MENLO PARK EL CAMINO REAL AND DOWNTOWN SPECIFIC PLAN

Final Environmental Impact Report

Volume 1 of 2

Prepared for
City of Menlo Park, California

April 2012
(Certified June 5, 2012)

ESA

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LIST OF ACRONYMS AND ABBREVIATIONS USED IN THIS DOCUMENT

$\mu g/m^3$	micrograms per cubic meter
AADT	average annual daily traffic
AASHTO	American Association of State Highway and Transportation Officials
AB	Assembly Bill
ABAG	Association of Bay Area Governments
ACM	asbestos-containing material
ACO	Area Compliance Officer
ADT	average daily traffic
afy	acre feet per year
AGL	above ground level
API	Area(s) of Primary Importance
APS	Alternative Planning Strategy
ASHRAE	American Society of Heating, Refrigeration and Air-Conditioning Engineers
BAAQMD	Bay Area Air Quality Management District
Basin	San Francisco Bay Area Air Basin
BGM	BAAQMD GHG Model
BMP	best management practice
BRT	Bus Rapid Transit
BTEX	benzene, toluene, ethylbenzene, xylenes
C	Conservation
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
Cal EPA	California Environmental Protection Agency
Caltrans	California Department of Transportation
Cal Water	California Water Service Company
CAP	Clean Air Plan

CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CAT	Climate Action Team
CBC	California Building Code
CBD	Central Business District
CBTP	Community-Based Transportation Plan
C/CAG	City/County Association of Governments
CCAR	California Climate Action Registry
CCR	California Code of Regulations
CDC	Centers for Disease Control and Prevention
CDFG	California Department of Fish and Game
CDHS	California Department of Health Services
CDP	Conditional Development Permit
CEDA	Community and Economic Development Agency
CERES	California Environmental Resources Evaluation System
CESA	California Endangered Species Act
CEQA	California Environmental Quality Act and Guidelines
CFR	Code of Federal Regulations
CGS	California Geological Survey
CHHSL	California Human Health Screening Level
CHP	California Highway Patrol
CIP	Capital Improvement Fund
CIWMB	California Integrated Waste Management Board
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CH_4	methane
CMA	Congestion Management Agency
CMP	Congestion Management Program
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalents
CPUC	California Public Utilities Commission
CRLF	California red-legged frog
CUPA	Certified Unified Program Agency

CWA	Clean Water Act
dB	decibel(s)
dBA	A-weighted decibel(s)
dbh	diameter at breast height
DOF	Department of Finance
DOT	Department of Transportation
DPM	diesel particulate matter
DPR	Department of Parks and Recreation
DSE	District Structural Engineer
DSOD	Division of Safety of Dams
DTSC	Department of Toxic Substances Control
DWR	Department of Water Resources
ECR	El Camino Real
EDD	Employment Development Department
EIR	Environmental Impact Report
EPA	Environmental Protection Agency
ESA	Endangered Species Act
ESL	Environmental Screening Level
ESU	Evolutionary Significant Units
FAR	floor area ratio
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Map
g	percentage of the equivalent acceleration of gravity (980 cm/sec^2)
GBC	Green Building Council
GHG	greenhouse gas
GIS	Geographical Information System
gpd	gallon(s) per day
gpm	gallon(s) per minute
GPP	Groundwater Protection Program
GWh	gigawatt hour
GWP	global warming potential
HCD	Housing and Community Development

HCM	*Highway Capacity Manual*
HFC	hydrofluorocarbon
HMBP	Hazardous Materials Business Plan
HMMP	Hazardous Materials Management Plan and Inventory
HOV	high occupancy vehicle
HRSA	Health Risk Screening Analysis
HSR	High Speed Rail
HST	high speed train
HVAC	heating, ventilating, and air conditioning
Hz	hertz
IBC	International Building Code
IPCC	Intergovernmental Panel on Climate Change
ISTEA	Intermodal Surface Transportation Efficiency Act
ITE	Institute of Transportation Engineers
JPA	Joint Powers Authority
kVA	kilovolt ampere(s)
kW	kilowatt(s)
LBD	lead-based paint
LEED	Leadership in Energy and Environmental Design
LOS	level of service
LUFT	leaking underground fuel tank
LUST	leaking underground storage tank
M	magnitude
MEI	maximally exposed individual
MERV	Minimum Efficiency Reporting Value
mgd	million gallons per day
MM	Modified Mercalli
MMRP	Mitigation Monitoring and Reporting Program
$MMTCO_2e$	million metric tons of CO_2e
MOB	medical office building
MPO	Metropolitan Planning Organization
MPH	mile(s) per hour
MRP	Municipal Regional Permit
MRZ	Mineral Resource Zone

