Continued

	Intersections	LOS Standard	Time Period	2008	LOS from 2030 Scenarios		
				No Project	Cumulative w/o Project	Cumulative with Project—Jack London Boulevard Extension option	Cumulative with Project—Airway Boulevard Extension option
35	Santa Rita Rd at Valley Ave	E	a.m.	D	C	C	C
			p.m.	D	C	C	C
36	Rheem Dr–Milani Ave at Stoneridge Dr	E	a.m.	B	C	C	C
			p.m.	B	E	E	F
37	Kamp Dr–Garden Cir at Stoneridge Dr	E	a.m.	B	A	A	A
			p.m.	A	A	A	A
38	Busch Rd at Valley Ave	E	a.m.	D	D	C	D
			p.m.	C	C	C	C
39	Valley Ave–Bernal Rd at Stanley Blvd	E	a.m.	C	D	D	D
			p.m.	D	E	E	E
40	El Charro Rd at Busch Rd	E	a.m.	N/A	B	B	B
			p.m.	N/A	B	B	B
41	El Charro Rd at Stanley Blvd	E	a.m.	N/A	B	B	D
			p.m.	N/A	B	C	C
42	Road A and BBPL Access 1	Mid-level D	a.m.	N/A	N/A	N/A	N/A
			p.m.	N/A	N/A	D	D
43	Road A and BBPL Access 2	Mid-level D	a.m.	N/A	N/A	N/A	N/A
			p.m.	N/A	N/A	C	C
44	Road A and BBPL Access 3	Mid-level D	a.m.	N/A	N/A	N/A	N/A
			p.m.	N/A	N/A	C	C

Less than significant due to reduction in delay with project compared to w/o project.

Significant impact due to contribution to not meeting level of service (LOS) standard

Significant impact due to > 5 second delay

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Table E-26. AM Peak Hour Intersection Level of Service Using Highway Capacity Manual (HCM) Cumulative (2030) Conditions with and without Full Project—Jack London Boulevard Extension Option

Signalized Intersections	No Project			Full Project			Difference	
	LOS	Average Delay	V/C	LOS	Average Delay	V/C	Average Delay	V/C
Livermore								
1 El Charro Rd at I-580 eastbound ramps	B	18.4	0.741	B	18.6	0.726	0.2	-0.015
3 Airway Blvd at North Canyons Pkwy	C	23.5	0.854	C	30.5	0.940	7.0	0.086
4 Airway Blvd (SR 84) at I-580 westbound ramps	C	20.8	0.683	C	21.4	0.720	0.6	0.037
5 Airway Blvd (SR 84) at I-580 eastbound ramps	C	28.7	0.733	C	29.7	0.770	1.0	0.037
6 Isabel Ave-Kitty Hawk Rd (SR 84) at Airway Blvd	Eliminated Intersection							
7 Collier Canyon Rd at North Canyons Pkwy	C	22.6	0.591	C	22.4	0.602	-0.2	0.011
8 Isabel Ave (SR 84) at Jack London Blvd	E	61.2	1.061	E	74.1	1.127	12.9	0.066
9 Isabel Ave (SR 84) at East Stanley Blvd off-ramp (north)	C	29.3	0.931	D	35.9	0.997	6.6	0.066
10 Isabel Ave (SR 84) at Stanley Blvd on-ramp (south)	B	10.6	0.636	B	10.7	0.627	0.1	-0.009
11 Isabel Ave (SR 84) at Concannon Blvd	C	34.7	0.950	D	35.1	0.952	0.4	0.002
12 East Vallecitos Rd (SR 84) at Isabel Ave	B	13.7	0.750	B	13.1	0.723	-0.6	-0.027
13 Murrieta Blvd at East Jack London Blvd-Pine St	F	82.5	1.067	E	56.8	0.972	-25.7	-0.095
14 Murrieta Blvd at East Stanley Blvd	D	51.5	1.012	D	54.5	1.029	3.0	0.017
15 Isabel Ave-Campus Dr at Portola Ave	C	27.6	0.833	C	28.0	0.849	0.4	0.016
16 Isabel Ave (SR 84) at I-580 westbound ramps	D	36.5	0.964	D	38.5	0.977	2.0	0.013
17 Isabel Ave (SR 84) at I-580 eastbound ramps	B	18.5	0.836	C	24.8	0.942	6.3	0.106
18 El Charro Rd at West Jack London Blvd	C	28.4	0.758	C	29.1	0.760	0.7	0.002
19 Isabel Ave (SR 84) at Airway Blvd	E	66.8	1.059	D	42.3	0.971	-24.5	-0.088
20 Airway Blvd at Airway Extension	Future Project Intersection							
Dublin								
21 Hacienda Dr at Dublin Blvd	D	45.5	0.978	D	44.6	0.973	-0.9	-0.005
22 Hacienda Dr at I-580 westbound ramps	C	24.6	0.898	C	24.3	0.894	-0.3	-0.004
23 Tassajara Rd at Central Pkwy	C	27.5	0.931	C	26.0	0.910	-1.5	-0.021
24 Tassajara Rd at Dublin Blvd	C	34.5	0.874	C	33.4	0.828	-1.1	-0.046

Table E-26. Continued

25 Tassajara Rd at I-580 westbound ramps	D	44.6	1.074	D	36.3	1.040	-8.3	-0.034
26 Fallon Rd at Central Pkwy	C	29.0	0.694	C	26.9	0.714	-2.1	0.020
27 Fallon Rd at Dublin Blvd	C	25.5	0.633	C	26.2	0.610	0.7	-0.023
28 El Charro Rd-Fallon Rd at I-580 westbound ramps	B	15.9	0.710	C	23.1	0.666	7.2	-0.044
Pleasanton								
29 Hacienda Dr at I-580 eastbound ramps	C	22.5	0.789	C	23.6	0.819	1.1	0.030
30 Hacienda Dr at Owens Dr	C	20.6	0.639	C	21.6	0.652	1.0	0.013
31 West Las Positas Blvd at Stoneridge Dr	C	25.8	0.338	C	25.7	0.357	-0.1	0.019
32 Santa Rita Rd at Pimlico Dr–I-580 eastbound ramps	F	81.9	1.151	F	81.6	1.157	-0.3	0.006
33 Santa Rita Rd at West Las Positas Blvd	C	24.6	0.701	C	26.2	0.749	1.6	0.048
34 Santa Rita Rd at Stoneridge Dr	E	78.9	1.080	F	102.8	1.166	23.9	0.086
35 Santa Rita Rd at Valley Ave	C	33.9	0.752	C	33.9	0.752	0.0	0.000
36 Rheem Dr–Milani Ave at Stoneridge Dr	C	21.8	0.795	C	22.0	0.834	0.2	0.039
37 Kamp Dr-Garden Cir at Stoneridge Dr	A	6.9	0.399	A	6.8	0.420	-0.1	0.021
38 Busch Rd at Valley Ave	D	37.5	0.952	C	34.3	0.935	-3.2	-0.017
39 Valley Ave–Bernal Rd at Stanley Blvd	D	37.0	0.847	D	37.0	0.857	0.0	0.010
40 El Charro Rd at Busch Rd	B	14.6	0.461	B	13.1	0.436	-1.5	-0.025
41 El Charro Rd at Stanley Blvd	B	15.5	0.829	B	15.9	0.843	0.4	0.014
Unsignalized Intersection	**LOS**	**Worst Delay**	**Average Delay**	**LOS**	**Worst Delay**	**Average Delay**	**Worst Delay**	**Average Delay**
2 El Charro Rd at Freisman Rd	F	9859.8	16.8	Eliminated Intersection				

Table E-27. P.M. Peak Hour Intersection Level of Service Using Highway Capacity Manual (HCM) Cumulative (2030) Conditions with and without Full Project—Jack London Boulevard Extension Option

Signalized Intersections	No Project			Full Project			Difference	
	LOS	Average Delay	V/C	LOS	Average Delay	V/C	Average Delay	V/C
Livermore								
1 El Charro Rd at I-580 eastbound ramps	B	18.2	0.727	B	16.7	0.708	-1.5	-0.019
3 Airway Blvd at North Canyons Pkwy	C	25.1	0.866	C	24.9	0.881	-0.2	0.015
4 Airway Blvd (SR-84) at I-580 westbound ramps	C	20.3	0.461	C	20.3	0.466	0.0	0.005
5 Airway Blvd (SR-84) at I-580 eastbound ramps	C	29.1	0.662	C	28.3	0.654	-0.8	-0.008
6 Isabel Ave-Kitty Hawk Rd (SR-84) at Airway Blvd	Eliminated Intersection							
7 Collier Canyon Rd at North Canyons Pkwy	B	18.2	0.622	C	22.2	0.691	4.0	0.069
8 Isabel Ave (SR-84) at Jack London Blvd	F	116.2	1.308	F	88.1	1.174	-28.1	-0.134
9 Isabel Ave (SR-84) at East Stanley Blvd off-ramp (north)	D	39.5	1.001	D	39.0	1.005	-0.5	0.004
10 Isabel Ave (SR-84) at Stanley Blvd on-ramp (south)	C	27.9	0.997	C	28.3	0.999	0.4	0.002
11 Isabel Ave (SR-84) at Concannon Blvd	B	17.4	0.804	B	17.1	0.800	-0.3	-0.004
12 East Vallecitos Rd (SR-84) at Isabel Ave	A	9.4	0.772	A	9.7	0.756	0.3	-0.016
13 Murrieta Blvd at East Jack London Blvd-Pine St	D	51.7	0.947	D	42.4	0.867	-9.3	-0.080
14 Murrieta Blvd at East Stanley Blvd	D	37.9	0.909	D	37.9	0.923	0.0	0.014
15 Isabel Ave-Campus Dr at Portola Ave	C	29.0	0.912	C	32.5	0.953	3.5	0.041
16 Isabel Ave (SR-84) at I-580 westbound ramps	C	23.2	0.790	C	23.0	0.801	-0.2	0.011
17 Isabel Ave (SR-84) at I-580 eastbound ramps	C	26.4	0.953	D	38.0	1.024	11.6	0.071
18 El Charro Rd at West Jack London Blvd	C	34.1	0.895	D	39.8	0.924	5.7	0.029
19 Isabel Ave (SR-84) at Airway Blvd	F	85.8	1.188	F	81.2	1.144	-4.6	-0.044
20 Airway Blvd at Airway Extension	Future Project Intersection							
Dublin								
21 Hacienda Dr at Dublin Blvd	D	49.8	1.023	D	49.5	1.044	-0.3	0.021
22 Hacienda Dr at I-580 westbound ramps	C	27.8	0.919	C	29.4	0.943	1.6	0.024
23 Tassajara Rd at Central Pkwy	D	47.6	1.053	D	48.6	1.056	1.0	0.003

Table E-27. Continued

24 Tassajara Rd at Dublin Blvd	D	45.6	0.994	D	46.4	0.996	0.8	0.002
25 Tassajara Rd at I-580 westbound ramps	B	18.2	0.926	B	17.9	0.922	-0.3	-0.004
26 Fallon Rd at Central Pkwy	D	36.1	0.807	D	41.4	0.895	5.3	0.088
27 Fallon Rd at Dublin Blvd	C	26.6	0.784	C	27.4	0.827	0.8	0.043
28 El Charro Rd-Fallon Rd at I-580 westbound ramps	C	27.2	0.933	D	50.4	1.012	23.2	0.079
Pleasanton								
29 Hacienda Dr at I-580 eastbound ramps	C	24.3	0.847	C	20.8	0.803	-3.5	-0.044
30 Hacienda Dr at Owens Dr	C	32.7	0.712	C	33.3	0.745	0.6	0.033
31 West Las Positas Blvd at Stoneridge Dr	C	30.7	0.589	C	32.1	0.681	1.4	0.092
32 Santa Rita Rd at Pimlico Dr-I-580 eastbound ramps	D	43.5	0.963	E	71.1	1.124	27.6	0.161
33 Santa Rita Rd at West Las Positas Blvd	D	37.0	0.878	D	48.4	0.992	11.4	0.114
34 Santa Rita Rd at Stoneridge Dr	F	231.0	2.018	F	225.9	1.848	-5.1	-0.170
35 Santa Rita Rd at Valley Ave	C	31.4	0.581	C	31.4	0.582	0.0	0.001
36 Rheem Dr-Milani Ave at Stoneridge Dr	E	58.8	1.253	E	78.5	1.551	19.7	0.298
37 Kamp Dr-Garden Cir at Stoneridge Dr	A	2.2	0.401	A	2.2	0.489	0.0	0.088
38 Busch Rd at Valley Ave	C	24.4	0.716	C	29.4	0.809	5.0	0.093
39 Valley Ave-Bernal Rd at Stanley Blvd	E	77.8	1.119	E	73.0	1.103	-4.8	-0.016
40 El Charro Rd at Busch Rd	B	16.1	0.490	B	16.1	0.546	0.0	0.056
41 El Charro Rd at Stanley Blvd	B	17.5	0.812	C	26.8	0.959	9.3	0.147
Unsignalized Intersection	**LOS**	**Worst Delay**	**Average Delay**	**LOS**	**Worst Delay**	**Average Delay**	**Worst Delay**	**Average Delay**
2 El Charro Rd at Freisman Rd	F	16402.7	32.1	Eliminated Intersection				

Table E-28. A.M. Peak Hour Intersection Level of Service Using Highway Capacity Manual (HCM) Cumulative (2030) Conditions with and without Full Project—Airway Boulevard Extension Option

Signalized Intersections	No Project			Full Project			Difference	
	LOS	Average Delay	V/C	LOS	Average Delay	V/C	Average Delay	V/C
Livermore								
1 El Charro Rd at I-580 eastbound ramps	B	18.4	0.741	B	15.1	0.707	-3.3	-0.034
3 Airway Blvd at North Canyons Pkwy	C	23.5	0.854	C	28.2	0.909	4.7	0.055
4 Airway Blvd (SR-84) at I-580 westbound ramps	C	20.8	0.683	C	21.6	0.699	0.8	0.016
5 Airway Blvd (SR-84) at I-580 eastbound ramps	C	28.7	0.733	C	29.4	0.728	0.7	-0.005
6 Isabel Ave-Kitty Hawk Rd (SR-84) at Airway Blvd	Eliminated Intersection							
7 Collier Canyon Rd at North Canyons Pkwy	C	22.6	0.591	C	22.4	0.622	-0.2	0.031
8 Isabel Ave (SR-84) at Jack London Blvd	E	61.2	1.061	C	27.6	0.948	-33.6	-0.113
9 Isabel Ave (SR-84) at East Stanley Blvd off-ramp (north)	C	29.3	0.931	C	25.1	0.843	-4.2	-0.088
10 Isabel Ave (SR-84) at Stanley Blvd on-ramp (south)	B	10.6	0.636	B	11.5	0.647	0.9	0.011
11 Isabel Ave (SR-84) at Concannon Blvd	C	34.7	0.950	D	37.2	0.971	2.5	0.021
12 East Vallecitos Rd (SR-84) at Isabel Ave	B	13.7	0.750	B	14.0	0.769	0.3	0.019
13 Murrieta Blvd at East Jack London Blvd-Pine St	F	82.5	1.067	D	42.7	0.899	-39.8	-0.168
14 Murrieta Blvd at East Stanley Blvd	D	51.5	1.012	E	60.0	1.037	8.5	0.025
15 Isabel Ave-Campus Dr at Portola Ave	C	27.6	0.833	C	27.8	0.876	0.2	0.043
16 Isabel Ave (SR-84) at I-580 westbound ramps	D	36.5	0.964	D	37.9	0.976	1.4	0.012
17 Isabel Ave (SR-84) at I-580 eastbound ramps	B	18.5	0.836	C	25.7	0.953	7.2	0.117
18 El Charro Rd at West Jack London Blvd	C	28.4	0.758	C	34.9	0.874	6.5	0.116
19 Isabel Ave (SR-84) at Airway Blvd	E	66.8	1.059	F	146.2	1.444	79.4	0.385
20 Airway Blvd at Airway Extension	Project Intersection			C	29.8	0.832		
Dublin								
21 Hacienda Dr at Dublin Blvd	D	45.5	0.978	D	43.6	0.961	-1.9	-0.017
22 Hacienda Dr at I-580 westbound ramps	C	24.6	0.898	C	25.1	0.905	0.5	0.007
23 Tassajara Rd at Central Pkwy	C	27.5	0.931	C	26.3	0.914	-1.2	-0.017
24 Tassajara Rd at Dublin Blvd	C	34.5	0.874	C	33.4	0.827	-1.1	-0.047

Table E-28. Continued

25 Tassajara Rd at I-580 westbound ramps	D	44.6	1.074	D	36.0	1.037	-8.6	-0.037
26 Fallon Rd at Central Pkwy	C	29.0	0.694	C	26.2	0.662	-2.8	-0.032
27 Fallon Rd at Dublin Blvd	C	25.5	0.633	C	26.5	0.677	1.0	0.044
28 El Charro Rd-Fallon Rd at I-580 westbound ramps	B	15.9	0.710	C	22.8	0.701	6.9	-0.009
Pleasanton								
29 Hacienda Dr at I-580 eastbound ramps	C	22.5	0.789	C	23.4	0.818	0.9	0.029
30 Hacienda Dr at Owens Dr	C	20.6	0.639	C	21.3	0.656	0.7	0.017
31 West Las Positas Blvd at Stoneridge Dr	C	25.8	0.338	C	25.8	0.343	0.0	0.005
32 Santa Rita Rd at Pimlico Dr-I-580 eastbound ramps	F	81.9	1.151	E	77.5	1.140	-4.4	-0.011
33 Santa Rita Rd at West Las Positas Blvd	C	24.6	0.701	C	25.3	0.709	0.7	0.008
34 Santa Rita Rd at Stoneridge Dr	E	78.9	1.080	F	95.0	1.152	16.1	0.072
35 Santa Rita Rd at Valley Ave	C	33.9	0.752	C	33.9	0.752	0.0	0.000
36 Rheem Dr-Milani Ave at Stoneridge Dr	C	21.8	0.795	C	20.1	0.813	-1.7	0.018
37 Kamp Dr-Garden Cir at Stoneridge Dr	A	6.9	0.399	A	6.4	0.449	-0.5	0.050
38 Busch Rd at Valley Ave	D	37.5	0.952	D	35.4	0.942	-2.1	-0.010
39 Valley Ave-Bernal Rd at Stanley Blvd	D	37.0	0.847	D	53.5	1.070	16.5	0.223
40 El Charro Rd at Busch Rd	B	14.6	0.461	B	10.4	0.424	-4.2	-0.037
41 El Charro Rd at Stanley Blvd	B	15.5	0.829	D	38.3	1.042	22.8	0.213
Unsignalized Intersection	**LOS**	**Worst Delay**	**Average Delay**	**LOS**	**Worst Delay**	**Average Delay**	**Worst Delay**	**Average Delay**
2 El Charro Rd at Freisman Rd	F	9859.8	16.8	Eliminated Intersection				

Table E-29. P.M. Peak Hour Intersection Level of Service Using Highway Capacity Manual (HCM) Cumulative (2030) Conditions with and without Full Project—Airway Boulevard Extension Option

Signalized Intersections	No Project			Full Project			Difference	
	LOS	Average Delay	V/C	LOS	Average Delay	V/C	Average Delay	V/C
Livermore								
1 El Charro Rd at I-580 eastbound ramps	B	18.2	0.727	B	16.8	0.705	-1.4	-0.022
3 Airway Blvd at North Canyons Pkwy	C	25.1	0.866	C	24.4	0.881	-0.7	0.015
4 Airway Blvd (SR-84) at I-580 westbound ramps	C	20.3	0.461	C	20.2	0.473	-0.1	0.012
5 Airway Blvd (SR-84) at I-580 eastbound ramps	C	29.1	0.662	C	30.1	0.691	1.0	0.029
6 Isabel Ave-Kitty Hawk Rd (SR-84) at Airway Blvd	Eliminated Intersection							
7 Collier Canyon Rd at North Canyons Pkwy	B	18.2	0.622	C	20.4	0.680	2.2	0.058
8 Isabel Ave (SR-84) at Jack London Blvd	F	116.2	1.308	D	36.4	1.010	-79.8	-0.298
9 Isabel Ave (SR-84) at East Stanley Blvd off-ramp (north)	D	39.5	1.001	D	44.1	1.034	4.6	0.033
10 Isabel Ave (SR-84) at Stanley Blvd on-ramp (south)	C	27.9	0.997	C	25.8	0.987	-2.1	-0.010
11 Isabel Ave (SR-84) at Concannon Blvd	B	17.4	0.804	B	17.1	0.795	-0.3	-0.009
12 East Vallecitos Rd (SR-84) at Isabel Ave	A	9.4	0.772	A	9.6	0.743	0.2	-0.029
13 Murrieta Blvd at East Jack London Blvd-Pine St	D	51.7	0.947	D	44.7	0.899	-7.0	-0.048
14 Murrieta Blvd at East Stanley Blvd	D	37.9	0.909	D	38.3	0.943	0.4	0.034
15 Isabel Ave-Campus Dr at Portola Ave	C	29.0	0.912	C	34.9	0.972	5.9	0.060
16 Isabel Ave (SR-84) at I-580 westbound ramps	C	23.2	0.790	C	21.8	0.780	-1.4	-0.010
17 Isabel Ave (SR-84) at I-580 eastbound ramps	C	26.4	0.953	C	29.9	0.978	3.5	0.025
18 El Charro Rd at West Jack London Blvd	C	34.1	0.895	D	43.2	0.966	9.1	0.071
19 Isabel Ave (SR-84) at Airway Blvd	F	85.8	1.188	F	168.9	1.541	83.1	0.353
20 Airway Blvd at Airway Extension	Project Intersection			D	44.9	1.045		
Dublin								
21 Hacienda Dr at Dublin Blvd	D	49.8	1.023	D	48.2	1.044	-1.6	0.021
22 Hacienda Dr at I-580 westbound ramps	C	27.8	0.919	C	28.6	0.929	0.8	0.010
23 Tassajara Rd at Central Pkwy	D	47.6	1.053	D	42.5	1.031	-5.1	-0.022
24 Tassajara Rd at Dublin Blvd	D	45.6	0.994	D	48.0	1.009	2.4	0.015

Table E-29. Continued

25 Tassajara Rd at I-580 westbound ramps	B	18.2	0.926	B	18.1	0.924	-0.1	-0.002
26 Fallon Rd at Central Pkwy	D	36.1	0.807	D	41.0	0.867	4.9	0.060
27 Fallon Rd at Dublin Blvd	C	26.6	0.784	C	28.1	0.830	1.5	0.046
28 El Charro Rd-Fallon Rd at I-580 westbound ramps	C	27.2	0.933	D	54.1	1.036	26.9	0.103
Pleasanton								
29 Hacienda Dr at I-580 eastbound ramps	C	24.3	0.847	C	21.7	0.826	-2.6	-0.021
30 Hacienda Dr at Owens Dr	C	32.7	0.712	C	33.1	0.741	0.4	0.029
31 West Las Positas Blvd at Stoneridge Dr	C	30.7	0.589	C	30.8	0.615	0.1	0.026
32 Santa Rita Rd at Pimlico Dr-I-580 eastbound ramps	D	43.5	0.963	E	57.8	1.071	14.3	0.108
33 Santa Rita Rd at West Las Positas Blvd	D	37.0	0.878	D	45.5	0.959	8.5	0.081
34 Santa Rita Rd at Stoneridge Dr	F	231.0	2.018	F	257.7	2.099	26.7	0.081
35 Santa Rita Rd at Valley Ave	C	31.4	0.581	C	31.4	0.582	0.0	0.001
36 Rheem Dr-Milani Ave at Stoneridge Dr	E	58.8	1.253	F	95.7	1.647	36.9	0.394
37 Kamp Dr-Garden Cir at Stoneridge Dr	A	2.2	0.401	A	2.2	0.513	0.0	0.112
38 Busch Rd at Valley Ave	C	24.4	0.716	C	32.1	0.836	7.7	0.120
39 Valley Ave-Bernal Rd at Stanley Blvd	E	77.8	1.119	E	59.5	1.035	-18.3	-0.084
40 El Charro Rd at Busch Rd	B	16.1	0.490	B	17.3	0.691	1.2	0.201
41 El Charro Rd at Stanley Blvd	B	17.5	0.812	C	31.8	0.966	14.3	0.154
Unsignalized Intersection	**LOS**	**Worst Delay**	**Average Delay**	**LOS**	**Worst Delay**	**Average Delay**	**Worst Delay**	**Average Delay**
2 El Charro Rd at Freisman Rd	***F***	***16402.7***	***32.1***	*Eliminated Intersection*				

Table E-30. Staples Ranch Project Trip Generation

				ITE	Daily	Daily	A.M. Peak Hour Traffic					P.M. Peak Hour Traffic				
Phase	Use	Size	Units	Code	Rate	Trips	Rate	% In	% Out	In	Out	Rate	% In	% Out	In	Out
1996 General Plan Stoneridge Drive SP Land Use—Staples Site																
Shopping Center	Retail	457.38	ksf	820	42.92	19,631	1.03	0.61	0.39	287	184	3.74	0.48	0.52	821	890
Industrial Park	Light Indus	1138.2	ksf	110	6.97	7,933	0.92	0.88	0.12	922	125	0.98	0.12	0.88	137	979
Comm Park	Park	20	acres	412.1	2.28	46	2	0.80	0.20	32.00	8.00	4	0.33	0.67	26.7	53.3
Total:						27,610				1,241	317				984	1,922
2006 Proposed Staples SP Amendment Land Use—Staples Site (Office Variant)																
Eldery Housing		800	dwellings	252	3.48	2,784	0.07	0.63	0.37	35	21	0.01	0.59	0.41	47	33
Ice Rink		170	ksf	465	23.6	4,012	1.18	0.45	0.55	90	110	2.36	0.45	0.55	181	221
Community Park		9	acres	412.1	2.28	21	2	0.80	0.20	14	4	4	0.33	0.67	15	21
Auto Dealer		331	ksf	841	33.34	11,036	2.21	0.73	0.27	534	198	2.8	0.40	0.60	371	556
Office		280	ksf	710	11.01	3,083	2.21	0.73	0.27	452	167	2.8	0.40	0.60	314	470
Total:						20,935				1125	500				928	1301
2006 Proposed Staples SP Amendment Land Use—Staples Site (Retail Variant)																
Eldery Housing		800	dwellings	252	3.48	2,784	0.07	0.63	0.37	35	21	0.01	0.59	0.41	47	33
Ice Rink		170	ksf	465	23.6	4,012	1.18	0.45	0.55	90	110	2.36	0.45	0.55	181	221
Community Park		9	acres	412.1	2.28	21	2	0.80	0.20	14	4	4	0.33	0.67	15	21
Auto Dealer		331	ksf	841	33.34	11,036	2.21	0.73	0.27	534	198	2.8	0.40	0.60	371	556
Retail		175	ksf	820	42.92	7,511	1.03	0.61	0.39	110	70	3.74	0.48	0.52	314	340
Total:						25,363				783	403				928	1171

Note:

ksf = Thousand square feet

Source: ITE *Trip Generation, 6th Edition* and City of Livermore Model.

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Table E-31. Level of Service for 2030 with Project with Proposed Staples Specific Plan

	2030 + Project + Jack London Boulevard Extension
Intersection	A.M. Peak
El Charro Rd/Jack London Blvd Ext	C
El Charro Rd/I-580 eastbound ramps	B
El Charro Rd/I-580 westbound ramps	C
Fallon Rd/Dublin Blvd	C

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Table E-32. Freeway Operations—2030 Full Project (Jack London Boulevard Extension) without Stoneridge Drive Extension

Location	Type	Baseline (2008)			2030 No Project			2030 Full Project – Jack London Blvd Extension – No Stoneridge		
		Volume[1]	Density[2]	LOS[3]	Volume[1]	Density[2]	LOS[3]	Volume[1]	Density[2]	LOS[3]
I-580 Eastbound—A.M. Peak										
Hacienda Dr to Santa Rita Rd	Weave	6,044	21.1	C	9,250	35.5	E	9,325	35.8	E
Santa Rita Rd to El Charro Rd	Mainline	6,476	22.0	C	8,534	29.9	D	8,964	32.1	D
El Charro Rd to Airway Blvd	Mainline	6,880	30.2	D	8,898	31.7	D	9,136	33.1	D
Airway Blvd to Isabel Ave	Mainline	5,573	23.7	C	7,553	25.8	C	7,692	26.3	D
I-580 Westbound—A.M. Peak										
Isabel Ave to Airway Blvd	Mainline	8,258	41.8	E	8,513	29.8	D	8,536	29.9	D
Airway Blvd to El Charro Rd	Mainline	8,651	>45	F	8,790	31.2	D	8,709	30.8	D
El Charro Rd to Santa Rita Rd	Mainline	7,701	36.1	E	8,487	29.7	D	8,898	31.7	D
Santa Rita Rd to Hacienda Dr	Weave	8,276	29.7	D	8,607	32.4	D	8,572	32.2	D
I-580 Eastbound—P.M. Peak										
Hacienda Dr to Santa Rita Rd	Weave	9,088	35.3	E	9,606	37.4	E	9,640	37.4	E
Santa Rita Rd to El Charro Rd	Mainline	8,351	29.1	D	8,876	31.6	D	9,226	33.6	D
El Charro Rd to Airway Blvd	Mainline	9,011	>45	F	9,105	32.9	D	9,358	34.4	D
Airway Blvd to Isabel Ave	Mainline	8,237	41.6	E	8,341	29.0	D	8,450	29.5	D
I-580 Westbound—P.M. Peak										
Isabel Ave to Airway Blvd	Mainline	5,811	24.8	C	8,051	27.8	D	8,258	28.7	D
Airway Blvd to El Charro Rd	Mainline	6,588	28.6	D	8,970	32.1	D	9,574	35.8	E
El Charro Rd to Santa Rita Rd	Mainline	6,248	26.8	D	8,256	28.7	D	8,760	31.0	D
Santa Rita Rd to Hacienda Dr	Weave	6,579	23.2	C	8,627	32.1	D	8,686	32.5	D

Notes:

Significance Criteria = Significant Cumulative Impact = Decline to F; if already F, velocity-to-capacity ratio increase > 3 % and > 1% project contribution

Signicant impacts in **bold** (none in this table)

[1] Volume = vehicles per hour (vph)

[2] Density = passenger car per mile per lane (pc/m/ln)

[3] LOS = level of service

Source: Dowling Associates, Inc., 2006.

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Table E-33a. A.M. Peak Hour Intersection Level of Service Cumulative 2030 Conditions without the Stoneridge Drive Extension

Signalized Intersections	No Project			Full Project				
	LOS	Average Delay	V/C	LOS	Average Delay	V/C	Average Delay	V/C
Livermore								
1 El Charro Rd at I-580 eastbound ramps	B	18.4	0.741	C	23.8	0.804	5.4	0.063
3 Airway Blvd at North Canyons Pkwy	C	23.5	0.854	C	28.1	0.925	4.6	0.071
4 Airway Blvd (SR-84) at I-580 westbound ramps	C	20.8	0.683	C	21.4	0.730	0.6	0.047
5 Airway Blvd (SR-84) at I-580 eastbound ramps	C	28.7	0.733	C	29.2	0.770	0.5	0.037
6 Isabel Ave-Kitty Hawk Rd (SR-84) at Airway Blvd	*Eliminated Intersection*							
7 Collier Canyon Rd at North Canyons Pkwy	C	22.6	0.591	C	22.5	0.582	-0.1	-0.009
8 Isabel Ave (SR-84) at Jack London Blvd	E	61.2	1.061	D	48.8	1.032	-12.4	-0.029
9 Isabel Ave (SR-84) at East Stanley Blvd off-ramp (north)	C	29.3	0.931	C-	33.0	0.973	3.7	0.042
10 Isabel Ave (SR-84) at Stanley Blvd on-ramp (south)	B	10.6	0.636	B	11.2	0.780	0.6	0.144
11 Isabel Ave (SR-84) at Concannon Blvd	C	34.7	0.950	F	94.9	1.187	60.2	0.237
12 East Vallecitos Rd (SR-84) at Isabel Ave	B	13.7	0.750	B	14.0	0.769	0.3	0.019
13 Murrieta Blvd at East Jack London Blvd-Pine St	F	82.5	1.067	E	58.2	0.980	-24.3	-0.087
14 Murrieta Blvd at East Stanley Blvd	D	51.5	1.012	E	67.6	1.071	16.1	0.059
15 Isabel Ave-Campus Dr at Portola Ave	C	27.6	0.833	C	30.4	0.815	2.8	-0.018
16 Isabel Ave (SR-84) at I-580 westbound ramps	D	36.5	0.964	C	34.8	0.952	-1.7	-0.012
17 Isabel Ave (SR-84) at I-580 eastbound ramps	B	18.5	0.836	C	22.7	0.933	4.2	0.097
18 El Charro Rd at West Jack London Blvd	C	28.4	0.758	C	29.2	0.874	0.8	0.116
19 Isabel Ave (SR-84) at Airway Blvd	E	66.8	1.059	D	54.2	1.047	-12.6	-0.012
20 Airway Blvd at Airway Extension	*Project Intersection*							
Dublin								
21 Hacienda Dr at Dublin Blvd	D	45.5	0.978	F	96.0	1.224	50.5	0.246
22 Hacienda Dr at I-580 westbound ramps	C	24.6	0.898	C	25.4	0.916	0.8	0.018
23 Tassajara Rd at Central Pkwy	C	27.5	0.931	C	25.5	0.911	-2.0	-0.020
24 Tassajara Rd at Dublin Blvd	C	34.5	0.874	D	46.0	1.008	11.5	0.134
25 Tassajara Rd at I-580 westbound ramps	D	44.6	1.074	F	110.2	1.288	65.6	0.214

26 Fallon Rd at Central Pkwy	C	29.0	0.694	D	42.8	0.970	13.8	0.276
27 Fallon Rd at Dublin Blvd	C	25.5	0.633	C	27.2	0.725	1.7	0.092
28 El Charro Rd-Fallon Rd at I-580 westbound ramps	B	15.9	0.710	B	14.7	0.584	-1.2	-0.126
Pleasanton								
29 Hacienda Dr at I-580 eastbound ramps	C	22.5	0.789	C	24.1	0.840	1.6	0.051
30 Hacienda Dr at Owens Dr	C	20.6	0.639	C	21.1	0.674	0.5	0.035
31 West Las Positas Blvd at Stoneridge Dr	C	25.8	0.338	C	26.4	0.339	0.6	0.001
32 Santa Rita Rd at Pimlico Dr-I-580 eastbound ramps	F	81.9	1.151	F	111.8	1.229	29.9	0.078
33 Santa Rita Rd at West Las Positas Blvd	C	24.6	0.701	C	28.5	0.810	3.9	0.109
34 Santa Rita Rd at Stoneridge Dr	E	78.9	1.080	F	95.9	1.225	17.0	0.145
35 Santa Rita Rd at Valley Ave	C	33.9	0.752	C	33.9	0.752	0.0	0.000
36 Rheem Dr-Milani Ave at Stoneridge Dr	C	21.8	0.795	C	22.2	0.778	0.4	-0.017
37 Kamp Dr-Garden Cir at Stoneridge Dr	A	6.9	0.399	B	13.6	0.161	6.7	-0.238
38 Busch Rd at Valley Ave	D	37.5	0.952	E	74.0	1.116	36.5	0.164
39 Valley Ave-Bernal Rd at Stanley Blvd	D	37.0	0.847	D	37.9	0.858	0.9	0.011
40 El Charro Rd at Busch Rd	B	14.6	0.461	B	19.0	0.572	4.4	0.111
41 El Charro Rd at Stanley Blvd	B	15.5	0.829	C	29.5	0.996	14.0	0.167
Unsignalized Intersection	**LOS**	**Worst Delay**	**Average Delay**	**LOS**	**Worst Delay**	**Average Delay**	**Worst Delay**	**Average Delay**
2 El Charro Rd at Freisman Rd	F	9859.8	16.8	*Eliminated Intersection*				

Table E-33b. P.M. Peak Hour Intersection Level of Service Cumulative 2030 Conditions without the Stoneridge Drive Extension

Signalized Intersections	No Project			Full Project				
	LOS	Average Delay	V/C	LOS	Average Delay	V/C	Average Delay	V/C
Livermore								
1 El Charro Rd at I-580 eastbound ramps	B	18.2	0.727	C	20.3	0.783	2.1	0.056
3 Airway Blvd at North Canyons Pkwy	C	25.1	0.866	C	22.0	0.846	-3.1	-0.020
4 Airway Blvd (SR-84) at I-580 westbound ramps	C	20.3	0.461	C	20.3	0.443	0.0	-0.018
5 Airway Blvd (SR-84) at I-580 eastbound ramps	C	29.1	0.662	C	28.7	0.658	-0.4	-0.004
6 Isabel Ave-Kitty Hawk Rd (SR-84) at Airway Blvd	Eliminated Intersection							
7 Collier Canyon Rd at North Canyons Pkwy	B	18.2	0.622	C	22.6	0.686	4.4	0.064
8 Isabel Ave (SR-84) at Jack London Blvd	F	116.2	1.308	F	80.6	1.120	-35.6	-0.188
9 Isabel Ave (SR-84) at East Stanley Blvd off-ramp (north)	D	39.5	1.001	D	38.9	1.004	-0.6	0.003
10 Isabel Ave (SR-84) at Stanley Blvd on-ramp (south)	C	27.9	0.997	C	28.7	1.002	0.8	0.005
11 Isabel Ave (SR-84) at Concannon Blvd	B	17.4	0.804	B	17.0	0.791	-0.4	-0.013
12 East Vallecitos Rd (SR-84) at Isabel Ave	A	9.4	0.772	A	9.8	0.753	0.4	-0.019
13 Murrieta Blvd at East Jack London Blvd-Pine St	D	51.7	0.947	D	50.5	0.933	-1.2	-0.014
14 Murrieta Blvd at East Stanley Blvd	D	37.9	0.909	D	36.6	0.908	-1.3	-0.001
15 Isabel Ave-Campus Dr at Portola Ave	C	29.0	0.912	D	44.4	1.019	15.4	0.107
16 Isabel Ave (SR-84) at I-580 westbound ramps	C	23.2	0.790	C	22.5	0.794	-0.7	0.004
17 Isabel Ave (SR-84) at I-580 eastbound ramps	C	26.4	0.953	D	35.3	1.010	8.9	0.057
18 El Charro Rd at West Jack London Blvd	C	34.1	0.895	F	89.3	1.239	55.2	0.344
19 Isabel Ave (SR-84) at Airway Blvd	F	85.8	1.188	F	88.2	1.170	2.4	-0.018
20 Airway Blvd at Airway Extension	*Project Intersection*							
Dublin								
21 Hacienda Dr at Dublin Blvd	D	49.8	1.023	F	247.9	1.976	198.1	0.953
22 Hacienda Dr at I-580 westbound ramps	C	27.8	0.919	C	30.3	0.962	2.5	0.043
23 Tassajara Rd at Central Pkwy	D	47.6	1.053	E	57.6	1.093	10.0	0.040
24 Tassajara Rd at Dublin Blvd	D	45.6	0.994	F	94.3	1.274	48.7	0.280
25 Tassajara Rd at I-580 westbound ramps	B	18.2	0.926	C	23.6	0.971	5.4	0.045

26 Fallon Rd at Central Pkwy	D	36.1	0.807	E	61.2	1.040	25.1	0.233
27 Fallon Rd at Dublin Blvd	C	26.6	0.784	C	28.1	0.870	1.5	0.086
28 El Charro Rd-Fallon Rd at I-580 westbound ramps	C	27.2	0.933	E	56.2	1.044	29.0	0.111
Pleasanton								
29 Hacienda Dr at I-580 eastbound ramps	C	24.3	0.847	C	21.4	0.794	-2.9	-0.053
30 Hacienda Dr at Owens Dr	C	32.7	0.712	C	33.7	0.779	1.0	0.067
31 West Las Positas Blvd at Stoneridge Dr	C	30.7	0.589	C	30.8	0.606	0.1	0.017
32 Santa Rita Rd at Pimlico Dr-I-580 eastbound ramps	D	43.5	0.963	F	128.6	1.337	85.1	0.374
33 Santa Rita Rd at West Las Positas Blvd	D	37.0	0.878	E	58.5	1.056	21.5	0.178
34 Santa Rita Rd at Stoneridge Dr	F	231.0	2.018	F	105.7	1.292	-125.3	-0.726
35 Santa Rita Rd at Valley Ave	C	31.4	0.581	C	31.5	0.586	0.1	0.005
36 Rheem Dr-Milani Ave at Stoneridge Dr	E	58.8	1.253	F	90.7	1.195	31.9	-0.058
37 Kamp Dr-Garden Cir at Stoneridge Dr	A	2.2	0.401	A	3.7	0.082	1.5	-0.319
38 Busch Rd at Valley Ave	C	24.4	0.716	F	100.6	1.267	76.2	0.551
39 Valley Ave-Bernal Rd at Stanley Blvd	E	77.8	1.119	E	76.3	1.110	-1.5	-0.009
40 El Charro Rd at Busch Rd	B	16.1	0.490	D	42.9	0.989	26.8	0.499
41 El Charro Rd at Stanley Blvd	B	17.5	0.812	C	34.5	1.013	17.0	0.201
Unsignalized Intersection	**LOS**	**Worst Delay**	**Average Delay**	**LOS**	**Worst Delay**	**Average Delay**	**Worst Delay**	**Average Delay**
2 El Charro Rd at Freisman Rd	F	16402.7	32.1	*Eliminated Intersection*				

Table E-34. El Charro Specific Plan Traffic Impact Segment Operations Analysis for Metropolitan Transportation System Segments, Cumulative 2025, A.M. Peak (Northbound/Eastbound)

Link Location	No Project 2025 A.M. Vol	Project 2025 A.M. Vol	% Vol Diff	Contribution	No Project 2010 A.M. Level of Service (LOS)	No Project 2025 A.M. LOS	Project 2025 A.M. LOS	Decline to F or Worsen F?	Change in V/C > 3%
Freeways									
I-680—north of SR 84	1,250	1,291	3.3%	41	A	A	A	no	NA
I-680—north of Bernal Ave	3,244	3,221	-0.7%	-23	B	B	B	no	NA
I-580—west of El Charro Rd	5,239	5,723	9.2%	484	B	C	C	no	NA
I-580—east of El Charro Rd	5,771	5,834	1.1%	63	B	C	C	no	NA
I-580—west of Livermore Ave	5,488	5,538	0.9%	50	C	C	C	no	NA
Arterials									
SR 84—east of I-680	693	680	-1.9%	-13	C	C	C	no	NA
SR 84—north of Stanley Blvd	3,313	3,327	0.4%	14	F	F	F	yes	no
SR 84—south of Airway Blvd	2,516	2,706	7.6%	190	F	C	D	no	NA
Stanley Blvd—west of SR 84	894	882	-1.3%	-12	B	B	B	no	NA
Stanley Blvd—west of Murrieta Blvd	860	853	-0.8%	-7	B	B	B	no	NA
Santa Rita Rd north of Valley Ave	3,558	3,531	-0.8%	-27	F	F	F	yes	no
Holmes St—south of Murrieta Blvd	823	832	1.1%	9	D	D	D	no	NA
South Livermore Ave—north of East Ave	514	507	-1.4%	-7	D	D	D	no	NA
North Livermore Ave—south of Las Positas Rd	1,049	1,015	-3.2%	-34	D	D	D	no	NA
First St—south of Portola Ave	1,575	1,559	-1.0%	-16	D	D	D	no	NA
First St—south of I-580	1,377	1,354	-1.7%	-23	D	D	D	no	NA

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Table E-35. El Charro Specific Plan Traffic Impact Segment Operations Analysis for Metropolitan Transportation System Segments, Cumulative 2025, A.M. Peak (Southbound/Westbound)

Link Location	No Project 2025 A.M. Vol	Project 2025 A.M. Vol	% Vol Diff	Vol Diff	No Project 2010 A.M. Level of Service (LOS)	No Project 2025 A.M. LOS	Project 2025 A.M. LOS	Decline to F or Worsen F?	Change in V/C > 3%
Freeways									
I-680—north of SR 84	7,329	7,462	1.8%	133	F	F	F	yes	No
I-680—north of Bernal Ave	5,810	5,744	-1.1%	-66	D	E	E	no	NA
I-580—west of El Charro Rd	9,299	9,193	-1.1%	-106	E	F	F	yes	No
I-580—east of El Charro Rd	9,196	9,236	0.4%	40	F	F	F	no	No
I-580—west of Livermore Ave	9,074	9,175	1.1%	101	F	F	F	yes	No
Arterials									
SR 84—east of I-680	1,800	1,791	-0.5%	-9	F	F	F	no	NA
SR 84—north of Stanley Blvd	2,646	2,648	0.1%	2	F	C	C	no	NA
SR 84—south of Airway Blvd	2,425	2,423	-0.1%	-2	F	C	C	no	NA
Stanley Blvd—west of SR 84	3,126	3,228	3.3%	102	F	F	F	yes	yes
Stanley Blvd—west of Murrieta Blvd	2,181	2,210	1.3%	29	B	B	B	no	NA
Santa Rita Rd north of Valley Ave	1,738	1,768	1.7%	30	C	D	D	no	NA
Holmes St—south of Murrieta Blvd	662	653	-1.4%	-9	D	D	D	no	NA
South Livermore Ave—north of East Ave	252	250	-0.8%	-2	D	D	D	no	NA
North Livermore Ave—south of Las Positas Rd	1,474	1,474	0.0%	0	D	D	D	no	NA
First St—south of Portola Ave	1,851	1,873	1.2%	22	E	F	F	yes	no
First St—south of I-580	2,056	2,041	-0.7%	-15	D	D	D	no	NA

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Table E-36. El Charro Specific Plan Traffic Impact Segment Operations Analysis for Metropolitan Transportation System Segments, Cumulative 2025, P.M. Peak (Northbound/Eastbound)

Link Location	No Project 2025 P.M. Vol	Project 2025 P.M .Vol	% Vol Diff	Contribution	No Project 2010 P.M. Level of Service (LOS)	No Project 2025 P.M. LOS	Project 2025 P.M. LOS	Decline to F or Worsen F?	Change in V/C > 3%
Freeways									
I-680—north of SR 84	6,951	7,046	1.4%	95	F	F	F	yes	No
I-680—north of Bernal Ave	5,569	5,711	2.5%	142	D	E	E	no	NA
I-580—west of El Charro Rd	9,702	9,712	0.1%	10	F	F	F	yes	No
I-580—east of El Charro Rd	9,337	9,518	1.9%	181	F	F	F	yes	No
I-580—west of Livermore Ave	9,112	9,173	0.7%	61	F	F	F	yes	No
Arterials									
SR 84—east of I-680	1,731	1,770	2.3%	39	F	F	F	yes	No
SR 84—north of Stanley Blvd	2,517	2,433	-3.3%	-84	F	C	C	no	NA
SR 84—south of Airway Blvd	2,499	2,297	-8.1%	-202	F	C	C	no	NA
Stanley Blvd—west of SR 84	3,083	2,954	-4.2%	-129	F	F	F	no	NA
Stanley Blvd—west of Murrieta Blvd	1,962	1,976	0.7%	14	B	B	B	no	NA
Santa Rita Rd north of Valley Ave	1,855	1,819	-1.9%	-36	D	D	D	no	NA
Holmes St—south of Murrieta Blvd	614	617	0.5%	3	D	D	D	no	NA
South Livermore Ave—north of East Ave	355	351	-1.1%	-4	D	D	D	no	NA
North Livermore Ave—south of Las Positas Rd	1,170	1,192	1.9%	22	D	D	D	no	NA
First St—south of Portola Ave	1,972	1,995	1.2%	23	D	F	F	yes	no
First St—south of I-580	1,855	1,869	0.8%	14	D	D	D	no	NA

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Table E-37. El Charro Specific Plan Traffic Impact Segment Operations Analysis for Metropolitan Transportation System Segments, Cumulative 2025, P.M. Peak (Southbound/Westbound)

Link Location	No Project 2025 P.M. Vol	Project 2025 P.M. Vol	% Vol Diff	Contribution	No Project 2010 P.M. Level of Service (LOS)	No Project 2025 P.M. LOS	Project 2025 P.M. LOS	Decline to F or Worsen F?	Change in V/C > 3%
Freeways									
I-680—north of SR 84	5,657	5,676	0.3%	19	E	E	E	No	NA
I-680—north of Bernal Ave	5,861	5,874	0.2%	13	E	E	E	No	NA
I-580—west of El Charro Rd	5,781	6,349	9.8%	568	C	C	C	No	NA
I-580—east of El Charro Rd	6,529	6,654	1.9%	125	C	C	C	No	NA
I-580—west of Livermore Ave	5,947	5,993	0.8%	46	C	C	C	No	NA
Arterials									
SR 84—east of I-680	1,424	1,424	0.0%	0	F	F	F	No	NA
SR 84—north of Stanley Blvd	3,298	3,275	-0.7%	-23	F	F	F	No	NA
SR 84—south of Airway Blvd	3,159	3,121	-1.2%	-38	F	F	F	No	NA
Stanley Blvd—west of SR 84	1,620	1,527	-5.7%	-93	B	C	C	No	NA
Stanley Blvd—west of Murrieta Blvd	1,146	1,177	2.7%	31	B	B	B	No	NA
Santa Rita Rd north of Valley Ave	3,743	3,740	-0.1%	-3	F	F	F	No	NA
Holmes St—south of Murrieta Blvd	991	967	-2.4%	-24	D	D	D	No	NA
South Livermore Ave—north of East Ave	523	515	-1.5%	-8	D	D	D	No	NA
North Livermore Ave—south of Las Positas Rd	689	652	-5.4%	-37	D	D	D	No	NA
First St—south of Portola Ave	1,822	1,791	-1.7%	-31	D	F	E	No	NA
First St—south of I-580	1,285	1,289	0.3%	4	D	D	D	No	NA