MSDS	Materials Safety Data Sheets
msf	million square feet
MSL	mean sea level
MTBE	methyl-tertbutylether
MTC	Metropolitan Transportation Commission
MTS	Metropolitan Transportation System
MUTCD	Manual on Uniform Traffic Control Devices
Mw	moment magnitude
N	no impact
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
ND	Neighborhood Development
NHTSA	National Highway Traffic Safety Administration
NIH	National Institutes of Health
NMFS	National Marine Fisheries Service
N_2O	nitrous oxide
NO	nitric oxide
NO_2	nitrogen dioxide
NOI	Notice of Intent
NOP	Notice of Preparation
NOx	nitrogen oxides
NPC	Nonstructural Performance Category
NPDES	National Pollution Discharge Elimination System
NPPA	Native Plant Protection Act
NRHP	National Register of Historic Places
NWIC	Northwest Information Center
NWP	Nationwide Permit
O_3	ozone
OES	Office of Emergency Services
OHP	Office of Historic Preservation
OPR	Office of Planning and Research
OS	Open Space
OSCAR	Open Space, Conservation and Recreation Element
OSHA	Occupational Safety and Health Administration

PB	lead
pc/mi/ln	passenger car per mile per lane
PCB	polychlorinated biphenyl
PCE	tetrachloroethene
PFC	perfluorocarbon
PGA	peak ground acceleration
PM	particulate matter
PM2.5	particulate matter 2.5 micrometers or less in diameter
PM10	particulate matter 10 micrometers or less in diameter
ppm	parts per million
PPV	peak particle velocity
PRC	Public Resources Code
PS	potentially significant
R&D	Research and Development
RCRA	Resource Conservation and Recovery Act
REL	reference exposure level
RMP	Risk Management Program
RMS	root mean square
ROG	reactive organic gases
RWQCB	Regional Water Quality Control Board
SAFETEA-LU	Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users
SBSA	South Bayside System Authority
SCS	Sustainable Communities Strategy
SDI	Sustainable Development Initiative
SF_6	sulfur hexafluoride
SIP	State Implementation Plan
SLIC	Spills, Leaks, Investigations, and Cleanup Database
SMARA	Surface Mining and Reclamation Act
SMCEH	San Mateo County Environmental Health
SMCWPPP	San Mateo Countywide Water Pollution Prevention Program
SO_2	sulfur dioxide
SPC	Structural Performance Category
SPCC	Spill Prevention, Control and Countermeasure
SQMP	Stormwater Quality Management Plan

SR	State Route
STC	Sound Transmission Class
STIP	State Transportation Improvement Program
SVP	Society of Vertebrate Paleontology
SWITRS	Statewide Integrated Traffic Record System
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	toxic air contaminant
TAZ	Traffic Analysis Zones
TCM	transportation control measures
TDM	Transportation Demand Management
TIF	Traffic Impact Fee
TIS	Traffic Impact Study
TMDL	Total Maximum Daily Load
TSCA	Toxic Substances Control Act
USACE	U.S. Army Corps of Engineers
U.S.C.	U.S. Code
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UST	underground storage tank
VA	Veterans Administration
v/c	volume to capacity
VdB	decibel notation
VMT	vehicle miles traveled
VOC	volatile organic compound
vph	vehicles per hour
WBSD	West Bay Sanitary District
WBWG	Western Bat Working Group
WDR	Water Discharge Requirements
WSMP	Water Supply Management Program

CHAPTER 1
Introduction

The City of Menlo Park has developed the Menlo Park El Camino Real/Downtown Specific Plan ("Specific Plan" or "Plan") to establish a framework for private and public improvements in the Plan area for the next 30 years. The Specific Plan addresses approximately 130 acres and focuses on the character and density of private infill development, the character and extent of enhanced public spaces, and circulation and connectivity improvements. The primary goal of the Specific Plan is to "enhance the community life, character and vitality through mixed use infill projects sensitive to the small-town character of Menlo Park, an expanded public realm, and improved connections across El Camino Real." The Specific Plan includes objectives, policies, development standards, and design guidelines intended to guide new private development and public space and transportation improvements in the Specific Plan area over the next 30 years. The Plan builds upon the El Camino Real/Downtown Vision Plan that was unanimously accepted by the Menlo Park City Council on July 15, 2008.

The Specific Plan does not propose specific private developments, but establishes a maximum development capacity of 474,000 square feet of non-residential development, inclusive of retail, hotel, and commercial development, and 680 new residential units, resulting in an estimated 1,357 new jobs[1] and 1,537 new residents. Chapter 3, *Project Description,* of this document presents a detailed description of the Specific Plan and the Plan area.

1.1 Environmental Review

The City of Menlo Park (City) is the Lead Agency responsible for administering the environmental review for the Menlo Park El Camino Real/Downtown Specific Plan. For purposes of the environmental review, the Specific Plan is referenced throughout the document as the "Proposed Project". The Proposed Project should not be confused with the more common use of the term "project" to refer to a specific development proposal. As noted above, the Specific Plan does not propose specific private developments. The California Department of Transportation (Caltrans) would be consulted for approval of any sidewalk or street improvements to El Camino Real, a State Route. The City decided to prepare an Environmental Impact Report (EIR) for the Specific Plan pursuant to state and local guidelines for implementing the California Environmental Quality Act (CEQA) and the State CEQA Guidelines (together "CEQA"). The City elected not to prepare an Initial Study Checklist in favor of preparing this program-level EIR as permitted by

[1] The Draft Menlo Park El Camino Real/Downtown Specific Plan contained an error in the number of new jobs which was corrected in the final Specific Plan. The correct number of 1,357 new jobs has been used throughout the environmental evaluation contained in this EIR.