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Table E-38. MTS Transit Analysis—LAVTA Transit Ridership Comparison

Home-Based Work Trips *(Difference between no-project and project are attribtuted to the project)*								
	No Project		**Project**		**Change**		**Percent Change**	
Year	2010	2025	2010	2025	2010	2025	2010	2025
LAVTA Ridership	879	1,271	864	1,268	(15)	(3)	(1.7%)	(0.2%)

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Table E-39. MTS Transit Analysis—BART Transit Ridership Comparison

Home-Based Work Trips *(Difference between no-project and Project are attributed to the Project)*								
	No Project		**Project**		**Change**		**Percent Change**	
Year	2010	2025	2010	2025	2010	2025	2010	2025
Dublin/Pleasanton BART Station	2,777	4,136	2,786	4,087	9	(49)	0.3%	(1.2%)

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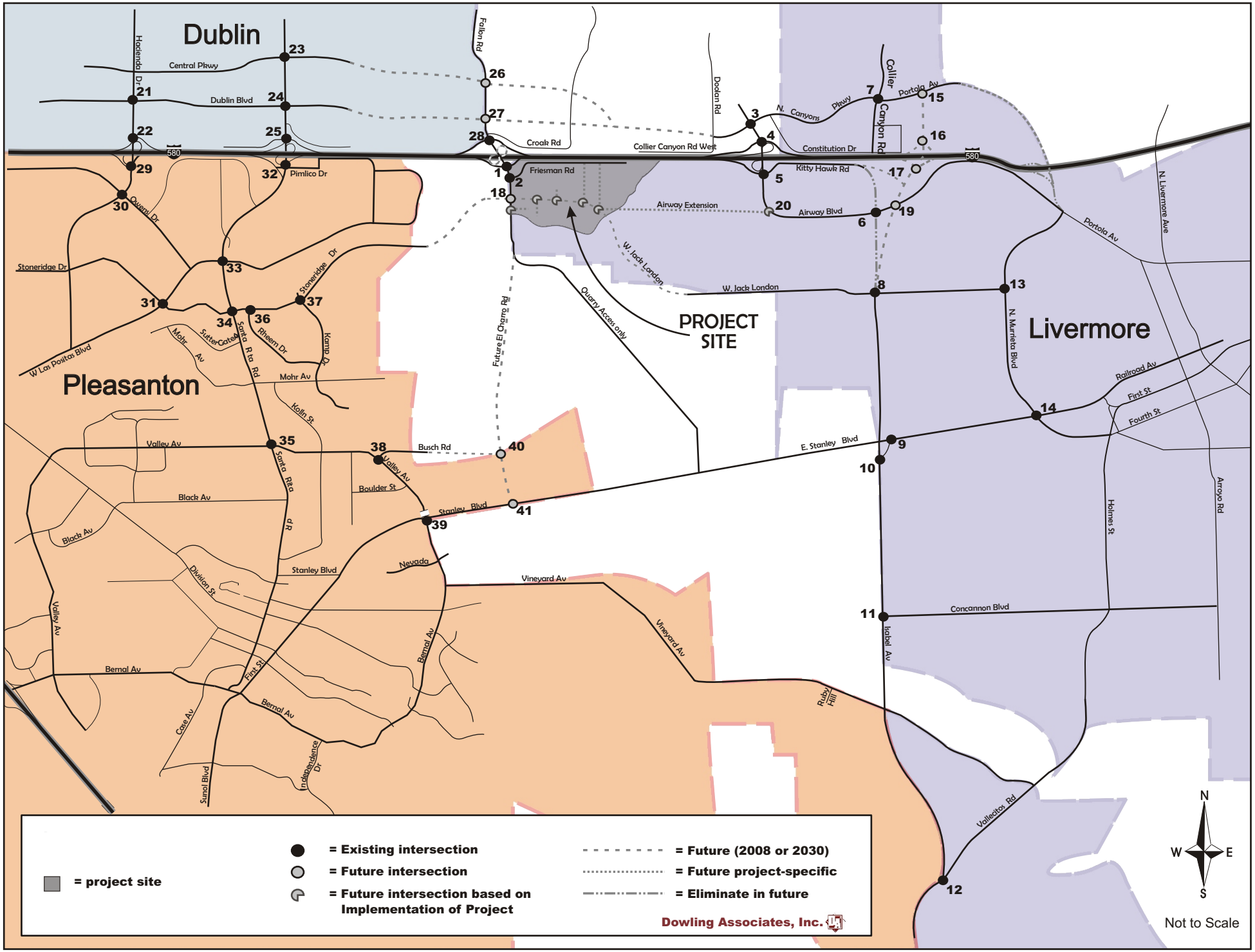


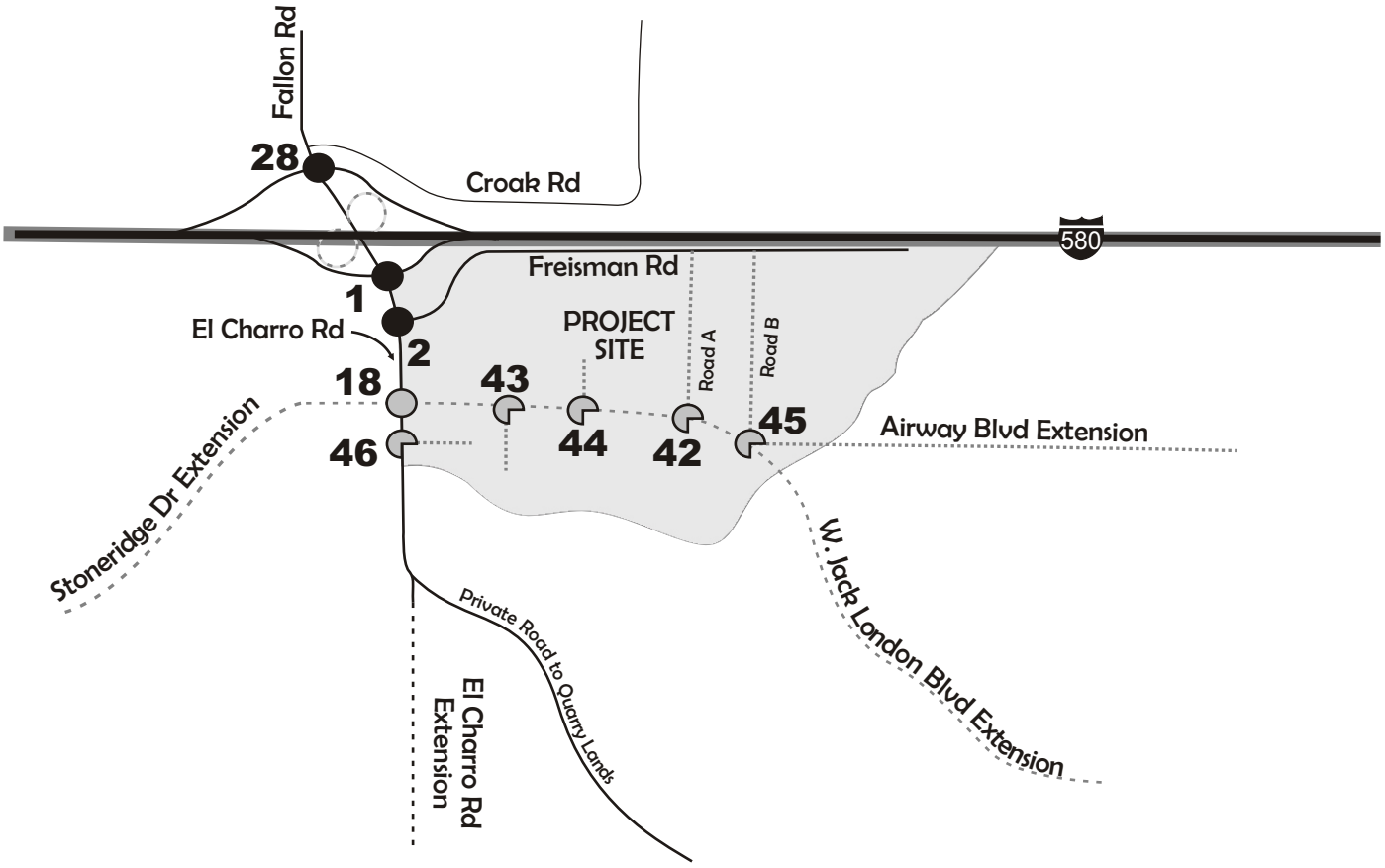
Figure E-1 Traffic Study Area and Intersections (1-41)

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Figure E-2a
Study Area Access Points (42-46)

= four-way stop
= stop sign
= signalized intersection
= Existing intersection
= Future intersection
= Future intersection based on Implementation of Project
= Future (2008 or 2030)
= Future project-specific
= Eliminate in future

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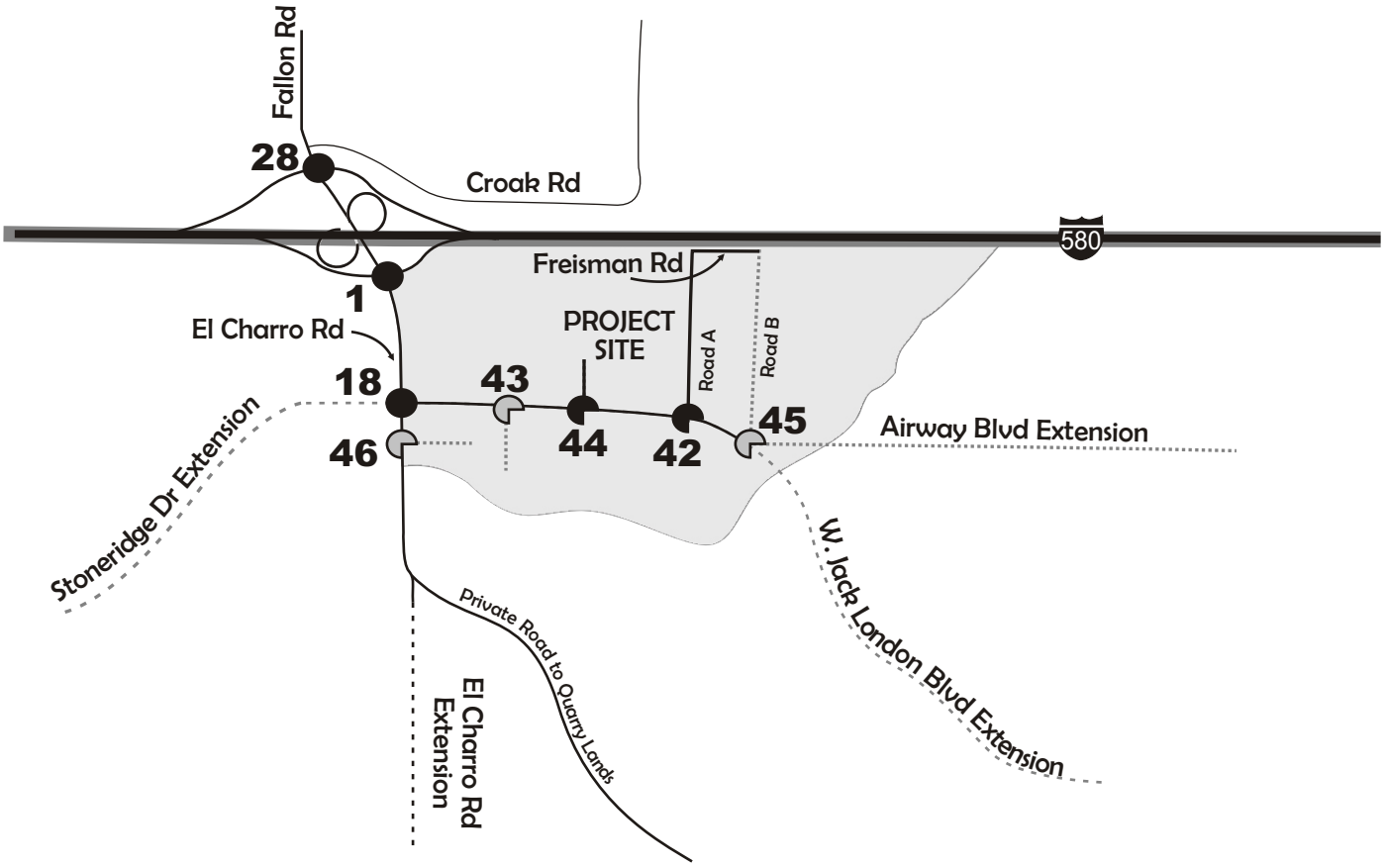
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Fig E-2b 2008+ Prime Outlets L.V.

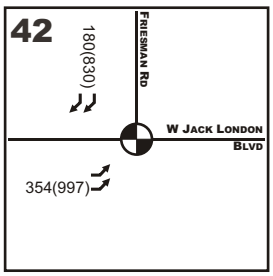
xx(xx) = AM(PM) traffic volume
= four-way stop
= stop sign
= signalized intersection
= Existing intersection
= Future intersection
= Future intersection based on Implementation of Project
= Future (2008 or 2030)
= Future project-specific
= Eliminate in future

Dowling Associates, Inc.

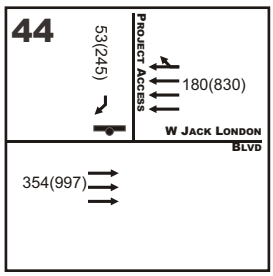




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Fig E-2c 2008 Baseline + Full Project
Jack London Extension Alignment

xx(xx) = AM(PM) traffic volume

= four-way stop

= stop sign

= signalized intersection

= Existing intersection

= Future intersection

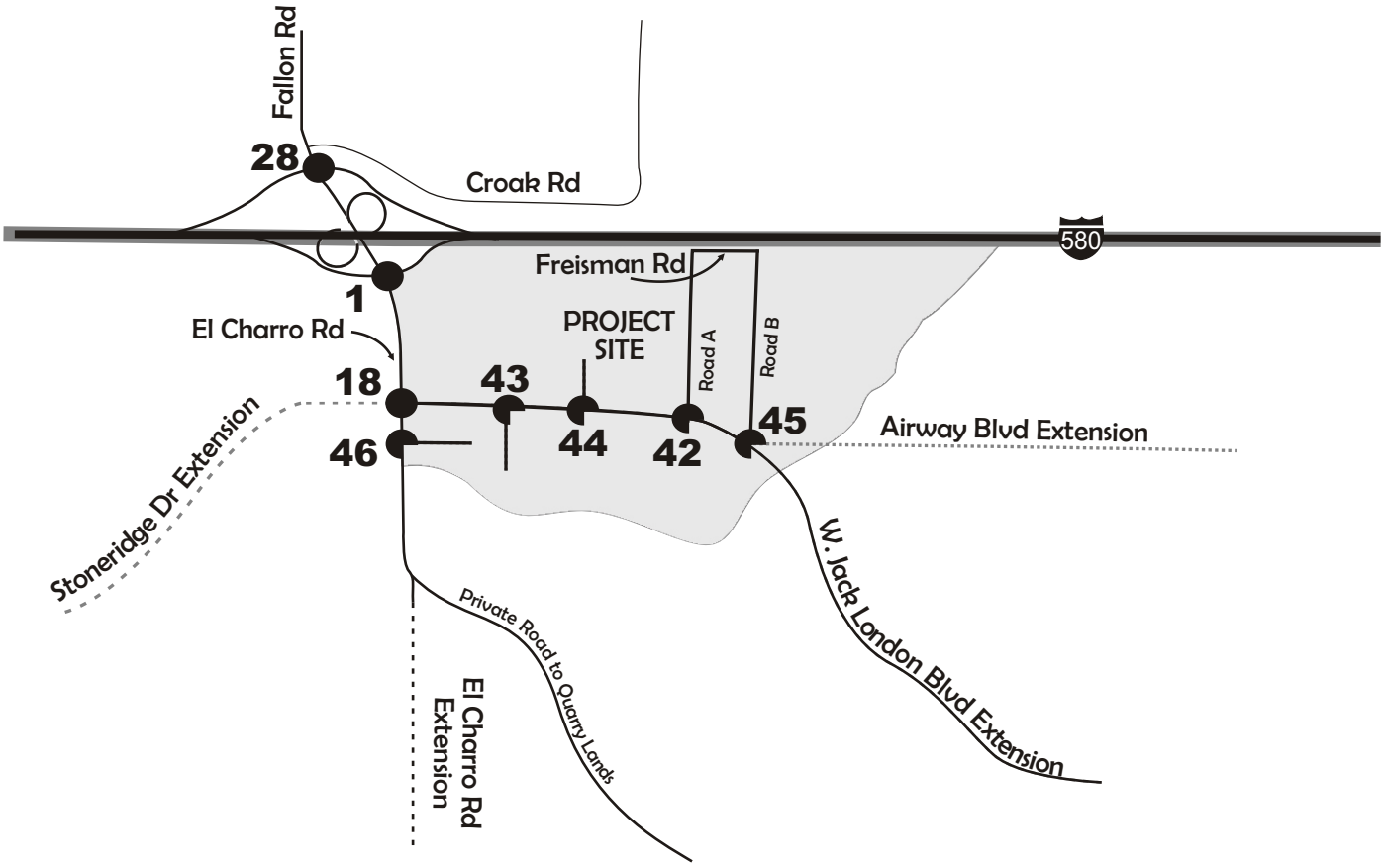
= Future intersection based on Implementation of Project

= Future (2008 or 2030)

= Future project-specific

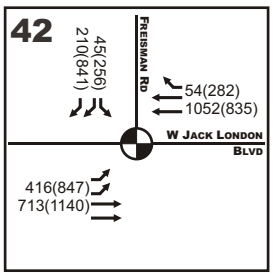
= Eliminate in future

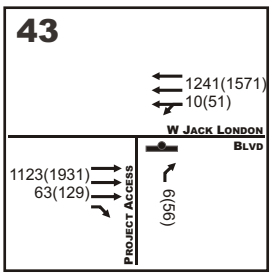
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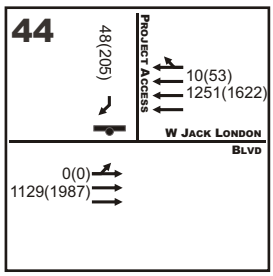


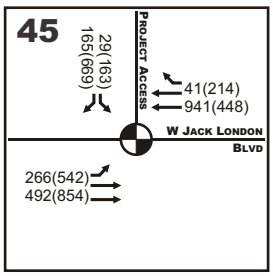


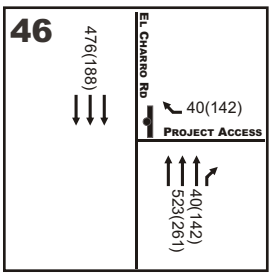
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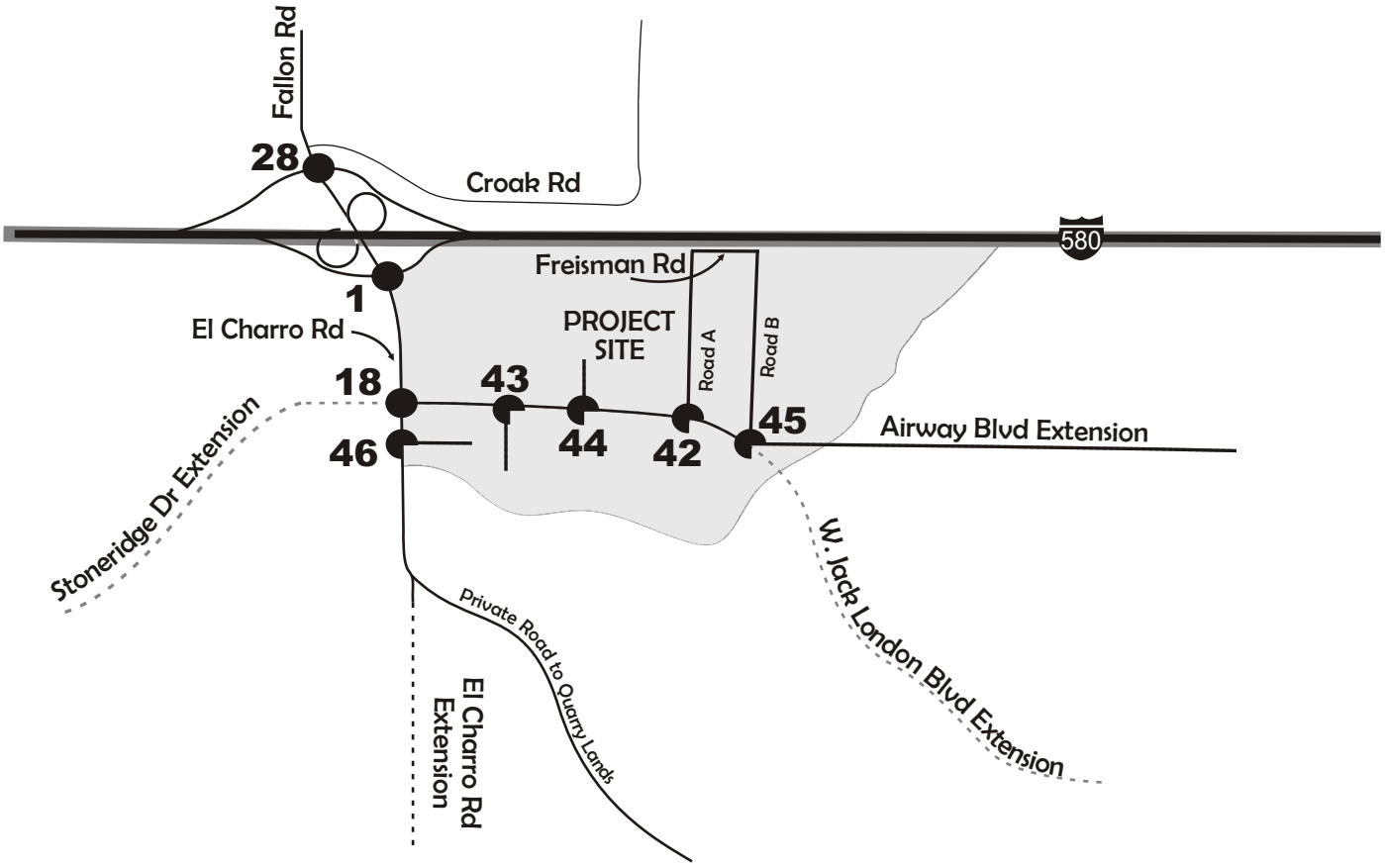


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Fig E-2d 2008 Baseline + Full Project
Airway Boulevard Extension Alignment

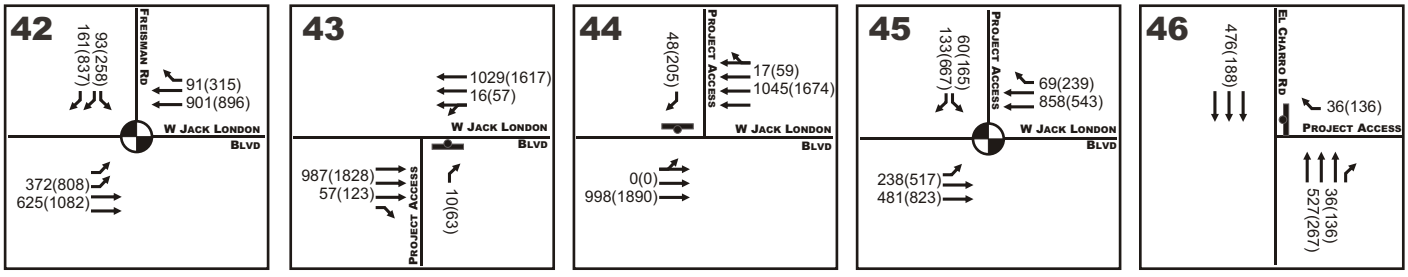
xx(xx) = AM(PM) traffic volume
= four-way stop
= stop sign
= signalized intersection
= Existing intersection
= Future intersection
= Future intersection based on Implementation of Project
= Future (2008 or 2030)
= Future project-specific
= Eliminate in future

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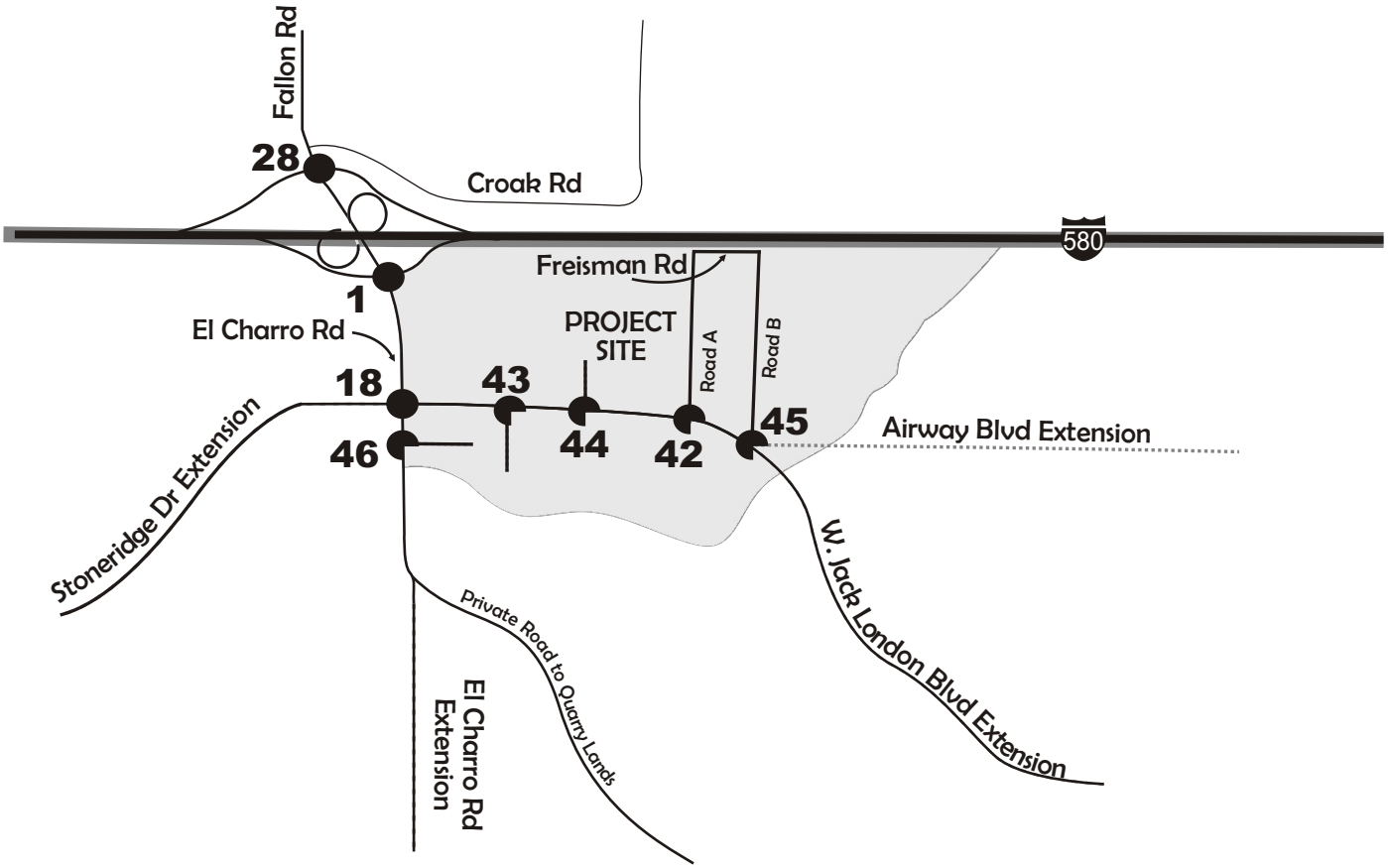


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Fig E-2e 2030 Cumulative + Full Project + Jack London Extension Alignment

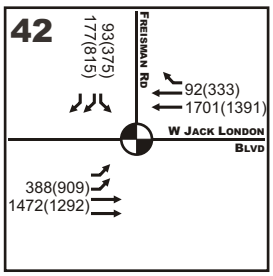
xx(xx) = AM(PM) traffic volume
= four-way stop
= stop sign
= signalized intersection
= Existing intersection
= Future intersection
= Future intersection based on Implementation of Project
= Future (2008 or 2030)
= Future project-specific
= Eliminate in future

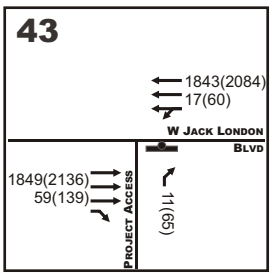
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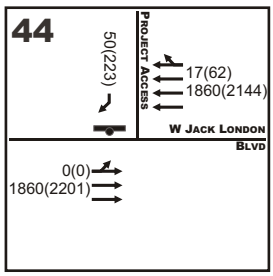


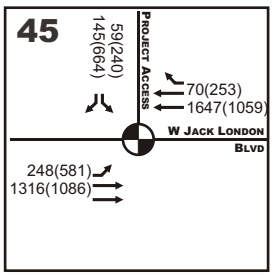


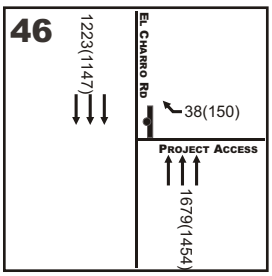
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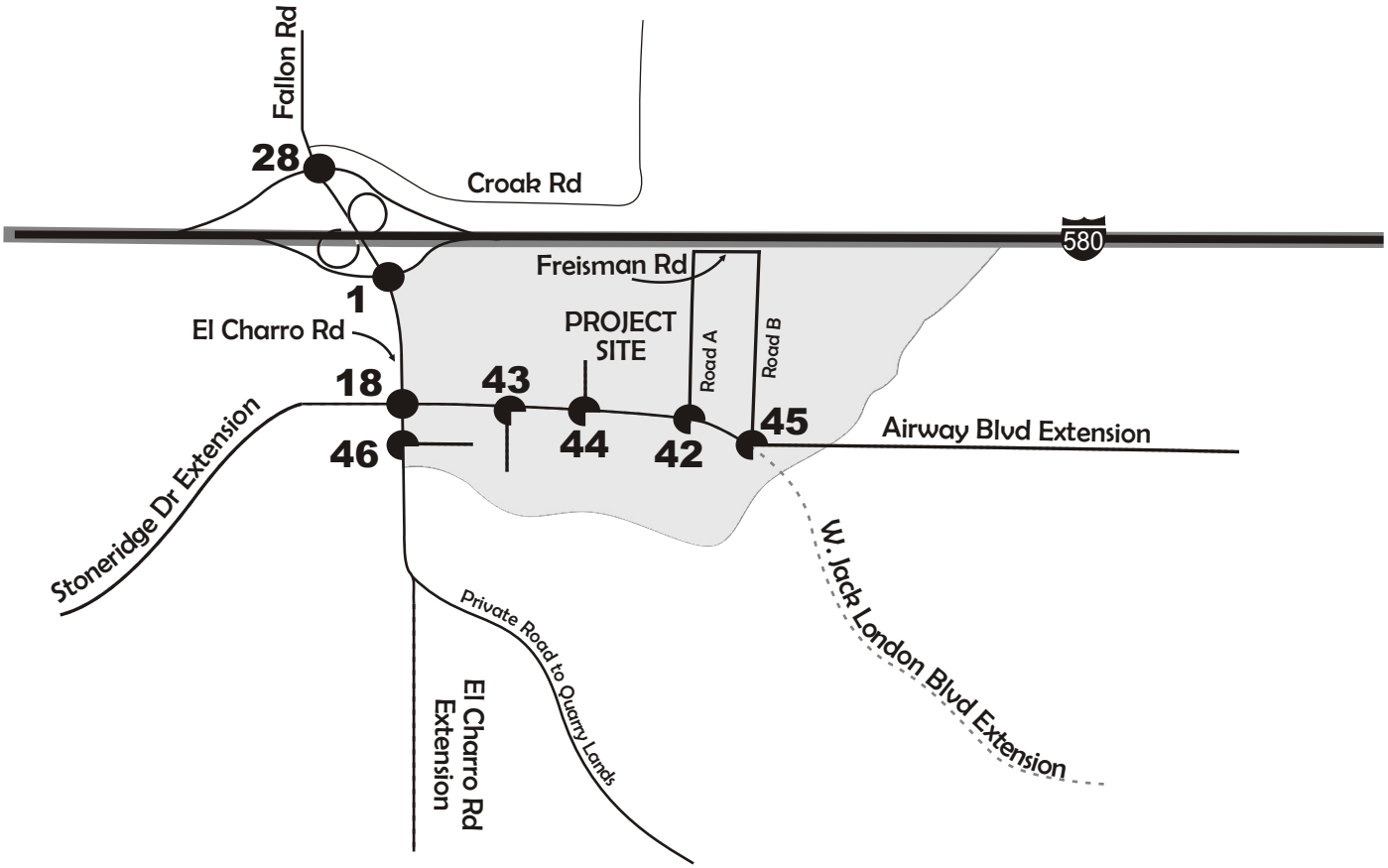


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Fig E-2f 2030 Cumulative + Full Project + Airway Blvd. Extension Alignment

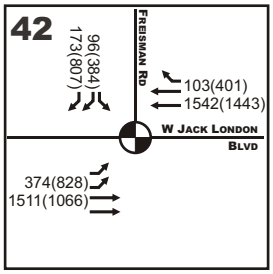
xx(xx) = AM(PM) traffic volume
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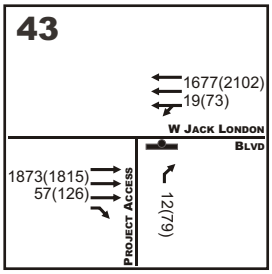
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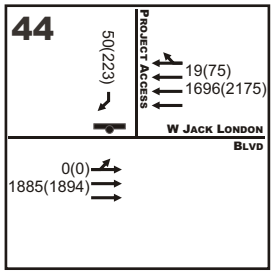


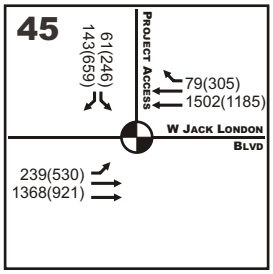
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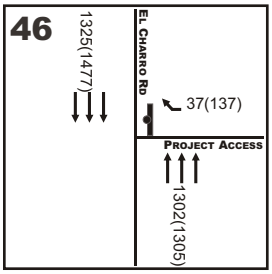
Not to Scale









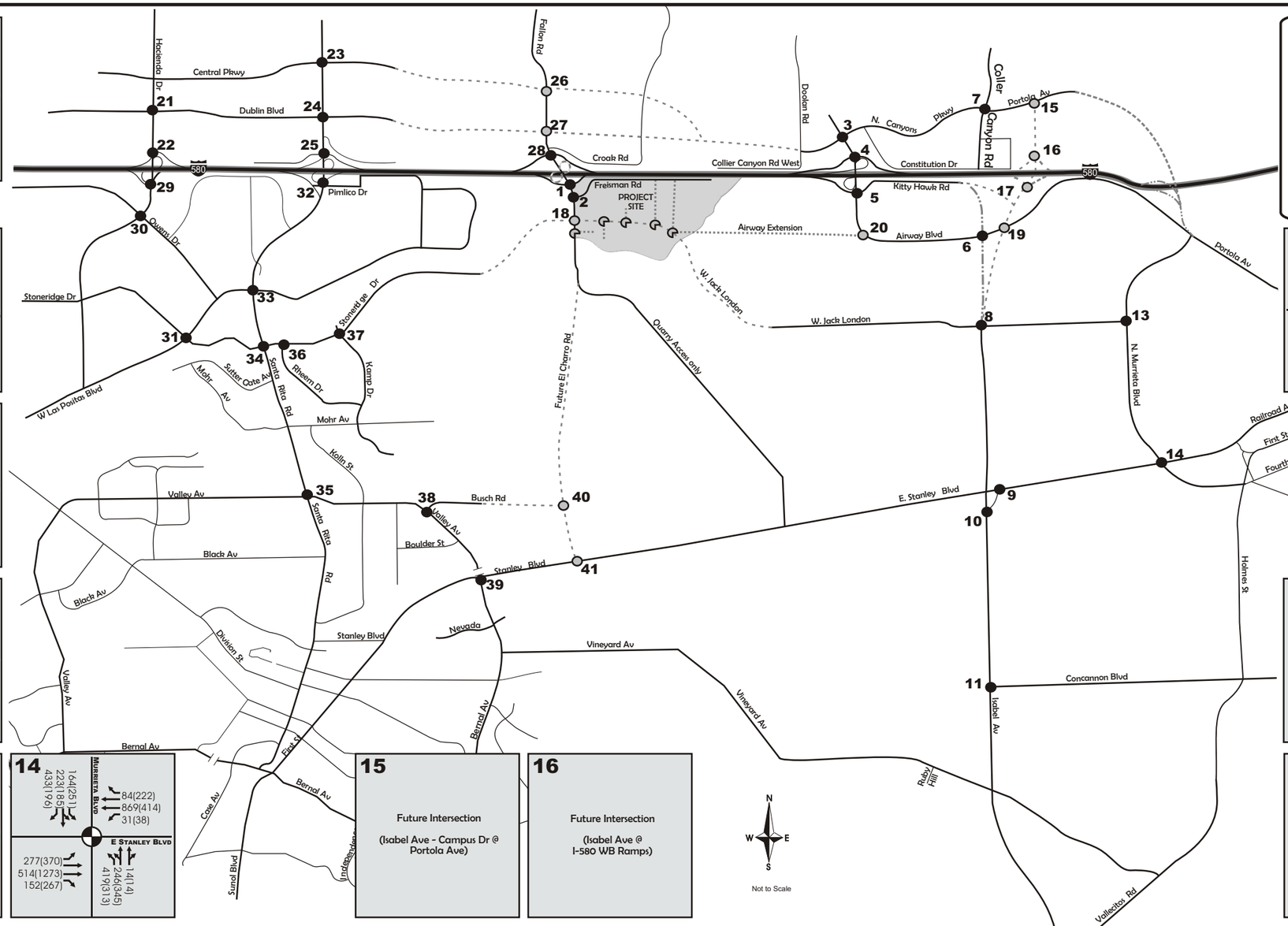


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Figure E-3 Existing (2006) Intersection Volumes and Geometries

xx(xx) = AM(PM) traffic volume
= four-way stop
= stop sign
= signalized intersection
= Existing intersection
= Future intersection
= Future intersection based on Implementation of Project
= Future (2008 or 2030)
= Future project-specific
= Eliminate in future

Dowling Associates, Inc.



1
El Charro Rd / I-580 EB Ramps
35(855) 13(27) | 41(8) 8(50) 79(44) | 14(49) 88(25)

2
El Charro Rd / Freisman Rd
5(53) 82(26) | 2(32) 1(0) | 1(0) 99(85)

3
North Canyons Pkwy / Airway Blvd
9(4) 441(1186) | 10(8) 33(69) | 1068(616) 552(136)

4
Airway Blvd / I-580 WB Ramps
340(728) 491(632) | 0(0) 0(0) | 578(717) 37(0) 213(245) | 1058(602) 1390(1522) 0(0)

5
Airway Blvd / Kitty Hawk Rd
I-580 EB Ramps: 46(103) 149(532) 170(343) | 767(330) 33(205) 9(7)
681(276) 213(64) 545(453) | 2(5) 1032(690) 78(224)

6
Kitty Hawk Rd / Airway Blvd-E / Kitty Hawk Rd
24(107) 16(127) 9(5) | 525(71) 245(120) 74(23)
11(6) 193(96) 459(782) | 40(59) 639(251) 842(587)

7
Collier Canyon Rd / North Canyons Pkwy
0(0) 13(4) 198(248) | 2(4) 10(24) 3(3)
270(239) 51(8) 52(2) | 2(0) 2(6) 2(23)

8
Isabel Ave / Jack London Blvd
216(301) 505(552) 8(4) | 160(205) 14(27) 86(154)
22(15) 27(14) 24(11) | 279(374) 528(639) 20(4)

9
E Stanley Blvd Off-Ramp / Isabel Ave
1697(517) 253(137) | 513(2384) 170(582) | 188(173) 576(266)

10
Isabel Ave / E. Stanley Blvd On-Ramp
340(210) 436(764) | 268(461) 146(271) | 414(189) 649(524)

11
Isabel Ave / Concannon Blvd
230(596) 373(476) | 811(377) 497(79) | 46(598) 28(380)

12
Isabel Ave / Vallecitos Rd
1(3) 955(505) | 4(14) 562(337) | 244(411) 432(1354)

13
Murrieta Blvd / E Jack London Blvd
376(177) 110(71) | 292(84) 58(47)
102(99) 259(256) | 398(563) 52(164)

14
Murrieta Blvd / E Stanley Blvd
164(251) 223(185) 433(196) | 84(222) 869(414) 31(38)
277(370) 514(1273) 152(267) | 14(14) 246(345) 419(313)

15
Future Intersection
(Isabel Ave - Campus Dr @ Portola Ave)

16
Future Intersection
(Isabel Ave @ I-580 WB Ramps)

17
Future Intersection
(Isabel Ave @ I-580 EB Ramps)

18
Future Intersection
(El Charro Rd @ W Jack London Blvd)

19
Future Intersection
(Isabel Ave @ Airway Blvd)

20
Future Intersection*
(Airway Blvd @ Airway Extension)

21
Hacienda Dr / Dublin Blvd
28(86) 431(703) 103(24) | 39(16) 354(387) 261(191)
111(157) 243(840) 129(487) | 102(356) 540(467) 504(376)

22
Hacienda Dr / I-580 WB Ramps
0(0) 380(650) 385(616) | 271(406) 598(286)
307(771) 724(1357) 0(0)

23
Tassajara Rd / Central Pkwy
10(4) 976(622) 6(0) | 8(14) 0(0) 11(10)
3(2) 0(1) 3(5) | 14(6) 421(1144) 5(58)

24
Tassajara Rd / Dublin Blvd
4(10) 988(451) 132(85) | 7(6) 33(21) 97(104)
69(543) 19(41) 187(689) | 105(32) 406(608) 343(435)

25
Tassajara Rd / I-580 WB Ramps
0(0) 677(999) 597(354) | 483(385) 441(483)
693(583) 818(861) 0(0)

26
Future Intersection
(Fallon Rd @ Central Pkwy)

27
Future Intersection
(Fallon Rd @ Dublin Blvd)

28
El Charro Rd / I-580 WB Ramps / Fallon Rd
44(789) 103(38) | 51(43) 18(3) 38(30)
23(8) 67(33)

29
Hacienda Dr / I-580 EB Ramps
0(0) 856(677) 97(293) | 121(542) 438(1505) 0(0)
553(572) 1052(501)

30
Hacienda Dr / Owens Dr
749(542) 878(242) 284(95) | 245(780) 278(334) 80(164)
63(413) 138(1093) 5(28) | 75(217) 252(827) 14(16)

31
W Las Positas Blvd / Stoneridge Dr
47(223) 410(300) 173(77) | 24(28) 739(277) 240(82)
47(313) 168(858) 12(21) | 86(278) 251(403) 32(16)

32
Santa Rita Rd / I-580 EB Ramps-Pimlico Dr
144(278) 770(970) 282(392) | 469(376) 152(160)
414(84) 139(80) 637(159) | 50(110) 1438(1934) 0(0)

33
Santa Rita Rd / W Las Positas Blvd
100(172) 840(730) 204(107) | 55(175) 261(178) 279(193)
82(328) 185(354) 32(294) | 140(106) 1088(1134) 430(332)

34
Santa Rita Rd / Stoneridge Dr
154(172) 1169(1005) 311(200) | 267(301) 241(332) 203(221)
17(160) 115(331) 210(584) | 91(123) 1330(1211) 635(205)

35
Santa Rita Rd / Valley Ave
598(907) 1114(908) 252(228) | 588(616) 411(388) 253(170)
332(322) 507(455) 256(118) | 83(145) 617(558) 205(165)

36
Miami Ave / Stoneridge Dr / Rheem Dr
5(1) 30(30) 34(13) | 0(4) 450(248) 2(3)
9(60) 207(405) 89(97) | 7(4) 0(0) 97(111)

37
Garden Creek Circle / Stoneridge Dr / Kamp Dr
4(1) 5(0) 34(13) | 3(3) 311(183) 12(9)
14(40) 137(250) 31(98) | 30(2) 4(11) 90(9)

38
207(310) 384(1584) | 352(233) 170(304) | Busch Rd | 210(233) 1595(483) | Valley Ave

39
Valley Ave / Bernal Ave / Stanley Blvd
209(1075) 233(704) 76(109) | 1154(289) 1008(292) 137(97)
188(140) 255(1134) 26(26) | 59(283) 440(282) 78(36)

40
Future Intersection
(El Charro Rd @ Busch Rd)

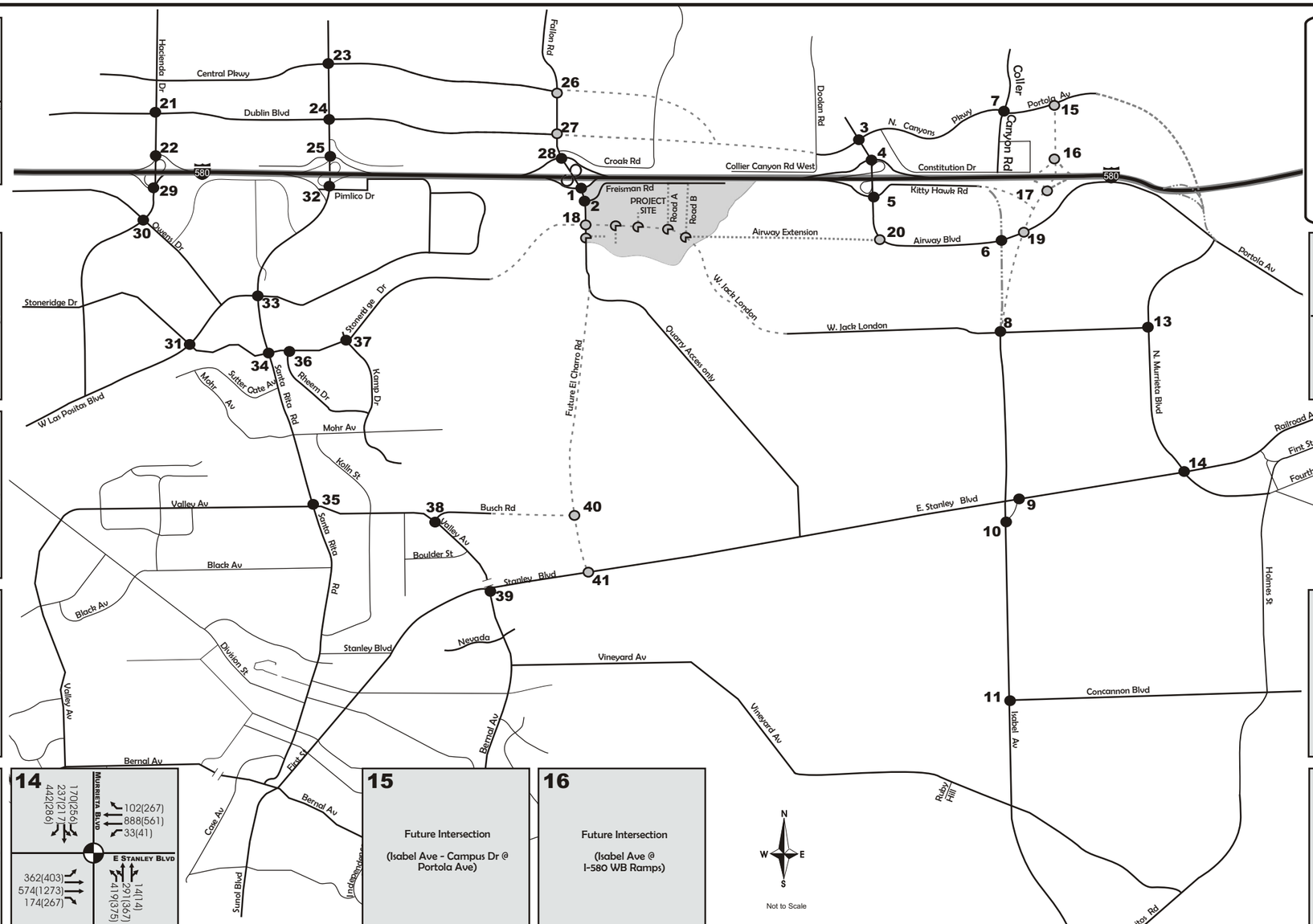
41
Future Intersection
(El Charro Rd @ Stanley Blvd)

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Figure E-4 Future Baseline (2008) Intersection Volumes and Geometries

xx(xx) = AM(PM) traffic volume
= four-way stop
= stop sign
= signalized intersection
= Existing intersection
= Future intersection
= Future intersection based on Implementation of Project
= Future (2008 or 2030)
= Future project-specific
= Eliminate in future

Dowling Associates, Inc.



1
EL CHARRO RD / I-580 EB RAMPS
0(0) 291(183) 578(605)
77(10) 357(141)
260(203) 361(429) 0(0)

2
EL CHARRO RD / FREISMAN RD
5(63) 82(26)
2(32) 1(0)
1(0) 99(85)

3
AIRWAY BLVD / NORTH CANYONS PKWY
0(0) 1(2) 0(0)
2(2) 19(9) 757(1224)
0(0) 22(43) 68(218)
12 9(3) 703(219) 1214(758)

4
AIRWAY BLVD / I-580 WB RAMPS
433(805) 366(656) 0(0)
614(761) 37(0) 213(245)
626(602) 1649(697) 0(0)

5
AIRWAY BLVD / I-580 EB RAMPS / KITTY HAWK RD
59(147) 160(574) 227(442)
841(345) 44(66) 9(7)
760(339) 283(74) 608(453)
2(5) 1032(628) 83(88)

6
KITTY HAWK RD / AIRWAY BLVD-E / KITTY HAWK RD
63(222) 89(165) 16(5)
587(91) 245(153) 84(55)
12(6) 193(136) 543(782)
40(62) 714(251) 842(587)

7
COLLIER CANYON RD / NORTH CANYONS PKWY
7(3) 13(4) 204(248)
7(4) 249(144) 3(3)
275(244) 108(252) 53(3)
2(7) 2(6) 2(23)

8
ISABEL AVE / JACK LONDON BLVD
263(382) 597(552) 43(4)
251(205) 112(27) 152(198)
22(19) 27(139) 24(56)
279(374) 528(639) 64(4)

9
E STANLEY BLVD OFF-RAMP / ISABEL AVE
1793(729) 253(158)
641(2386) 188(650)
188(192) 604(419)

10
ISABEL AVE / E. STANLEY BLVD ON-RAMP
344(371) 437(603)
279(462) 146(367)
414(200) 835(524)

11
ISABEL AVE / CONCANNON BLVD
230(609) 373(598)
903(377) 570(81)
60(681) 398(390)

12
ISABEL AVE / VALLECITOS RD
6(21) 570(372)
6(20) 955(505)
432(1157) 255(667)

13
MURRIETA BLVD / E JACK LONDON BLVD
139(171) 130(51)
455(200) 32(39)
102(234) 318(548)
480(639) 835(244)

14
MURRIETA BLVD / E STANLEY BLVD
170(256) 237(217) 442(286)
102(267) 888(561) 33(41)
362(403) 574(1273) 174(267)
14(14) 291(367) 419(375)

15
Future Intersection
(Isabel Ave - Campus Dr @ Portola Ave)

16
Future Intersection
(Isabel Ave @ I-580 WB Ramps)

17
Future Intersection
(Isabel Ave @ I-580 EB Ramps)

18
EL CHARRO RD / W JACK LONDON BLVD
475(486) 165(128) 0(0)
0(0) 0(0) 0(0)
52(213) 0(0) 0(0)
0(0) 563(410) 0(0)

19
Future Intersection
(Isabel Ave @ Airway Blvd)

20
Future Intersection*
(Airway Blvd @ Airway Extension)

21
HACIENDA DR / DUBLIN BLVD
28(92) 999(853) 603(236)
39(16) 779(511) 261(191)
323(608) 251(1068) 516(697)
102(356) 540(467) 972(1006)

22
HACIENDA DR / I-580 WB RAMPS
978(923) 58(1603) 0(0)
438(607) 598(286)
307(611) 923(1777) 0(0)

23
TASSAJARA RD / CENTRAL PKWY
137(987) 328(310) 18(49)
15(37) 293(54) 11(94)
84(10) 55(124) 8(94)
14(245) 755(2010) 33(58)

24
TASSAJARA RD / DUBLIN BLVD
1302(1054) 222(85) 4(61)
66(7) 269(21) 618(165)
133(585) 19(142) 243(912)
105(279) 642(1648) 470(564)

25
TASSAJARA RD / I-580 WB RAMPS
1395(1743) 668(572) 0(0)
505(405) 441(483)
600(538) 1601(2439) 0(0)

26
FALLON RD / CENTRAL PKWY
23(11) 236(22) 0(0)
5(25) 312(195) 84(34)
0(0) 92(367) 0(1)
23(82) 17(176) 2(1)

27
FALLON RD / DUBLIN BLVD
0(0) 321(57) 0(0)
0(0) 29(70) 14(108)
0(0) 77(80) 356(617)
83(15) 43(258) 1083(500)

28
EL CHARRO RD / I-580 WB RAMPS
0(0) 679(677) 12(106)
906(573) 0(0) 190(112)
135(238) 303(201) 0(0)

29
HACIENDA DR / I-580 EB RAMPS
0(0) 1120(889) 330(315)
578(588) 1107(535)
240(588) 436(1505) 0(0)

30
HACIENDA DR / OWENS DR
754(630) 1074(1352) 377(1101)
245(780) 278(340) 80(164)
63(413) 151(1183) 6(37)
107(262) 254(919) 26(30)

31
W LAS POSITAS BLVD / STONERIDGE DR
59(223) 485(305) 189(94)
24(37) 740(417) 247(100)
48(314) 322(858) 21(21)
86(284) 251(464) 32(21)

32
SANTA RITA RD / I-580 EB RAMPS-PIMLICO DR
159(329) 1381(1391) 282(429)
544(505) 168(160)
774(1100) 153(80) 164(357)
1405(1906) 50(110) 0(0)

33
SANTA RITA RD / W LAS POSITAS BLVD
114(173) 1275(868) 235(109)
78(193) 261(178) 279(193)
93(599) 185(354) 32(376)
140(106) 1377(1809) 430(332)

34
SANTA RITA RD / STONERIDGE DR
154(217) 1584(1098) 312(283)
267(306) 241(332) 208(221)
25(165) 122(331) 360(584)
91(161) 153(1839) 640(302)

35
SANTA RITA RD / VALLEY AVE
810(909) 1202(945) 672(231)
604(907) 465(494) 253(232)
375(461) 578(573) 256(157)
95(170) 704(745) 257(191)

36
MR. ANI AVE / STONERIDGE DR / KAMP DR
0(4) 454(250) 3(3)
5(1) 3(3) 34(13)
7(4) 1(3) 97(111)
14(60) 209(412) 89(162)

37
GARDEN CREEK CIRCLE / STONERIDGE DR
3(3) 311(183) 12(9)
4(1) 5(1) 34(13)
30(2) 4(11) 90(10)
14(40) 137(250) 31(104)

38
257(310) 581(1705)
362(293) 207(349)
255(291) 164(615)
BUSCH RD / VALLEY AVE

39
VALLEY AVE / STANLEY BLVD / BERNAL AVE
283(1134) 404(803) 74(112)
1154(520) 1008(375) 317(149)
188(146) 317(1134) 41(26)
136(360) 557(452) 83(41)

40
Future Intersection
(El Charro Rd @ Busch Rd)

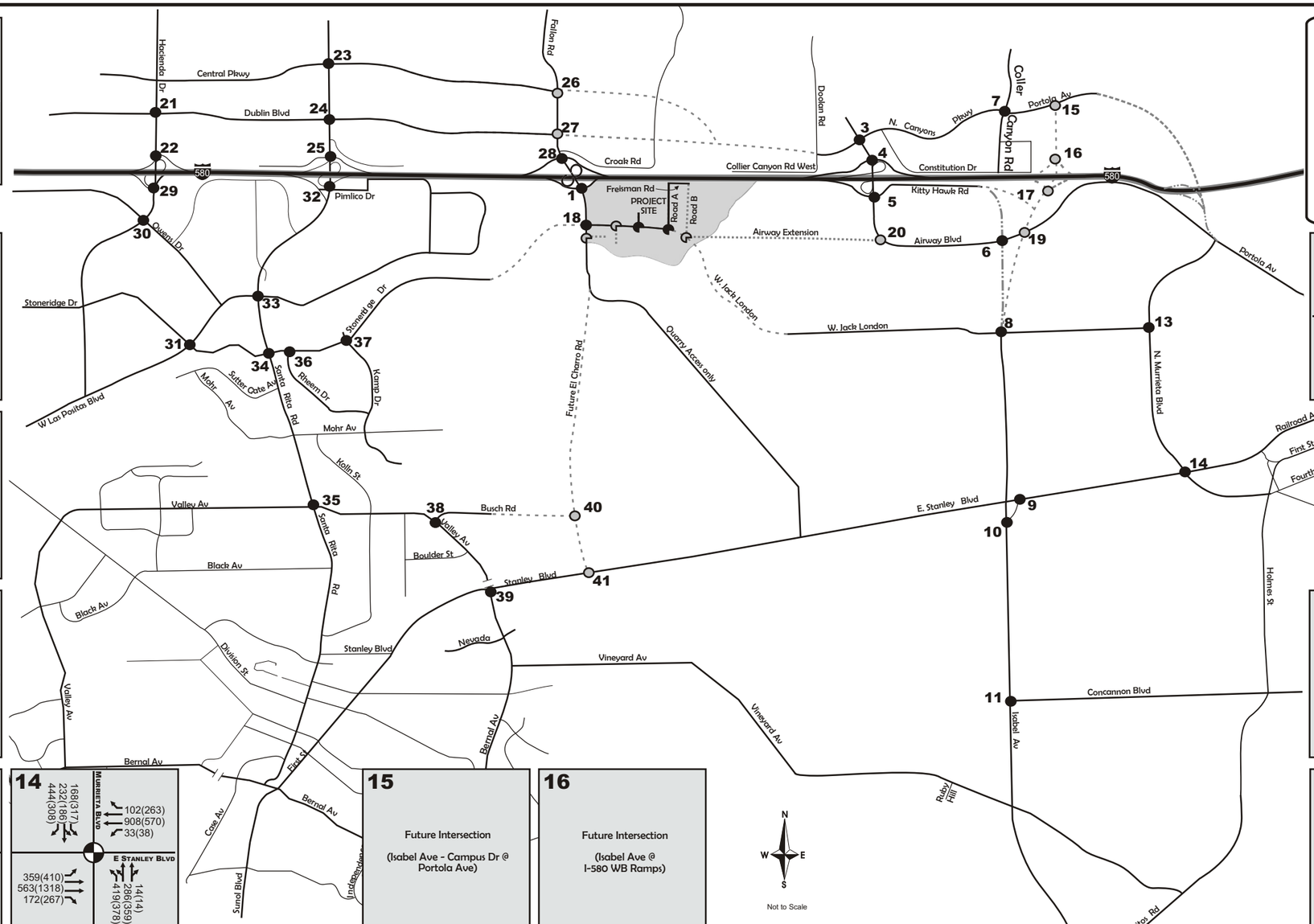
41
Future Intersection
(El Charro Rd @ Stanley Blvd)

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Fig E-5 2008 Baseline + Prime Outlets

xx(xx) = AM(PM) traffic volume
= four-way stop
= stop sign
= signalized intersection
= Existing intersection
= Future intersection
= Future intersection based on Implementation of Project
= Future (2008 or 2030)
= Future project-specific
= Eliminate in future

Dowling Associates, Inc.



Not to Scale

1
El Charro Rd & I-580 EB Ramps
0(0) / 455(747) / 578(598)
73(11) / 532(536)
336(485) / 505(1188) / 0(0)

2
El Charro Rd & Freisman Rd
0(0) / 0(0)
0(0) / 0(0)
0(0) / 0(0)

3
Airway Blvd & North Canyons Pkwy
0(0) / 1(2) / 0(0)
2(2) / 19(8) / 760(1244)
0(0) / 22(40) / 69(222)
9(3) / 709(218) / 1216(779)

4
Airway Blvd & I-580 WB Ramps
0(0) / 456(828) / 491(658)
628(740) / 37(0) / 213(245)
614(602) / 1643(738) / 0(0)

5
Airway Blvd & I-580 EB Ramps / Kitty Hawk Rd
66(201) / 174(553) / 228(442)
835(347) / 44(72) / 10(7)
719(362) / 298(64) / 613(453)
2(5) / 1033(670) / 83(88)

6
Kitty Hawk Rd & Airway Blvd E
67(226) / 93(198) / 14(5)
561(109) / 245(181) / 81(47)
12(6) / 193(110) / 555(782)
40(62) / 718(251) / 842(587)

7
Collier Canyon Rd & North Canyons Pkwy
7(3) / 13(4) / 204(250)
7(4) / 249(144) / 3(3)
275(244) / 106(254) / 53(3)
2(6) / 2(6) / 2(23)

8
Isabel Ave & W Jack London Blvd
259(395) / 599(552) / 62(4)
252(205) / 132(27) / 123(192)
22(19) / 27(154) / 24(74)
279(514) / 528(639) / 26(4)

9
E Stanley Blvd & Isabel Ave / Portola Dr
1814(729) / 253(196)
636(2404) / 185(705)
188(250) / 598(453)

10
Isabel Ave & E. Stanley Blvd On-Ramp
340(424) / 436(764)
271(471) / 146(427)
414(239) / 813(524)

11
Isabel Ave & Concannon Blvd
230(612) / 373(601)
900(377) / 516(81)
53(664) / 375(424)

12
Isabel Ave & Vallecitos Rd
5(21) / 562(373)
19(20) / 961(510)
433(1161) / 246(663)

13
Murrieta Blvd & E Jack London Blvd
139(194) / 148(47)
438(243) / 31(31)
105(192) / 307(603)
484(650) / 837(237)

14
Murrieta Blvd & E Stanley Blvd
168(317) / 232(186) / 444(308)
102(263) / 908(570) / 33(38)
359(410) / 563(1318) / 172(267)
14(14) / 286(359) / 419(378)

15
Future Intersection
(Isabel Ave - Campus Dr @ Portola Ave)

16
Future Intersection
(Isabel Ave @ I-580 WB Ramps)

17
Future Intersection
(Isabel Ave @ I-580 EB Ramps)

18
El Charro Rd & W Jack London Blvd
352(981) / 475(188) / 161(115)
230(1062) / 3(13) / 0(0)
48(202) / 3(16) / 0(0)
0(0) / 563(411) / 0(0)

19
Future Intersection
(Isabel Ave @ Airway Blvd)

20
Future Intersection*
(Airway Blvd @ Airway Extension)

21
Hacienda Dr & Dublin Blvd
28(103) / 1001(853) / 544(196)
39(16) / 659(579) / 261(191)
320(546) / 252(1147) / 540(670)
102(356) / 865(1022) / 540(476)

22
Hacienda Dr & I-580 WB Ramps
107(913) / 0(0) / 683(603)
434(690) / 598(286)
307(616) / 918(1722) / 0(0)

23
Tassajara Rd & Central Pkwy
137(960) / 328(294) / 17(47)
15(36) / 272(52) / 11(77)
83(12) / 52(117) / 8(91)
14(203) / 747(2012) / 33(58)

24
Tassajara Rd & Dublin Blvd
476(1762) / 1338(954) / 181(115)
59(27) / 222(54) / 645(419)
120(741) / 21(178) / 258(829)
107(240) / 654(1430) / 441(580)

25
Tassajara Rd & I-580 WB Ramps
1440(1762) / 597(570) / 0(0)
511(403) / 441(483)
693(566) / 602(2185) / 0(0)

26
Fallon Rd & Central Pkwy
22(10) / 234(42) / 0(0)
4(24) / 299(174) / 94(66)
0(0) / 88(347) / 2(0)
28(110) / 20(216) / 12(17)

27
Fallon Rd & Dublin Blvd
0(0) / 330(108) / 0(0)
0(0) / 30(69) / 13(113)
0(0) / 77(74) / 429(822)
81(24) / 90(343) / 1078(897)

28
El Charro Rd & I-580 WB Ramps
0(0) / 762(932) / 9(10)
794(587) / 0(0) / 271(403)
152(523) / 425(677) / 0(0)

29
Hacienda Dr & I-580 EB Ramps
0(0) / 1180(919) / 373(297)
577(598) / 1101(549)
245(654) / 438(1505) / 0(0)

30
Hacienda Dr & Owens Dr
749(622) / 1152(1402) / 364(102)
245(780) / 278(340) / 81(164)
63(413) / 150(1178) / 7(43)
106(274) / 257(927) / 25(33)

31
W Las Positas Blvd & Stoneridge Dr
60(223) / 509(319) / 73(95)
24(37) / 739(411) / 241(104)
48(315) / 315(858) / 21(21)
86(284) / 251(477) / 32(21)

32
Santa Rita Rd & I-580 EB Ramps-Pimlico Dr
156(335) / 1417(1514) / 282(392)
544(484) / 177(160)
771(1112) / 153(80) / 164(295)
50(110) / 1415(2031) / 0(0)

33
Santa Rita Rd & W Las Positas Blvd
118(173) / 1321(950) / 243(109)
74(193) / 261(178) / 279(193)
91(605) / 185(354) / 32(358)
140(106) / 1418(1927) / 430(332)

34
Santa Rita Rd & Stoneridge Dr
154(254) / 1608(1103) / 314(292)
268(307) / 241(332) / 208(221)
27(164) / 123(331) / 353(584)
91(175) / 1579(1943) / 635(288)

35
Santa Rita Rd & Valley Ave
784(916) / 1277(983) / 344(234)
619(956) / 488(490) / 253(240)
361(472) / 596(559) / 263(157)
106(172) / 730(789) / 273(189)

36
Milani Ave & Stoneridge Dr / Rheem Dr
5(1) / 34(13)
0(4) / 455(250) / 2(3)
12(60) / 208(412) / 90(212)
7(4) / 1(3) / 97(111)

37
Garden Creek Circle & Stoneridge Dr / Kamp Dr
4(1) / 5(1) / 34(13)
3(3) / 311(183) / 12(9)
14(40) / 137(250) / 31(104)
30(2) / 4(1) / 96(10)

38
Busch Rd & Valley Ave
362(297) / 207(345)
251(310) / 579(1702)
254(289) / 1702(861)

39
Valley Ave & Stanley Blvd / Bernal Ave
306(1181) / 373(752) / 76(110)
1218(546) / 1008(385) / 240(148)
188(145) / 309(1134) / 34(26)
108(401) / 531(480) / 81(42)

40
Future Intersection
(El Charro Rd @ Busch Rd)

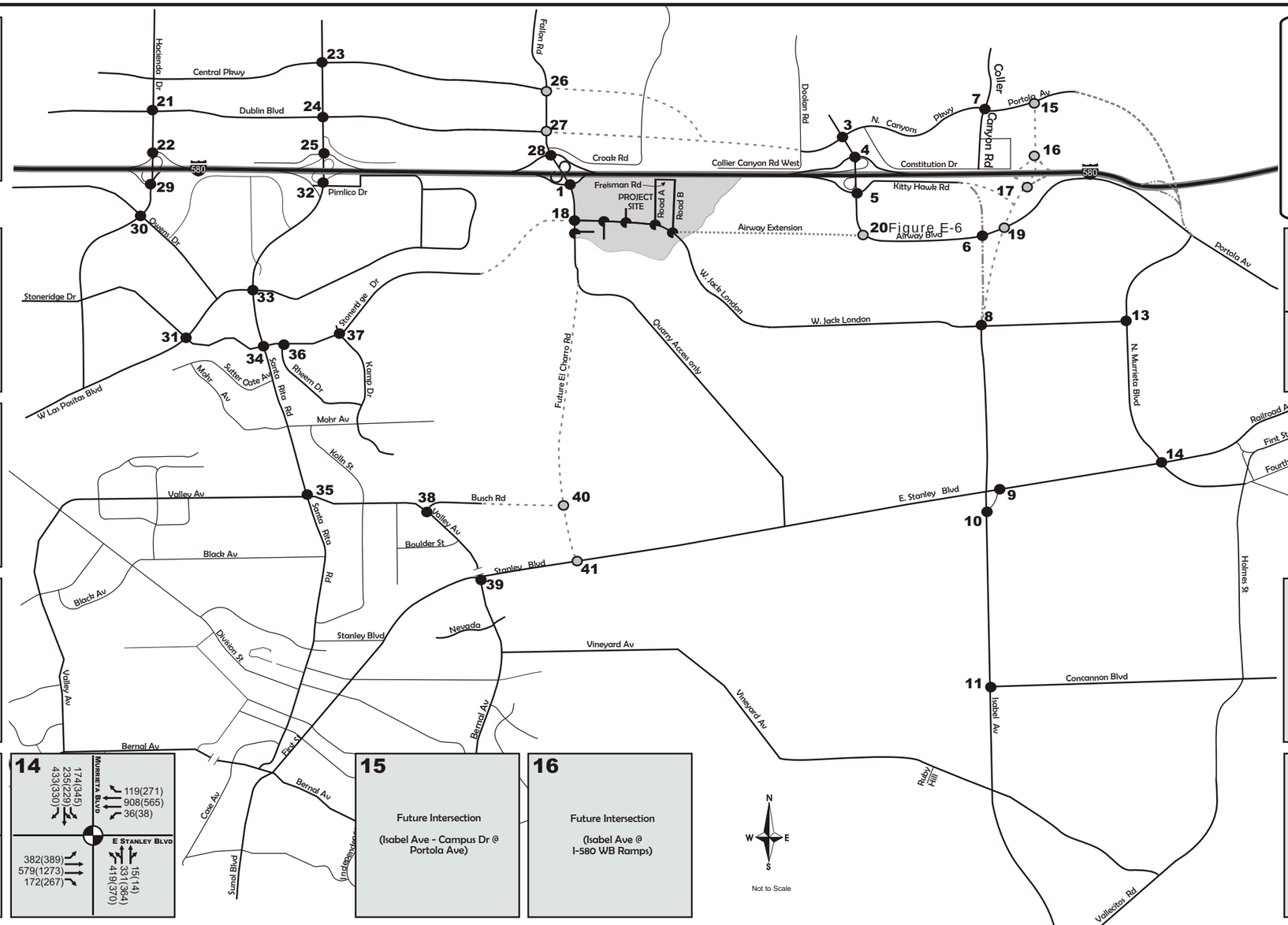
41
Future Intersection
(El Charro Rd @ Stanley Blvd)

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Figure E-6 2008 Baseline+Full Project
Jack London Extension Alignment

xx(xx) = AM(PM) traffic volume
= four-way stop
= stop sign
= signalized intersection
= Existing intersection
= Future intersection
= Future intersection based on Implementation of Project
= Future (2008 or 2030)
= Future project-specific
= Eliminate in future

Dowling Associates, Inc.



1 — El Charro Rd / I-580 EB Ramps
0(0) 749(1358) 552(580) | 380(500) 1527(1967) 0(0) | 49(10) 1042(943)

2 — El Charro Rd / Freisman Rd
0(0) 0(0) | 0(0) 0(0) | 0(0) 0(0) | 0(0) 0(0)

3 — Airway Blvd / North Canyons Pkwy
0(0) 1(2) 0(0) | 2(2) 17(7) 675(1296) | 0(0) 21(38) 68(222) | 1138(834) 9(3) 704(216)

4 — Airway Blvd / I-580 WB Ramps
0(0) 465(885) 491(654) | 620(756) 37(0) 213(245) | 647(602) 1570(776) 0(0)

5 — Airway Blvd / I-580 EB Ramps / Kitty Hawk Rd
93(145) 151(617) 240(429) | 781(372) 33(67) 9(7) | 690(350) 228(64) 545(453) | 2(5) 1056(674) 78(96)

6 — Kitty Hawk Rd / Airway Blvd-E
49(228) 47(127) 16(5) | 565(112) 306(153) 155(35) | 11(6) 193(181) 461(782) | 42(133) 639(251) 842(587)

7 — Collier Canyon Rd / North Canyons Pkwy
5(3) 13(4) 199(251) | 5(4) 252(149) 3(3) | 278(246) 108(258) 53(3) | 2(6) 2(6) 2(23)

8 — Isabel Ave / W Jack London Blvd
216(301) 505(552) 210(58) | 160(205) 724(438) 102(154) | 60(159) 172(763) 153(191) | 279(374) 528(639) 152(136)

9 — E Stanley Blvd / Isabel Ave-Portola Ave
1736(792) 260(163) | 192(208) 576(437) | 689(2384) 170(597)

10 — Isabel Ave / E. Stanley Blvd Ramp
354(393) 441(867) | 306(463) 146(330) | 414(211) 882(524)

11 — Isabel Ave / Concannon Blvd
232(694) 373(554) | 954(378) 533(116) | 90(735) 310(380)

12 — Isabel Ave / Vallecitos Rd
17(21) 600(374) | 16(34) 955(526) | 432(1142) 258(708)

13 — Murrieta Blvd / E Jack London Blvd
115(203) 307(126) | 494(260) 24(60) | 133(274) 296(778) | 424(646) 1073(433)

14 — Murrieta Blvd / E Stanley Blvd
174(345) 235(229) 433(330) | 119(271) 908(565) 36(38) | 382(389) 579(1273) 172(267) | 15(14) 331(364) 419(370)

15 — Future Intersection
(Isabel Ave - Campus Dr @ Portola Ave)

16 — Future Intersection
(Isabel Ave @ I-580 WB Ramps)

17 — Future Intersection
(Isabel Ave @ I-580 EB Ramps)

18 — El Charro Rd / W Jack London Blvd
1176(2017) 476(188) 140(95) | 1264(1744) 25(33) 0(0) | 40(178) 10(43) 0(0) | 0(0) 563(403) 0(0)

19 — Future Intersection
(Isabel Ave @ Airway Blvd)

20 — Future Intersection*
(Airway Blvd @ Airway Extension)

21 — Hacienda Dr / Dublin Blvd
28(122) 943(877) 548(144) | 39(16) 1002(847) 304(191) | 314(458) 255(1401) 596(714) | 102(356) 540(503) 832(979)

22 — Hacienda Dr / I-580 WB Ramps
0(0) 991(989) 674(603) | 420(701) 598(286) | 901(1695) 0(0) | 307(622)

23 — Tassajara Rd / Central Pkwy
18(40) 1300(942) 423(316) | 17(26) 238(49) 11(66) | 82(8) 45(86) 6(76) | 14(210) 735(2007) 37(58)

24 — Tassajara Rd / Dublin Blvd
11(176) 116(769) 271(154) | 116(65) 526(172) 887(799) | 159(839) 59(462) 237(753) | 191(497) 549(1297) 444(700)

25 — Tassajara Rd / I-580 WB Ramps
0(0) 1566(1827) 597(584) | 492(405) 441(483) | 693(534) 1539(2394) 0(0)

26 — Fallon Rd / Central Pkwy
23(10) 297(60) 0(0) | 4(23) 280(149) 110(99) | 0(0) 82(320) 8(8) | 35(141) 27(201) 26(28)

27 — Fallon Rd / Dublin Blvd
0(0) 415(168) 0(0) | 0(0) 31(72) 13(116) | 0(0) 104(75) 594(1548) | 59(27) 89(370) 1730(1522)

28 — El Charro Rd / I-580 WB Ramps
0(0) 1014(1723) 8(108) | 715(540) 0(0) 287(215) | 414(597) 1162(1379) 0(0)

29 — Hacienda Dr / I-580 EB Ramps
0(0) 1075(993) 377(315) | 266(659) 438(1505) 0(0) | 572(597) 1058(570)

30 — Hacienda Dr / Owens Dr
749(673) 1058(447) 331(103) | 245(780) 278(339) 81(164) | 64(413) 141(1184) 14(45) | 88(278) 257(937) 44(31)

31 — W Las Positas Blvd / Stoneridge Dr
64(223) 672(306) 173(93) | 24(37) 739(394) 241(97) | 48(321) 307(858) 26(21) | 86(283) 251(471) 32(19)

32 — Santa Rita Rd / I-580 EB Ramps-Pimlico Dr
161(362) 1601(1559) 282(392) | 506(509) 189(160) | 766(1186) 160(80) 156(225) | 50(110) 1467(2071) 0(0)

33 — Santa Rita Rd / Las Positas Blvd
136(174) 1303(919) 346(109) | 102(197) 261(178) 279(193) | 106(607) 185(354) 32(428) | 140(106) 1442(1949) 430(332)

34 — Santa Rita Rd / Stoneridge Dr
154(239) 1582(1137) 313(308) | 267(311) 241(332) 206(221) | 26(165) 123(331) 348(584) | 91(142) 1517(1981) 635(262)

35 — Santa Rita Rd / Valley Ave
722(907) 1307(943) 313(245) | 588(895) 416(516) 253(218) | 364(587) 589(577) 289(190) | 100(145) 707(698) 255(189)

36 — Milani Ave / Stoneridge Dr / Rheem Dr
5(0) 3(2) 34(17) | 0(4) 453(252) 4(3) | 14(60) 208(413) 89(152) | 7(4) 9(13) 9(11)

37 — Garaudy Creek Circle / Stoneridge Dr / Kamp Dr
4(1) 5(1) 34(13) | 3(3) 311(183) 12(9) | 14(40) 137(250) 31(105) | 30(2) 4(11) 96(12)

38 — Busch Rd / Valley Ave
367(290) 209(359) | 273(310) 504(1686) | 245(291) 1595(1828)

39 — Valley Ave / Stanley Blvd / Bernal Ave
209(1075) 395(847) 76(114) | 1154(535) 1008(425) 160(167) | 188(146) 264(1134) 120(26) | 230(341) 444(444) 93(44)

40 — Future Intersection
(El Charro Rd @ Busch Rd)

41 — Future Intersection
(El Charro Rd @ Stanley Blvd)

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Fig E-7 2008 Baseline + Full Project + Airway Blvd. Alignment

xx(xx) = AM(PM) traffic volume
= four-way stop
= stop sign
= signalized intersection
= Existing intersection
= Future intersection
= Future intersection based on Implementation of Project
= Future (2008 or 2030)
= Future project-specific
= Eliminate in future

Dowling Associates, Inc.

Not to Scale

1
El Charro Rd / I-580 EB Ramps
0(0) 712(1281) 512(586)
71(10) 932(921)
299(549) 1387(1967) 0(0)

2
El Charro Rd / Freisman Rd
0(0) 0(0)
0(0) 0(0)
0(0) 0(0)

3
Airway Blvd / North Canyons Pkwy
0(0) 1(2) 0(0)
2(2) 17(7) 642(1281)
0(0) 21(38) 68(217)
1107(820) 9(3) 704(216)

4
Airway Blvd / I-580 WB Ramps
0(0) 518(932) 491(664)
675(787) 37(0) 213(319)
468(602) 1483(731) 0(0)

5
Airway Blvd / I-580 EB Ramps / Kitty Hawk Rd
189(405) 181(532) 170(406)
801(516) 156(58) 159(16)
681(276) 213(79) 545(453)
8(95) 1032(590) 178(139)

6
Kitty Hawk Rd / Airway Blvd-E
101(340) 98(400) 22(10)
607(215) 245(171) 101(49)
12(9) 193(103) 631(833)
46(68) 913(404) 861(587)

7
Collier Canyon Rd / North Canyons Pkwy
5(3) 13(4) 199(251)
5(4) 252(149) 3(3)
280(247) 109(258) 53(3)
2(6) 2(6) 2(23)

8
Isabel Ave / W Jack London Blvd
324(637) 609(568) 74(4)
479(325) 148(27) 117(197)
22(70) 27(109) 24(41)
279(471) 528(639) 58(4)

9
E Stanley Blvd / Isabel Ave Ramp / Connector
1708(810) 287(146)
636(2461) 243(612)
208(189) 654(427)

10
Isabel Ave / Stanley Blvd Connector Ramp
352(307) 436(875)
378(463) 147(325)
501(269) 744(524)

11
Isabel Ave / Concannon Blvd
230(600) 373(631)
949(418) 582(79)
54(598) 330(398)

12
Isabel Ave / Vallecitos Rd
21(18) 635(346)
4(6) 955(525)
432(1195) 249(629)

13
Murrieta Blvd / E Jack London Blvd
125(181) 225(79)
460(294) 29(81)
116(221) 323(674)
450(631) 970(284)

14
Murrieta Blvd / E Stanley Blvd
178(323) 243(201) 445(317)
99(272) 869(592) 31(38)
377(402) 573(1279) 170(267)
15(14) 334(362) 440(384)

15
Future Intersection
(Isabel Ave - Campus Dr @ Portola Ave)

16
Future Intersection
(Isabel Ave @ I-580 WB Ramps)

17
Future Intersection
(Isabel Ave @ I-580 EB Ramps)

18
El Charro Rd / W Jack London Blvd
1034(1918) 476(188) 135(95)
1046(1789) 30(33) 0(0)
40(187) 10(33) 0(0)
0(0) 0(0) 563(403)

19
Future Intersection
(Isabel Ave @ Airway Blvd)

20
Airway Blvd / Airway Extension
616(466) 318(378)
326(342) 708(435)
294(597) 218(564)

21
Hacienda Dr / Dublin Blvd
28(116) 949(907) 477(159)
39(16) 915(813) 320(191)
314(480) 255(1280) 634(708)
102(356) 540(479) 851(947)

22
Hacienda Dr / I-580 WB Ramps
1060(1015) 675(605) 0(0)
429(678) 598(286)
307(592) 910(1661) 0(0)

23
Tassajara Rd / Central Pkwy
1368(912) 334(333) 17(38)
16(24) 238(56) 11(64)
79(7) 46(80) 7(72)
14(218) 740(2004) 34(58)

24
Tassajara Rd / Dublin Blvd
1229(761) 279(136) 11(166)
106(63) 459(157) 793(820)
163(766) 55(425) 239(725)
178(531) 557(1376) 431(699)

25
Tassajara Rd / I-580 WB Ramps
1540(1795) 597(587) 0(0)
489(407) 441(483)
693(530) 1523(2503) 0(0)

26
Fallon Rd / Central Pkwy
299(60) 0(0) 22(10)
4(24) 279(152) 111(97)
0(0) 82(320) 3(11)
35(141) 26(218) 17(13)

27
Fallon Rd / Dublin Blvd
413(168) 0(0)
0(0) 28(72) 16(120)
0(0) 81(76) 590(1533)
81(27) 779(372) 1552(1513)

28
El Charro Rd / I-580 WB Ramps
1007(1716) 12(105) 0(0)
702(534) 0(0) 217(152)
448(599) 1010(1378) 0(0)

29
Hacienda Dr / I-580 EB Ramps
1113(987) 408(341) 0(0)
573(590) 1061(563)
264(633) 438(1505) 0(0)

30
Hacienda Dr / Owens Dr
749(664) 1082(446) 344(102)
245(780) 278(338) 81(165)
63(413) 146(1128) 10(42)
98(269) 258(924) 34(30)

31
W Las Positas Blvd / Stoneridge Dr
62(223) 631(312) 173(94)
24(38) 739(404) 244(101)
48(325) 313(858) 26(21)
86(281) 251(478) 32(20)

32
Santa Rita Rd / I-580 EB Ramps-Pimlico Dr
160(355) 1585(1581) 282(392)
514(524) 195(160)
752(1101) 159(80) 162(245)
50(110) 1530(2159) 0(0)

33
Santa Rita Rd / W Las Positas Blvd
132(173) 1352(968) 313(109)
96(195) 261(178) 279(193)
102(635) 185(354) 32(410)
140(106) 1516(2012) 430(332)

34
Santa Rita Rd / Stoneridge Dr
154(268) 1616(1127) 314(323)
270(311) 241(332) 206(221)
28(165) 122(331) 353(584)
91(150) 1600(2053) 635(260)

35
Santa Rita Rd / Valley Ave
771(907) 1280(964) 342(237)
607(930) 459(527) 253(238)
378(604) 593(625) 267(205)
100(145) 723(713) 260(190)

36
Milani Ave / Stoneridge Dr / Rheem Dr
5(1) 34(17) 3(2)
0(4) 455(251) 2(3)
13(60) 208(413) 90(189)
7(4) 1(3) 97(111)

37
Garden Creek Cir / Stoneridge Dr / Kamp Dr
4(1) 5(1) 34(13)
3(3) 311(183) 12(9)
14(40) 137(250) 31(105)
30(2) 4(11) 96(11)

38
Busch Rd / Valley Ave
362(296) 207(346)
256(310) 570(1720)
258(290) 166(672)

39
Valley Ave / Stanley Blvd / Bernal Ave
274(1182) 397(763) 76(118)
1154(590) 1008(402) 272(143)
188(146) 325(1134) 43(26)
125(312) 565(424) 83(36)

40
Future Intersection
(El Charro Rd @ Busch Rd)

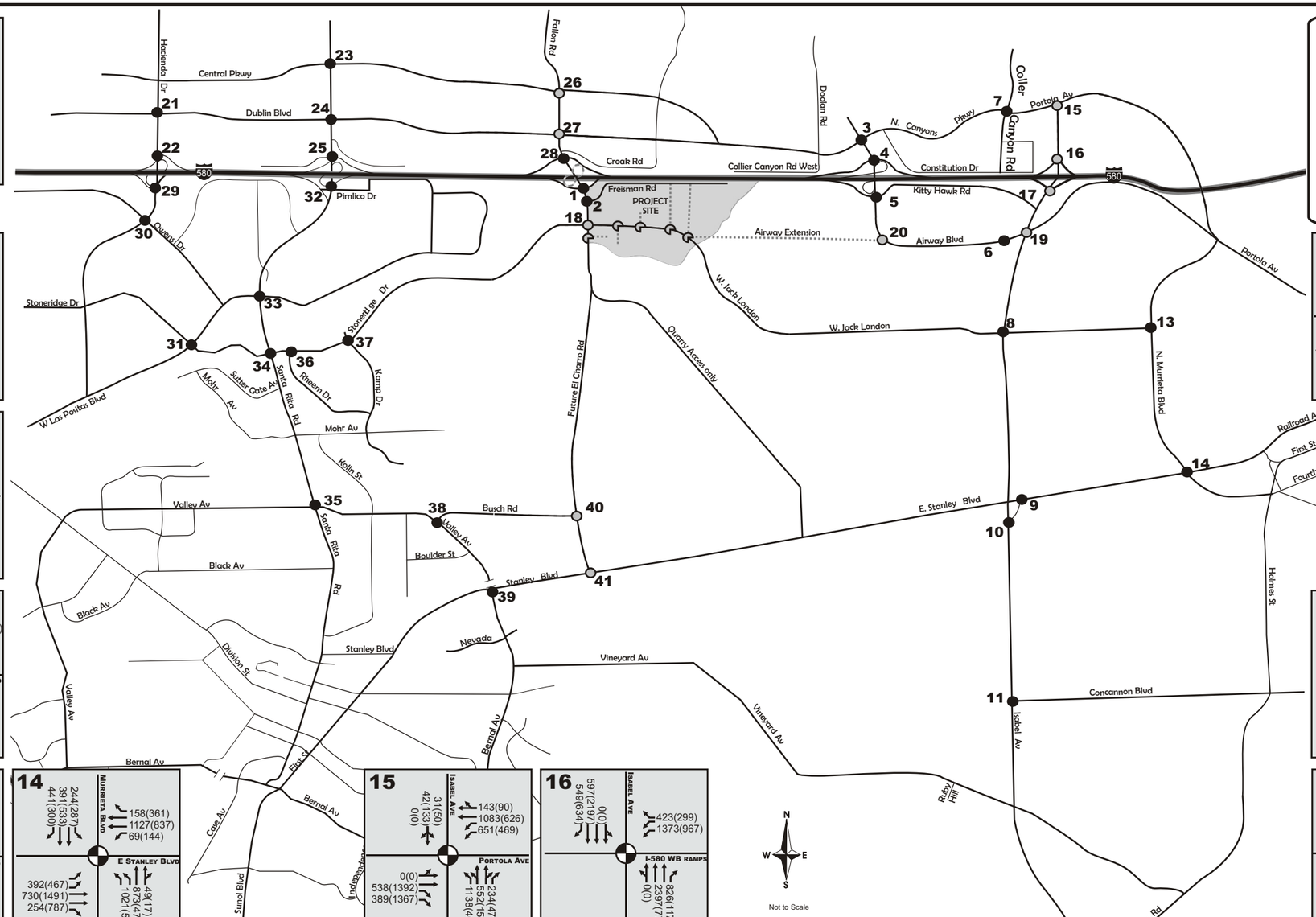
41
Future Intersection
(El Charro Rd @ Stanley Blvd)

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Fig E-8 2030 Cumulative (No Project)

xx(xx) = AM(PM) traffic volume
= four-way stop
= stop sign
= signalized intersection
= Existing intersection
= Future intersection
= Future intersection based on Implementation of Project
= Future (2008 or 2030)
= Future project-specific
= Eliminate in future

Dowling Associates, Inc.



1 — El Charro Rd × I-580 EB Ramps
2189(2128) 605(576) | 0(0) | 101(229) 716(670) | 608(619) 1754(2211) 0(0)

2 — El Charro Rd × Freisman Rd
2898(2790) 7(8) | 5(7) 4(4) | 4(4) 2356(2823)

3 — Airway Blvd × North Canyons Pkwy
0(0) 1(2) 0(0) | 2(2) 859(1312) 530(1186) | 0(0) 1030(1100) 870(456) | 9(3) 1108(698) 1068(616)

4 — Airway Blvd × I-580 WB Ramps
769(729) 595(632) 0(0) | 860(733) 37(0) 213(245) | 561(602) 1653(839) 0(0)

5 — Airway Blvd × I-580 EB Ramps-Kitty Hawk Rd
154(120) 211(542) 411(405) | 114(485) 35(112) 9(8) | 893(332) 440(69) 545(453) | 2(5) 1032(670) 82(78)

6 — Kitty Hawk Rd × Airway Blvd-E
0(0) 0(0) 0(0) | 0(0) 0(0) 0(0) | 0(0) 0(0) 0(0) | 0(0) 0(0) 0(0)

7 — Collier Canyon Rd × North Canyons Pkwy
273(101) 134(248) 198(248) | 19(51) 1742(913) 141(110) | 270(239) 749(2084) 52(2) | 51(91) 2(6) 2(23)

8 — Isabel Ave × W Jack London Blvd
458(450) 1746(2812) 416(336) | 421(235) 700(1009) 176(348) | 683(622) 399(337) 579(900) | 577(657) 1995(1937) 616(395)

9 — E Stanley Blvd × Portola Connector Ramp-Airway Blvd
1760(1364) 1308(264) | 191(1281) 576(517) | 1129(2388) 499(582)

10 — Isabel Ave × Stanley Connector Ramp
341(1673) 1316(2996) | 1297(601) 203(271) | 414(189) 2364(1534)

11 — Isabel Ave × Concannon Blvd
432(1253) 785(1818) | 900(851) 497(79) | 46(598) 1666(854)

12 — Isabel Ave × Vallecitos Rd
146(33) 956(1144) | 5(81) 955(505) | 556(993) 966(1142)

13 — Murrieta Blvd × E Jack London Blvd
111(440) 77(249) | 540(433) 25(37) | 202(120) 854(804) | 720(721) 1156(928)

14 — Murrieta Blvd × E Stanley Blvd
244(287) 391(533) 441(300) | 158(361) 1127(837) 69(144) | 392(467) 730(1491) 254(787) | 49(17) 873(473) 1021(533)

15 — Isabel Ave × Portola Ave
31(80) 42(133) 0(0) | 143(90) 1083(626) 651(469) | 0(0) 538(1392) 389(1367) | 234(479) 552(153) 1138(463)

16 — Isabel Ave × I-580 WB Ramps
597(2197) 549(634) 0(0) | 423(299) 1373(967) | 826(1178) 2397(772) 0(0)

17 — Isabel Ave × I-580 EB Ramps
1768(2576) 202(589) 0(0) | 786(1093) 2522(1658) 0(0) | 702(291) 742(1011)

18 — El Charro Rd × W Jack London Blvd
1195(1200) 990(915) 716(680) | 1065(1060) 630(727) 128(47) | 417(915) 348(534) 121(115) | 206(99) 880(852) 206(138)

19 — Isabel Ave × Airway Blvd
577(607) 1914(3341) 7(22) | 736(606) 70(163) 77(202) | 5(32) 156(274) 406(648) | 215(61) 2567(2113) 894(591)

20 — Future Intersection*
(Airway Blvd @ Airway Extension)

21 — Hacienda Dr × Dublin Blvd
33(86) 748(704) 129(24) | 39(23) 1163(1762) 1184(1358) | 114(157) 1398(1914) 1075(1307) | 265(525) 540(479) 1375(1215)

22 — Hacienda Dr × I-580 WB Ramps
0(0) 2444(2596) 617(689) | 980(1182) 0(0) 598(286) | 307(600) 1048(2605) 0(0)

23 — Tassajara Rd × Central Pkwy
33(200) 2741(2043) 6(307) | 30(158) 1031(52) 86(221) | 6(48) 63(603) 13(235) | 127(384) 1590(2325) 77(98)

24 — Tassajara Rd × Dublin Blvd
76(308) 1936(1350) 958(857) | 143(98) 567(443) 449(652) | 680(1827) 412(545) 417(890) | 542(285) 952(1373) 675(1270)

25 — Tassajara Rd × I-580 WB Ramps
0(0) 1933(2364) 674(605) | 530(404) 653(483) | 696(600) 2938(2723) 0(0)

26 — Fallon Rd × Central Pkwy
843(241) 507(150) 18(0) | 143(581) 660(367) 349(149) | 0(33) 221(754) 0(0) | 38(357) 78(898) 0(0)

27 — Fallon Rd × Dublin Blvd
0(0) 856(298) 0(0) | 0(0) 574(720) 196(781) | 0(0) 751(895) 1125(1416) | 416(314) 1161(1254) 1173(1591)

28 — El Charro Rd × I-580 WB Ramps
0(0) 1865(1920) 313(576) | 405(1281) 929(785) | 555(561) 1301(1879) 0(0)

29 — Hacienda Dr × I-580 EB Ramps
0(0) 2132(1903) 679(567) | 401(591) 438(2114) 0(0) | 658(923) 0(0) 1052(501)

30 — Hacienda Dr × Owens Dr
755(642) 1653(1077) 754(395) | 245(780) 278(339) 80(164) | 97(678) 338(1146) 22(98) | 124(227) 252(1327) 57(89)

31 — W Las Positas Blvd × Stoneridge Dr
68(223) 452(394) 173(123) | 24(35) 739(749) 311(181) | 48(313) 408(858) 22(25) | 143(344) 251(526) 32(44)

32 — Santa Rita Rd × I-580 EB Ramps-Pimlico Dr
329(317) 1920(1906) 402(410) | 608(505) 152(160) | 1573(1069) 234(119) 184(178) | 50(110) 1589(2405) 0(0)

33 — Santa Rita Rd × W Las Positas Blvd
1011(174) 1882(1095) 206(185) | 60(191) 261(178) 279(193) | 147(668) 185(354) 52(361) | 140(106) 1501(2204) 430(448)

34 — Santa Rita Rd × Stoneridge Dr
887(604) 1504(1005) 311(200) | 644(1299) 269(909) 983(243) | 17(160) 434(367) 210(584) | 146(1143) 1330(1330) 635(205)

35 — Santa Rita Rd × Valley Ave
598(907) 1144(908) 252(228) | 588(616) 411(388) 253(170) | 332(322) 507(455) 256(118) | 83(145) 617(558) 205(165)

36 — Miliani Ave × Stoneridge Dr
0(4) 1251(1217) 26(173) | 5(1) 34(13) 3(8) 34(13) | 9(60) 813(1128) 590(892) | 107(95) 2(16) 525(740) Rheem Dr

37 — Garden Creek Cir × Stoneridge Dr
9(17) 1101(1276) 12(9) | 9(3) 5(0) 69(38) | 67(105) 801(1004) 31(98) | 34(2) 4(11) 90(9) Kamp Dr

38 — Busch Rd × Valley Ave
464(343) 276(311) | 245(318) 684(1584) | 210(266) 1595(755)

39 — Valley Ave × Stanley Blvd
417(1075) 472(711) 76(109) | 1154(372) 1091(1034) 518(761) | 188(141) 1075(1134) 111(100) | 435(497) 446(552) 167(193) Bernal Ave

40 — El Charro Rd × Busch Rd
633(654) 93(78) | 603(605) 331(185) | 46(120) 55(159)

41 — El Charro Rd × Stanley Blvd
116(287) 571(726) | 379(277) 1884(1658) | 554(414) 1631(1931)

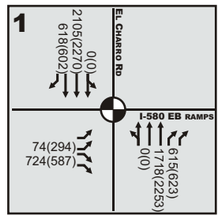
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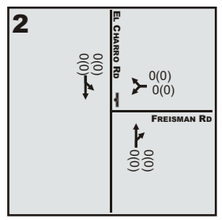
Fig. E-9 2030 Cumulative + Full Project
Jack London Extension Alignment

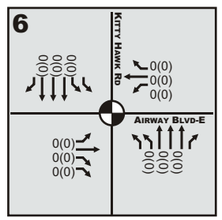
xx(xx) = AM(PM) traffic volume
= four-way stop
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= Existing intersection
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= Future intersection based on Implementation of Project
= Future (2008 or 2030)
= Future project-specific
= Eliminate in future

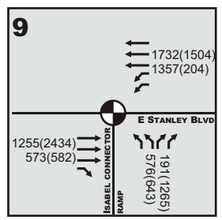
Dowling Associates, Inc.

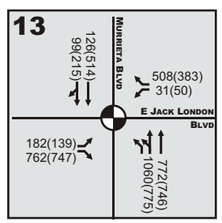
Not to Scale

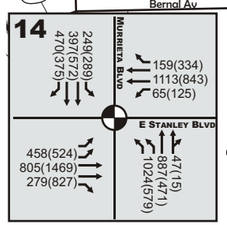


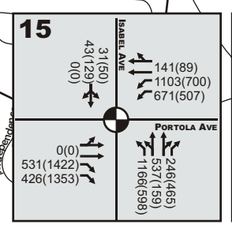


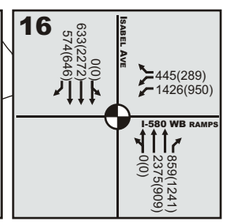


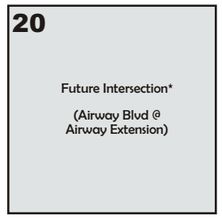


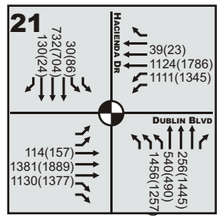


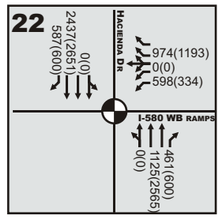


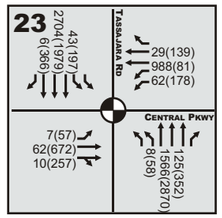


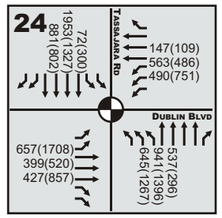


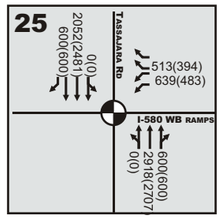


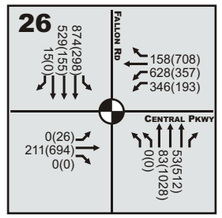


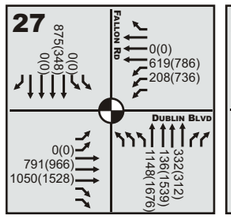


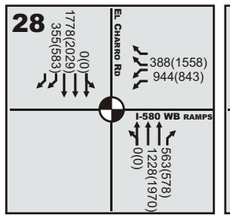


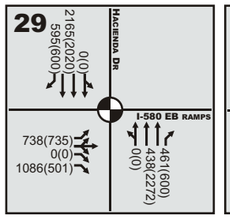


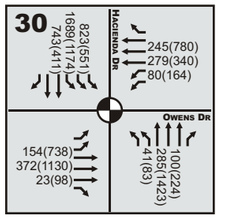


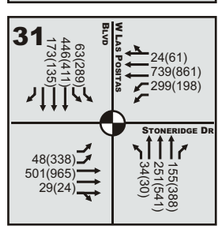


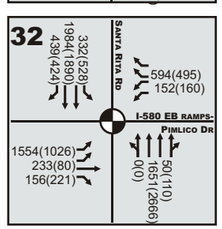


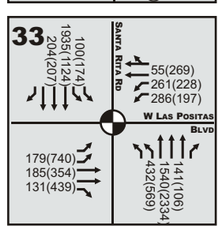


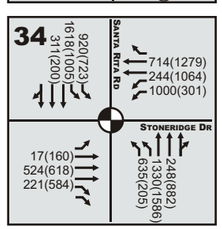


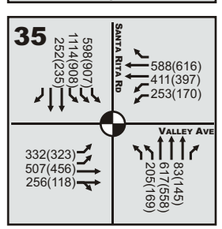


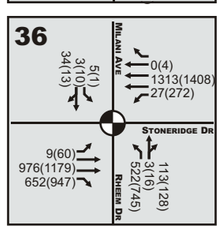


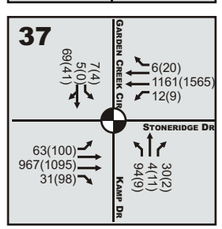


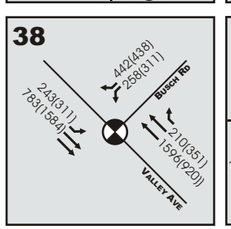


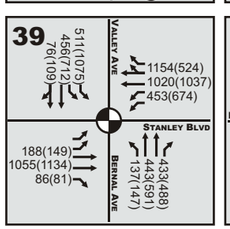


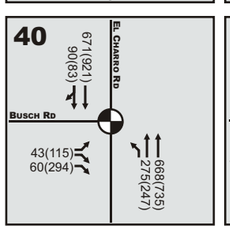


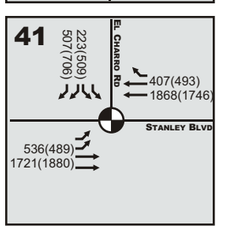


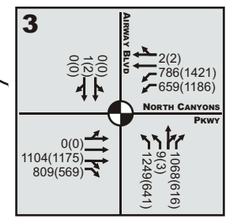


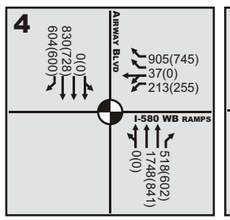


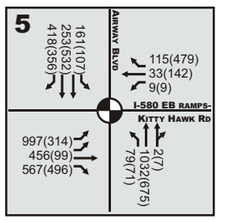


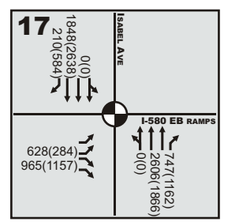


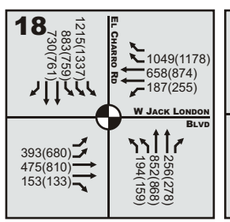


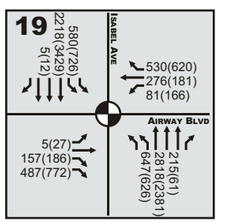


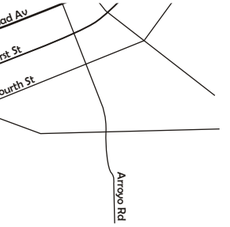


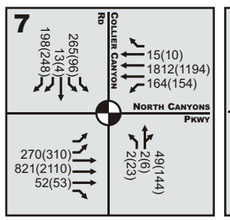


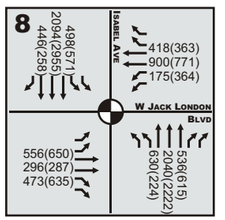


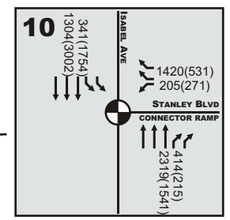


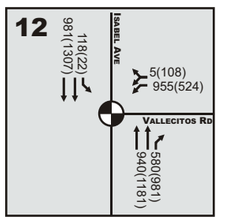












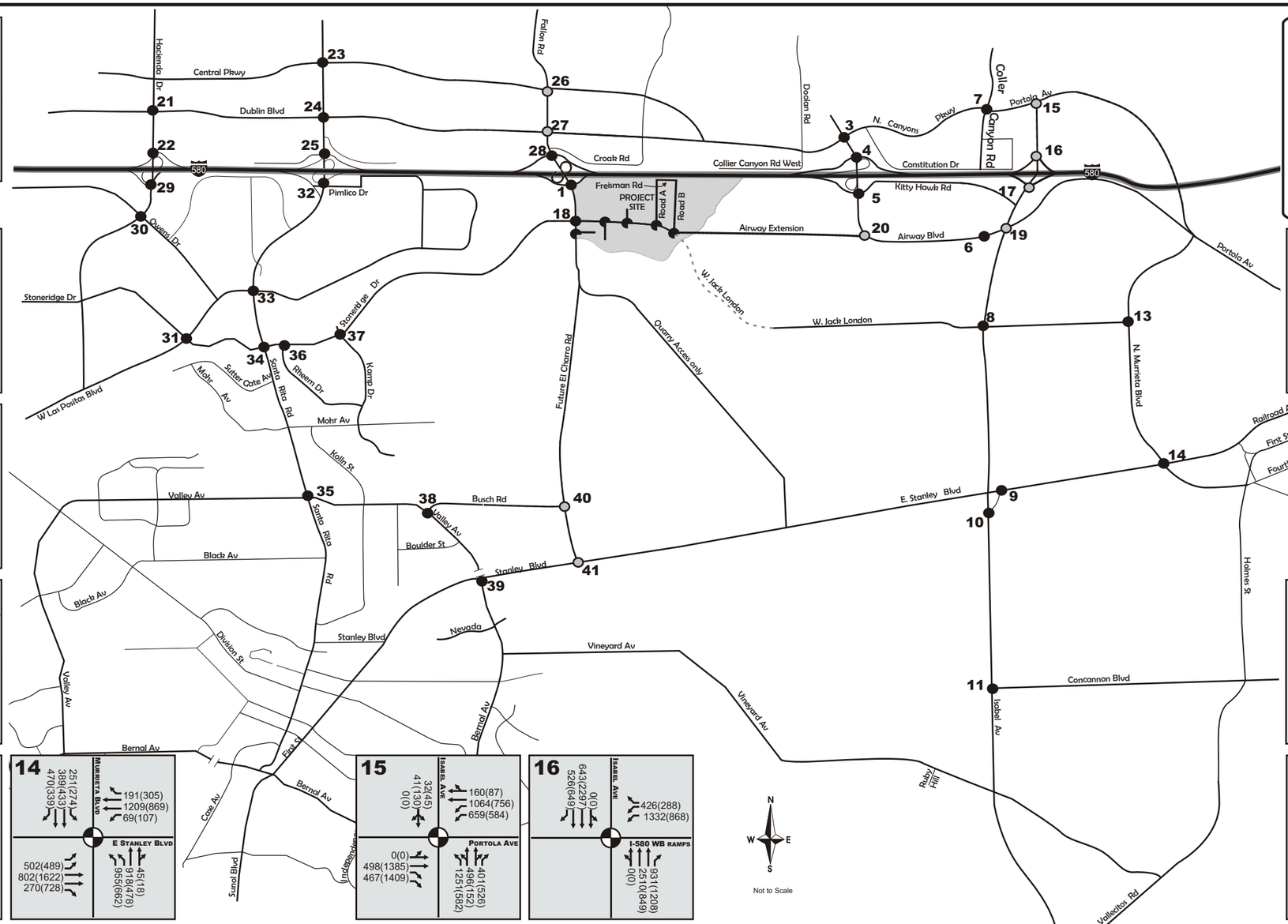
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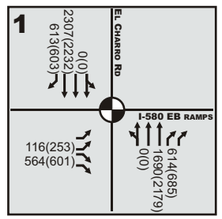
Fig E-10 2030 Cumulative+Full Project + Airway Blvd. Alignment

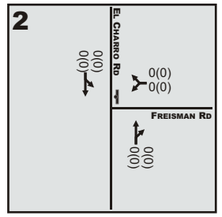
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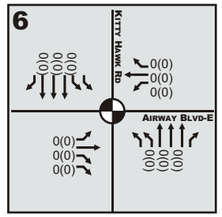
Dowling Associates, Inc.

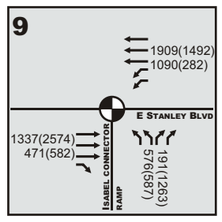
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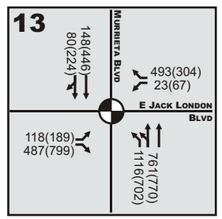


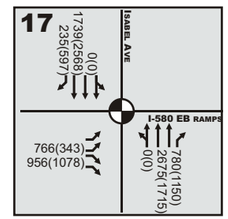


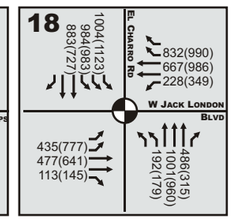


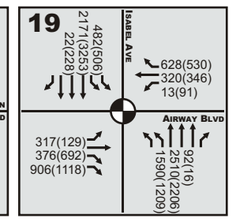


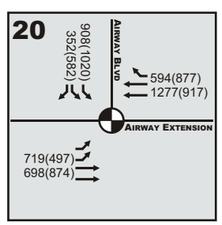


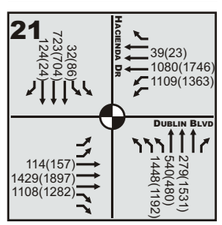


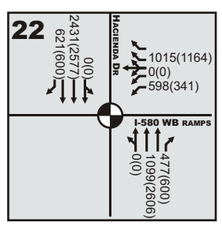


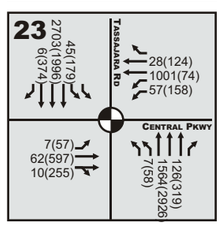


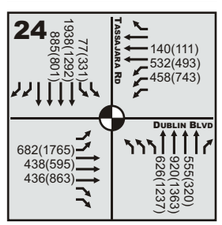


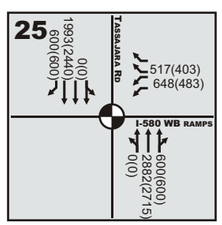


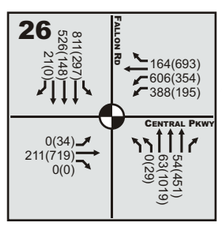


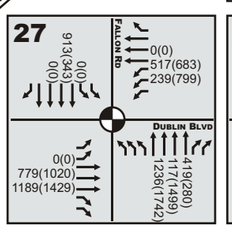


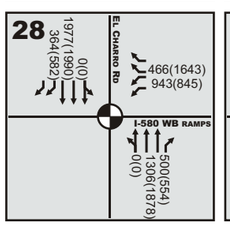


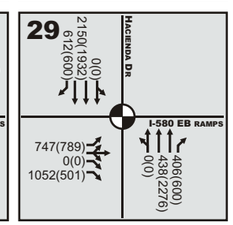


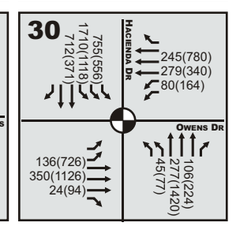


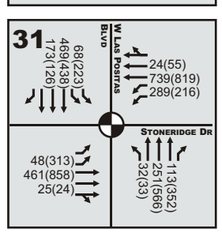


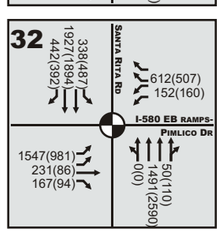


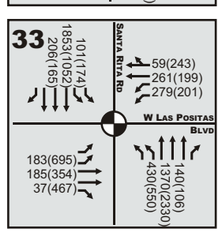


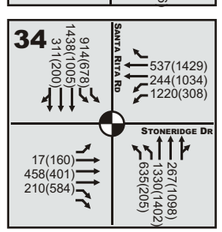


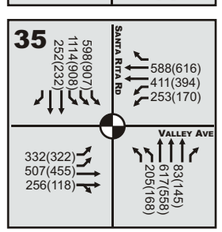


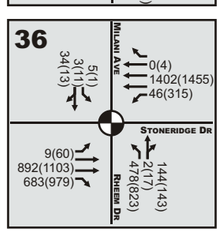


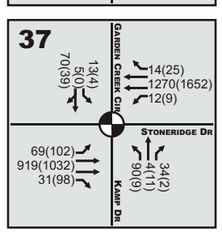


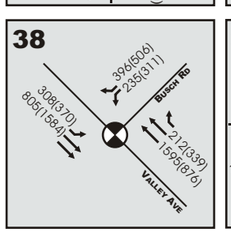


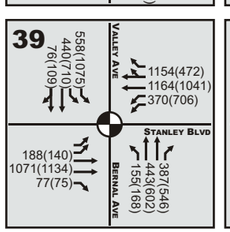


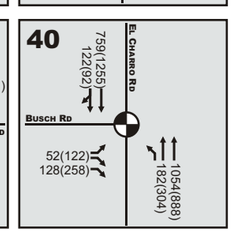


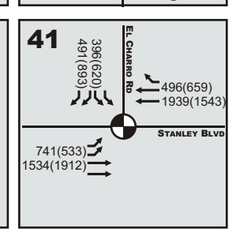




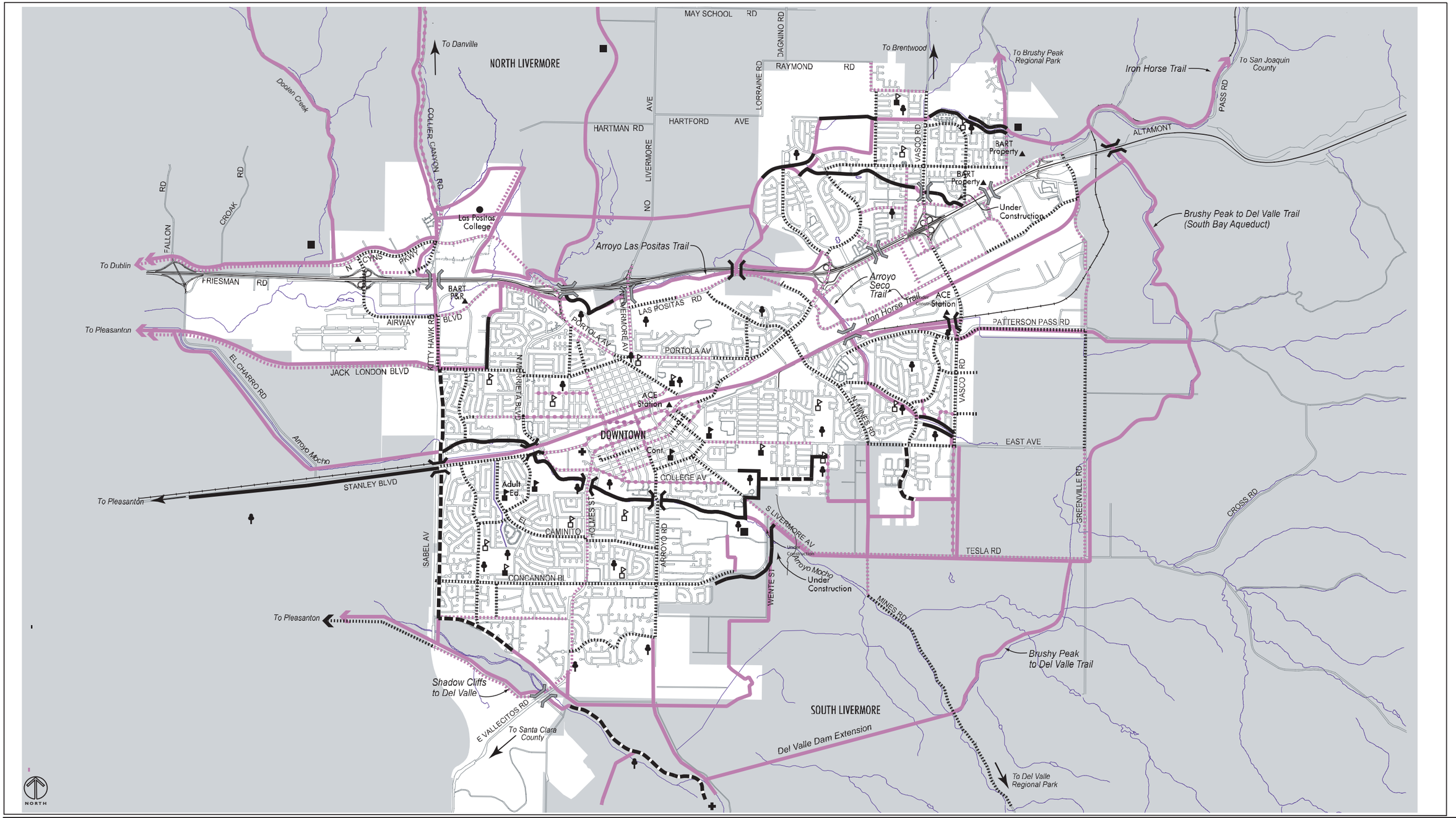








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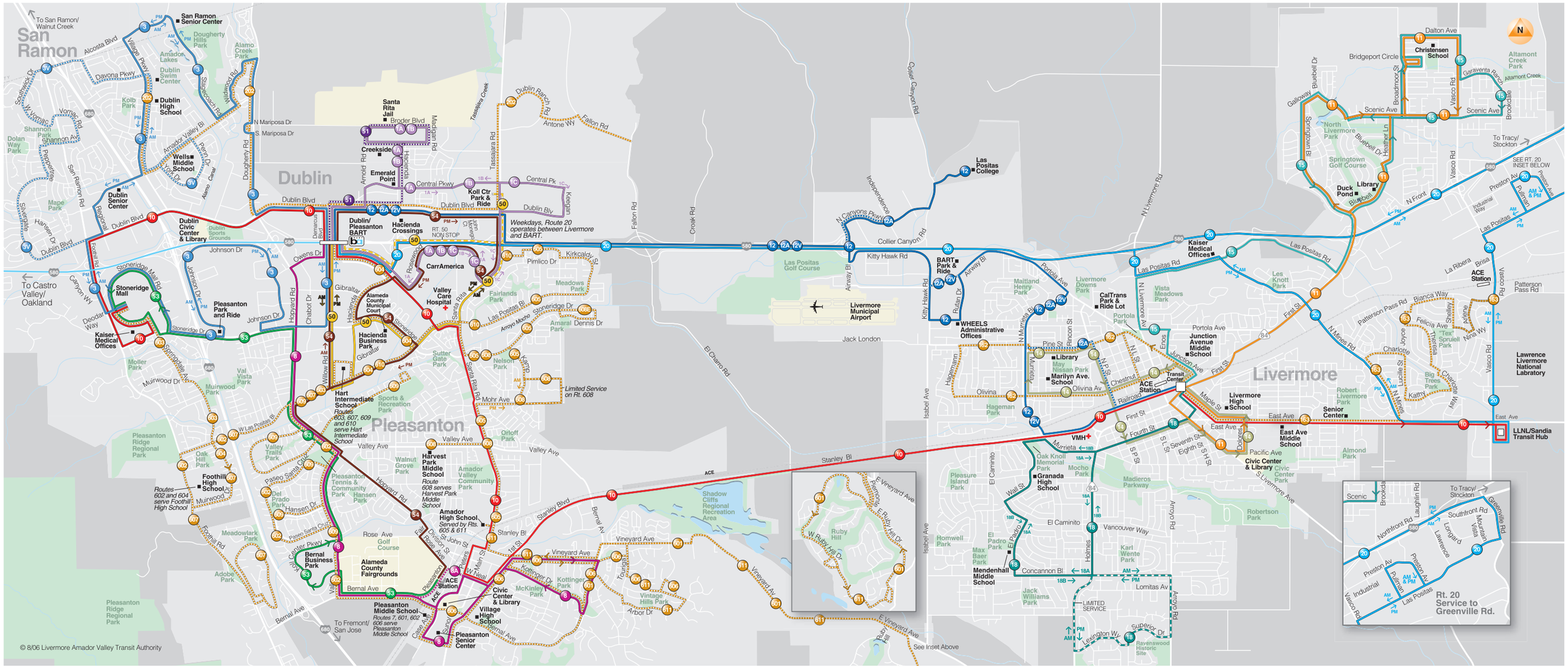


- Existing Multi-Use Trails
- Existing Bike Lanes
- Existing Multi-Use Trails with Equestrian Component
- Existing Over/Undercrossing
- Proposed Over/Undercrossing
- Proposed Bike Lanes
- Proposed Trails
- Proposed Bike Routes
- Staging Area
- Elementary Schools
- Middle Schools
- High Schools
- Transportation Centers
- Hospitals
- Parks
- Area Outside City Limits

FIGURE E-11

PROPOSED BIKEWAYS AND TRAILS NETWORK

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06137.06.003 El Charro Specific Plan EIR (01-07)

Jones & Stokes

Figure E-12
LAVTA Transit Routes

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Appendix E-2

Traffic Analysis Data—Assessment of Traffic Safety Impacts

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Assessment of Traffic Safety Impacts
El Charro Road Specific Plan

Prepared for:
City of Livermore, California

December 18, 2006

Prepared by:

DKS Associates
TRANSPORTATION SOLUTIONS
1000 Broadway, Suite 450
Oakland, CA 94607-4099

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1.0 EXECUTIVE SUMMARY

The City of Livermore has retained DKS Associates to assess the impact of the proposed El Charro Specific Plan on the existing and future quarry traffic that uses El Charro as a primary means of access for the existing quarries that operate and serve the region.

This evaluation reviewed the impact of the Specific Plan on traffic safety as the Plan will change traffic circulation and volume of traffic in the area serving the vehicles that use the quarries.

El Charro Road can be safely realigned with Freisman Road relocated, and Jack London Boulevard and Stoneridge Drive extended to El Charro Road, such that there is negligible impact to traffic safety. This report reviews the geometry of the proposed improvements from the ramp ends of I-580 on the north to the future intersection of the quarry access road and El Charro Road on the south. The three year traffic accident data reflects that the accident frequency of the study area is very low, approximately one accident per year.

The proposed alignment of El Charro Road minimizes the lane changing activity for the quarry trucks. The volume of the truck traffic will not adversely affect traffic safety for the new intersection of El Charro Road and Jack London Boulevard.

Safety lighting at the intersection can be designed to meet standards. Lane widths are appropriate for truck traffic.

The project provides for adequate curb radii at intersections to allow for large wheelbase vehicles to make turns within travel lanes.

The study also determines that there is adequate sight distance for any of the potential conflicting travel movements along El Charro between the quarry traffic and the other vehicular traffic.

Generally the geometry of the left turn pockets are adequate to accommodate the design volumes of the turning movements. There is adequate left turn storage volume for the southbound El Charro Road traffic heading to eastbound Jack London Boulevard.

The proposed project will certainly change the operating characteristics of the area with the introduction of new vehicles to the area. However the careful planning of the lane assignments and alignment results in a traffic condition that meets good design practice

Another recommendation is to have a warrant study initiated for a new traffic signal to be located at the intersection of El Charro Road and the quarry access road. A traffic signal is recommended at a new intersection south of the Arroyo Los Positas at the time that El Charro Road is extended to Stanley Boulevard.

The proposed right out driveway that will serve the Johnson-Himsl property should be located as far south as feasible.

2.0 OBJECTIVES

2.1 Purpose

The purpose of the report is to assess whether the improvements as proposed in the El Charro Road Specific Plan pose a safety hazard at the potential conflicts for the existing and projected quarry based activity in light of the proposed specific plan modifications identified. The assessment also makes recommendations for improvements to the plans identified in the Specific Plan.

Large wheelbase construction material trucks use El Charro Road as the primary means of access between the quarry pits of Vulcan Material Company and construction projects in the region. El Charro Road is the only direct access to I-580 that serves the existing quarries. Quarry activity is anticipated to be in operation for the foreseeable future. Existing traffic volumes on El Charro Road are very low, since it primarily provides access to the quarries and ranch activities.

The extension of Jack London Boulevard to El Charro Road will provide interconnecting access to the El Charro Road and I-580 interchange for vehicles coming from Livermore and seeking access to I-580 westbound in the AM peak hour. A corresponding reverse flow is anticipated in the PM peak hour. Development identified in the specific plan for El Charro would also increase the traffic activity on El Charro Road and Jack London Boulevard. Therefore the analysis evaluated the change in traffic circulation pattern, evaluated the geometric design of the proposed El Charro Road and evaluated the proposed intersections.

2.2 Objectives

The objectives of this study were to do the following:

To determine whether the project would substantially increase hazards due to the design features for the proposed modifications to El Charro Road and its intersections between the quarry access and I-580.

To determine whether the project would significantly increase the severity or number of accidents.

2.3 Study Methodology and Process

To assess whether the project would substantially increase hazards due to the design features of the project, an analysis was performed based upon the existing and projected traffic volumes identified with the circulation changes and the new development identified in the Specific Plan. A draft traffic analysis was performed by Dowling Associates dated September 2006 which took into consideration the near term baseline conditions (2008), the long term growth (2030) and the proposed traffic for the land uses identified in the Specific Plan.

This assessment included evaluation of the queue buildup at the signalized intersection of El Charro Road and Jack London Boulevard, and the directional movement of traffic at all intersections including proposed driveways on El Charro Road. The assessment included evaluation of safe stopping distances for approaches to stop controlled intersections, lane configuration at intersections as well as links from the quarry access road along El Charro Road and from the I-580 ramps. The geometry on El Charro Road was reviewed in relation to design requirements for the anticipated design speed of 45 miles per hour as recommended by the City of Livermore. Lane drops and merges were evaluated in relation to AASHTO requirements. The review of the intersection traffic control was limited to the unsignalized intersection of quarry access road and the El Charro Road segment that extends to Stanley Boulevard, and the signalized intersection of El Charro Road and Jack London Boulevard. Queue buildup at left turn pockets was assessed using the Fifth Edition Caltrans Design Manual for left turn pockets in Chapter 400.

The accident analysis was based upon California Highway Patrol's Statewide Integrated Traffic Records System (CHP SWITRS) accident data for the past three years, as furnished by Alameda County.

3.0 EXISTING CONDITIONS

3.1 Roadway Network

El Charro Road is a two lane local road located in the western portion of Livermore, forming a boundary between the City of Livermore and the City of Pleasanton. The roadway primarily serves as access to quarries to the south and interconnects with Fallon Road north of I-580. El Charro Road is a private roadway partially owned by Vulcan Material Company that provides access to the existing quarries. The public portion of El Charro Road begins at Freisman Road and extends north. The south end of El Charro Road terminates at Stanley Boulevard. Barriers are erected along this route to preclude cut through traffic from Stanley Boulevard to I-580.

The quarries that have rights to operate and use El Charro Road are the Vulcan Material Company (VMC), CalMat Division, RMC ReadyMix and Kaiser Cement (currently Hanson Aggregates). There is a ranch that also accesses El Charro Road.

The El Charro Specific Plan area consists of lands within Livermore encompassing El Charro Road. The proposal includes extension of El Charro Road as a public roadway from North of the Arroyo Los Positas to Fallon Road. Two options are being studied for the extension of Jack London Boulevard. One option extends Jack London Boulevard from the existing terminus near Las Positas Golf Course to El Charro Road. The new intersection is proposed to be located south of the existing intersection with Freisman Road. The other option is to have a new connector roadway Airway Extension to extend to the specific plan area and tie into a new segment of Jack London Boulevard that would intersect El Charro Road in the same location as the previously described option.

Development associated with the specific plan includes commercial development encompassing an area of several hundred acres bounded on the north by I-580 and bounded on the west by El Charro Road.

Both options include the removal of the intersection of Freisman Road with El Charro Road and the addition of a new connection with Jack London Boulevard. East of the Specific Plan area are the Livermore Municipal Airport and Las Positas Golf Course. West and North of the area are new development including Staples Ranch development and other residential facilities. South of the area is Vulcan Material CalMat division (VMC).

This study will evaluate three conditions:

1. differences between existing conditions and the construction of El Charro Road and Jack London Boulevard as a tee intersection with proposed development on the eastern side of El Charro Road including the Himsl property that lies southeast of the intersection;
2. additional impacts resulting from the development of the Staples project west of El Charro Road turning the Jack London El Charro Road into a four leg intersection; and
3. build-out of the specific plan with background growth projected to 2030.

El Charro Road is a two lane paved roadway with 25 feet wide lanes and paved shoulder with various width. Existing pavement markings divide the northbound and southbound traffic. Speed limit is not posted. The existing westbound ramps and eastbound off-ramp connecting El Charro Road and I-580 are one-lane ramps; the existing eastbound on-ramp is a two-lane ramp. These ramps form a diamond shape interchange that extends approximately half of a mile along I-580.

Freisman Road is a two lane rural roadway that acts as a frontage road to I-580. It extends from El Charro Road easterly to a dead end near the Las Positas Golf Course.

3.2 Operating Conditions

According to a report prepared in 2000 by TJKM*, the quarry related traffic count from all operations was about 3200 vehicles per day. About 1/3rd of the trucks were coming from the VMC operation around 1/3rd from the RMC Ready Mix Plant, and 1/3rd from Kaiser Cement Plant.

Since the TJKM study was prepared the Kaiser Sand and Gravel processing plant has ceased operation and been sold to Hanson Aggregate. The Kaiser site is currently occupied by office buildings and traffic no longer accesses I-580 through Busch Road and El Charro Road.

RMC Lonestar processing plant is located on the south side of Stanley Blvd. During the TJKM study, trucks from RMC processing plant have used Busch Rd. and El Charro Rd. as their regular truck route to access I-580. Busch Rd. is a private road currently belongs to Hanson Aggregate. According to the representative from Hanson Aggregate, the City of Pleasanton had recently filed a lawsuit against RMC to prohibit the access of RMC trucks to Busch Rd. During DKS fieldwork in June 2006, DKS staff observed that there were no truck activities on Busch Road.

The following table presents the traffic counts reported by TJKM:[1]

	Traffic trips (inbound and outbound combined)
Total daily traffic count from TJKM Report	3,219
Additional VMC daily traffic volume due to expansion	1,008
Total daily traffic volume with expansion of VMC plant	4227
Reduction in daily traffic volume with closure of Kaiser plant and rerouting of RMC plant's traffic	-2,016
Net Traffic using El Charro Road	2210

* Cal Mat Aggregate Processing Plant Traffic Study for Modernization of Pleasanton, June 7, 2000 by TJKM.

Based on field observation performed by DKS on June 30, 2006, the daily trip volume is 2,447 trips per day. The result of this observation is reasonable compared to the previous table that was based upon the TJKM Report of 2000. The peak hour traffic for the truck traffic is indicated in the following table.

	Traffic Volume
VMC daily traffic count in June 2006	2,447
VMC AM peak hour count in 2006	116 in, 121 out total 232
VMC PM peak hour count in 2006	137 in, 124 out total 261

Source: DKS manual traffic counts June 2006.

The following table consists of existing traffic volumes provided by Dowling Associates. The traffic volume does not differentiate between truck traffic and non-truck traffic. Total daily traffic counts were not provided with the Dowling report.

	Traffic Volume
VMC AM peak hour count in 2006	100 in, 102 out total 202
VMC PM peak hour count in 2006	121 in, 74 out total 195

Source: Dowling Traffic Study September 2006.

There are currently no facilities for bicycles or pedestrians.

El Charro Road does not have bus stops provided by Livermore Amador Valley Transit Authority (LAVTA). The nearest bus stop to the east is located at I-580 and Airway Boulevard. The nearest bus stop to the west is located at I-580 and Santa Rita Road / Tassajara Road.

Future bus routes are planned to accommodate the increase of developments around or within the project site.

There is no planned bike trail along El Charro Road; however, a Class I multi-use trail is planned to connect West Jack London Boulevard and Pleasanton bikeways along Stoneridge Drive, crossing El Charro Road.

4.0 TRAFFIC SAFETY IMPACTS

4.1 Geometric Assessment

The following is an overview of the traffic safety assessment of the proposed layout of El Charro Road.

Initial Improvements Jack London Boulevard and El Charro Road Tee Intersection

Description of Modification
The proposed modifications to El Charro Road include the following: The extension of two through lanes southbound on El Charro Road between the I-580 eastbound interchange ramps and just south of the new intersection with Jack London Boulevard. Three dedicated left turn lanes are proposed each with a left turn bay of approximately 600-feet.

Northbound El Charro will become a public roadway along the frontage of the Himsl property. The single lane northbound will expand to four lanes of approach at the Jack London Boulevard Intersection. There will be room for a future left turn pocket, two through lanes and a dedicated right turn lane. The outside through lane directs traffic into the middle lane on the departure side of the intersection. Jack London Boulevard for the initial stage will be a tee intersection with three approach lanes (two dedicated right turn lanes and one dedicated left turn lane. There are three receiving lanes eastbound.

This design also provides for two dedicated left turn lanes and two dedicated right turn lanes for the Interstate 580 eastbound off ramp.

At the eastbound I-580 interchange on ramp the lane configuration consists of one dedicated through lane, a shared through-right turn lane and a dedicated right turn lane.

Quarry access is provided by separate access lanes that merge approximately a quarter mile south of the Jack London Boulevard intersection. Between the merge and the intersection is a proposed U-turn for southbound vehicles to travel northbound on El Charro. The U-turn is stop controlled before merging with the single northbound travel lane. Also provided is a right out only access from the Himsl property to the single northbound lane on El Charro Road.

The merge is accomplished in the following fashion. The eastern most access aligns with the northbound travel lanes of El Charro Road. The western most access forms a tee intersection with the other quarry access. Stop control is provided for the northbound quarry vehicles coming from the western most access before that travel lane crosses the southbound entrance to the eastern most quarry access. Quarry access to the western most access is not restricted.

Northbound El Charro will become a public roadway along the frontage of the Himsl property. The single lane northbound will expand to four lanes of approach at the Jack London Boulevard Intersection. There will be room for a future left turn pocket, two through lanes and a dedicated right turn lane. The outside through lane directs traffic into the middle lane on the departure side

of the intersection. Jack London Boulevard for the initial stage will be a tee intersection with three approach lanes (two dedicated right turn lanes and one dedicated left turn lane. There are three receiving lanes eastbound.

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Assessment

Proposed lane widths are adequate for mixed flow with large wheelbase trucks. The design indicates two-12 feet through lanes in the southbound direction and two-12 feet through lanes with one-12 feet right turn only lane in the northbound direction.

A review of all turning movements indicates that the geometry of the lanes and curves are adequate to meet design speed as well as circulation patterns for large wheelbase vehicles. The northbound horizontal curve along El Charro Road between Jack London Boulevard and the I-580 intersection appears to meet the minimum radius requirements for an urban road with a design speed of 45mph. According to the AASHTO Geometric Design of Highways and Streets (2004) the minimum radius for a low speed urban street with a design speed of 45 mph is 1039 feet.

A review of the proposed grades indicated that there is ample room for providing adequate sight distance using vertical curves that satisfy Caltrans standards.

El Charro Road will be modified from the existing bridge structure over I-580 south. Freisman Road will be relocated such that it will no longer intersect El Charro Road. Its new alignment will result in a new intersection with the extension of Jack London Boulevard. Freisman Road was not identified as a routine path of travel for the quarry traffic. This relocation is seen as a positive step with respect to overall traffic circulation, given the additional traffic that will be added to El Charro Road by the extension of Jack London Boulevard and the connection of El Charro Road with Stanley Boulevard.

The proposed alignment for El Charro Road results in the reasonable transition of lanes between the previous segment (two lanes in each direction) to the lane geometry at the northerly approach of the El Charro Road and Jack London Boulevard intersection. There will be two through lanes in each direction, a northbound dedicated right turn lane, a reservation for a southbound dedicated right turn lane and three southbound dedicated left turn lanes.

The proposed intersection at El Charro Road and Jack London Boulevard is a T - intersection that will have a new traffic signal. Sight distance is adequate for all approaches to this intersection. All through lanes are 12-feet and the turn lanes are 12-feet wide. For northbound El Charro there are three proposed lanes of approach, which include two dedicated through lanes and one dedicated right turn lane onto eastbound Jack London Boulevard. On the north side of the intersection there are three lanes.

For southbound El Charro Road there will be two receiving lanes south of Jack London Boulevard. The curb radius for all curbs at each intersection is approximately 60 feet, which meets the design standards for large wheel based trucks.

The merger of the two quarry access roads is accomplished reasonably by restricting the northbound access to a stop condition at the confluence with the easternmost access. The peak hour volume of 100 vehicles sharing this intersection will not create problems for the operators of the vehicles. Sight distance is adequate at this intersection.

The U-turn design is proper for merging vehicles. The demand from the quarry trucks and the exiting vehicles from the Himsl project will be less than 600 vehicles – peak hour per the Dowling Traffic study. Therefore the periodic u-turn vehicle will easily be accommodated.

In summary, there are no major issues present with the tee intersection design.

Improvements to Jack London Boulevard and El Charro Road with Staples Development on the west side of El Charro Road.

Description of Modification

With the Staples Ranch project, it is presumed that a four-leg intersection would be developed to serve the Staples project located on the westerly side of El Charro Road. The changes will include the addition of northbound left turn movements and the addition of two through lanes for westbound Jack London Boulevard. The southbound El Charro Road approach will also receive a dedicated right turn lane.

Assessment

The additional conflicts of left turn movements at the intersection of El Charro Road and Jack London Boulevard intersection will be accommodated by the traffic signal operation. Protected left turns and separate signal cycles will provide for adequate protection for the additional vehicular conflict. No other impacts are anticipated as a result of the opening of the Staples facility.

Ultimate Improvements extension of El Charro Road to Stanley Boulevard and the extension of Stoneridge Drive to the intersection of Jack London Boulevard

Description of Modification

The proposed modifications to El Charro Road include the following: The extension of Stoneridge Drive to the intersection with two through lanes, three dedicated left turn lanes, and a dedicated right turn lane. The northbound approach of El Charro will be modified to have three through lanes, two dedicated left turn lanes and one dedicated right turn lane. The U-turn is eliminated. On the north side of the Jack London intersection, there are four lanes of travel. The lanes split near the eastbound interchange ramps, with two dedicated through lanes, and through right turn lane and a dedicated right turn lane. Interchange improvements are also envisioned to provide four lanes in each direction over the bridge separated by a raised barrier. The eastbound off ramp will have four lanes – two dedicated left and two dedicated right turn lanes.

Assessment

The ultimate configuration addresses the major intersections. Based upon the traffic study volumes, and graphics, it is assumed that the extension to Stanley Boulevard is incorporated into the plan. A future traffic analysis by the agency leading the extension is recommended. This is due to the fact that vehicular trips in excess of 300 vehicles per hour for any non-signalized restricted movement is likely to result in extensive delays and compromised traffic movements. Alignment of the roadway patterns will have to be addressed at that time as well. Consideration for a possible traffic signal at the quarry access may be required depending upon the horizontal geometry of the ultimate extension.

4.2 Queue Lengths

According to the traffic analysis performed by Dowling, cumulative conditions will greatly impact the future intersections of El Charro Road and West Jack London Boulevard. The future condition at this location will operate with a LOS of F or E using the Highway Capacity Manual (HCM). The queuing length for the southbound traffic on El Charro Road making the left turn onto Jack London Square Boulevard requires sufficient room to accommodate more than 50 cars per cycle during the AM peak hour. This requires approximately 500-feet of length per lane. The length provided for alternative B is approximately 550- feet per lane, which exceeds the length required to accommodate the vehicles per cycle during both the AM and PM peak hour periods therefore preventing congestion along El Charro Road.

4.3 Stopping Sight Distance

According to AASHTO Geometric Design of Highways and Streets (2004) the stopping sight distance for a street with a design speed of 45 mph is 360 feet. El Charro Road and the surrounding terrain are flat and there are no visible obstructions that will interfere with meeting the AASHTO requirement.

The following table indicates the proposed conflicts between opposing vehicles and sets forth the required and proposed sight distance.

Approach	Conflicting Approach	Sight Distance	Comment
NB El Charro Rd	I-580 Off Ramp	370 ft	Exceeds AASHTO requirements
SB El Charro Rd	I-580 Off Ramp	<500 ft	Exceeds AASHTO requirements
NB El Charro Rd*	Jack London Blvd	<500 ft	Exceeds AASHTO requirements
NB El Charro Rd	Johnson/Himsl Dwy	400 ft	Exceeds AASHTO requirements
NB El Charro Rd	Quarry Access Road	<500 ft	Exceeds AASHTO requirements
SB El Charro Rd	Quarry Access Road	<500 ft	Exceeds AASHTO requirements

*El Charro Rd./Jack London Blvd. is a signalized intersection. Safe stopping site distances normally do not apply at signalized intersections, but because a right turn movement from Jack London Blvd onto El Charro Rd. is permitted on a red signal, safe stopping distance is applied at this intersection.

4.4 Alternative Paths of Travel for Heavy Trucks

There are two alternative paths of travel for heavy trucks. Trucks will travel north and south along El Charro Road going to and from the quarry. The favored route for quarry bound traffic is to eliminate need for lane changing between the point where the quarry traffic leaves the quarry and where it arrives at the ramp ends for I-580. The proposed alignment for El Charro road accomplishes this.. Southbound El Charro does not require a lane change for quarry bound traffic. It is recommended that signage be added to the northbound access and for southbound access along El Charro Road.

4.5 Lane Width Assessment

El Charro Road has most through and turn lane widths of 12 feet. The outside lanes next to curb and gutter have thirteen-foot lane widths. The width of the lanes is sufficient for accommodating mixed flow vehicular traffic and meets Caltrans and AASHTO design guidelines for arterials.

4.6 Travel Speeds of Existing Roadways

The project area does not have posted speed limits on El Charro Road. However site observations indicate that the existing truck traffic operates at approximately 40 to 45 miles per hour. City has requested that the El Charro Road has a design speed of 45 mph.

4.7 Accident Analysis of Existing Conditions

The accident data was reviewed for type and severity of accidents. Accidents in the study area for El Charro between the quarry access and I-580 ramps have occurred approximately 1 per year.

According to the SWITRS, for the period from January 2002 until June 2004, El Charro Road in the vicinity of I-580 experienced three vehicle accidents. One accident involved a single vehicle running off the road and striking a fixed object on a cloudy day. Another accident included one vehicle sideswiping another under cloudy and dark conditions. The final accident involved a truck and an auto colliding in a broadside fashion on a clear day. Roadway conditions for all three accidents were dry.

Year	Type of Accident	Location	Time	Number of Accidents
January 2002 to December 2002	Hit Object*	El Charro/I-580	11:30 AM	1
January 2003 to December 2003	Sideswipe*	El Charro/I-580	8:20 PM	1
January 2004 to June 2004	Broadside*	El Charro/Freisman	7:15 AM	1

*All accidents involved were Property Damage Only (PDO).

We reviewed the proposed roadway geometry and intersection controls to assess whether the design as proposed may impact the frequency or severity of accidents. With the very low frequency of accidents under existing conditions, it can be stated that the volume of traffic to and from the quarry is low and the volume of traffic for other destinations is also low. See AM(PM) Existing Volumes and Geometries. The addition of vehicular traffic onto El Charro Road by an order of magnitude of ten fold over existing conditions will systematically increase the number of accidents. The introduction of additional lanes of conflict from four points of conflict to thirteen possible points of conflict will also increase the likelihood of accidents. Although accidents are not statistically predictable, they are a function of vehicle miles traveled. Assuming that the vehicle miles traveled are proportional to the number of vehicles using El Charro Road, the number of accidents can be assumed to increase proportionately to the increase in traffic volume.

Types of accidents will be different for the proposed project than from the existing conditions. Traffic signal installations are likely to cause rear end and side impact traffic accidents. Side impact collisions are caused by lack of driver attention or unsafe driving (running red light). Rear end collisions are caused by lack of driver attention. Merge lanes are likely to cause sideswipe and rear end collisions. Weave conditions may cause side impact collisions due to lack of driver attention.

This report has identified several recommendations that are important to mitigate the additional volume of traffic and the additional points of conflict. Even with the adoption of the recommendations the number of vehicular conflicts will be quantifiably 50 times the current amount. Therefore the number of accidents is likely to significantly increase over existing

conditions. The severity of the accidents is also likely to increase due to the fact that the current accident record is very low and that there have not been severe accidents reported in the three year period studied.

The severity of accidents is dependent on vehicle mix, speeds, and type of conflict (i.e. head on more sever than rear end etc). The Specific Plan will increase the percentage of cars from the current mix of 33% significantly. Peak hour vehicle speeds are likely to be lower due to traffic volume/capacity ratios being high and during non-peak hours due to added traffic control devices. The types of conflicts are expected to be of the less severe type given the addition of medians and traffic control devices and properly designed merge lanes.

Although the Specific Plan development increases the potential for accidents due to increased volumes and the potential for increased severity exists due to the change in vehicle mix (more cars mixed with same number of trucks), the proposed design which includes added traffic control devices, relocating the Freisman intersection away from the interchange, adequate queuing distances, medians, and improved safety lighting all work as reasonable precautionary measures to reduce the likelihood and severity of conflict. As a result the accident rate is expected to be similar to that of any other like facility.

5.0 RECOMMENDATIONS

Below is a listing of the recommendations made in this report:

Install safety lighting at each intersection that meets or exceeds Caltrans standard requirements for signalized intersections.

The stop condition at the Quarry Access Road and El Charro Road will function properly until traffic volumes from the western most quarry access exceeds three hundred peak hour vehicles. At that point a subsequent study should be made to determine whether improvements to the merge of the quarry access roads should be made.

When the ultimate configuration is to be constructed, conduct a signal warrant study for the intersection of El Charro Road and the access to the quarries. Test the traffic volumes for Warrant 2 Interruption of Continuous Traffic. If the warrants are met, install a new traffic signal at this location.