Section 15060(d) of the CEQA Guidelines. This EIR analyzes the potential environmental effects of the project under all environmental topics identified in the CEQA Guidelines.

1.2 Purpose of this EIR

This EIR is intended to provide the information and objective environmental analysis necessary to assist the Lead Agency, the City of Menlo Park, in considering all the approvals and actions necessary to adopt the Specific Plan. It is prepared to aid and streamline the review and decision-making process by disclosing the potential for significant environmental impacts to occur with implementation of the Specific Plan.

The CEQA Guidelines help define the purpose of the EIR:

- **Informational Document.** An EIR is an informational document, which will inform public agency decision-makers, and the public generally of the significant environmental effect(s) of a project, identify possible ways to minimize the significant effects, and describe reasonable alternatives to the project. The public agency shall consider the information in the EIR along with other information, which may be presented to the agency (CEQA Guidelines Section 15121(a)).

- **Standards for Adequacy of an EIR.** An EIR should be prepared with a sufficient degree of analysis to provide decision-makers with information that enables them to make a decision that intelligently takes account of environmental consequences. An evaluation of the environmental effects of a proposed project need not be exhaustive, but the sufficiency of an EIR is to be reviewed in light of what is reasonably feasible. Disagreement among experts does not make an EIR inadequate, but the EIR should summarize the main points of disagreement among the experts. The courts have looked not for perfection but for adequacy, completeness, and a good faith effort at full disclosure (CEQA Guidelines Section 15151).

EIR Analysis Overview

This Program EIR presents a programmatic analysis of the Specific Plan. Specifically, it evaluates the physical and land use changes that could occur with adoption of the Specific Plan (the goals, objectives, development standards, design guidelines therein), and maximum potential development that could occur consistent with the Specific Plan. Further, as CEQA specifies, a Program EIR is appropriate for the Specific Plan, under which there will be future development proposals that are 1) related geographically, 2) logical parts in a chain of contemplated actions, 3) connected as part of a continuing program, and 4) carried out under the same authorizing stature or regulatory authority and have similar environmental impacts that can be mitigated in similar ways (CEQA Guidelines Section 15168). The degree of specificity in this EIR corresponds to the degree of specificity in the Specific Plan, consistent with CEQA Guidelines Section 15146, and the level of analysis in this EIR corresponds to the level of detail available in the Specific Plan. No specific future development projects were identified at the time the EIR was prepared; rather, the analysis of potential physical environmental impacts is based on the maximum development permitted by the Specific Plan and on reasonable assumptions about where that future development could occur in the Specific Plan area. The analysis herein is prepared to a level of detail that is sufficient for a program level analysis in conformance with CEQA.

The EIR analysis considers changes that will occur in the Plan area under the Specific Plan compared to existing physical conditions. The Specific Plan establishes a framework for the Plan area for the next 30 years, and the EIR assesses effects that may occur with development under the Specific Plan, including cumulative effects of that development as described in Chapter 4. The EIR also analyzes feasible alternatives that reduce the potential impacts of the Specific Plan, pursuant to Section 15126.6 of the CEQA Guidelines.

Technical studies prepared for the environmental analysis of the Specific Plan include a Transportation Impact Analysis prepared by Fehr and Peers Transportation Consultants, a Water Supply Assessment prepared by Atkins, an Air Quality and Greenhouse Gases assessment, and a shadow study. Additionally, analysis memoranda have been prepared by Fehr and Peers, Strategic Economics and Perkins + Will at the direction of the City to evaluate changes to the Draft Specific Plan. The memoranda have been referenced throughout Chapter 9, *Master Responses to Recurring Comments*, Chapter 10, *Responses to Comments Received on the Draft EIR*, and Chapter 11, *Responses to Comments Received at the Public hearing on the Draft EIR*. The substantial analyses from these reports and memoranda are incorporated into this EIR as appendices. These technical studies and memoranda are detailed data reports and are available for review at City of Menlo Park Community Development offices. A Fiscal Impact Analysis has also been prepared by Strategic Economics, and information from the analysis has been used in the preparation of this EIR.

Use of this EIR

This Program EIR may be used to evaluate future specific development proposals consistent with CEQA Guidelines Section 15168. New proposed projects within the Specific Plan area will require discretionary architectural review. If the City determines that an individual project is consistent with the Specific Plan, then it must examine the project to determine if it would have effects that were not examined in this Program EIR. It is anticipated that projects will typically fall into one of the following categories:

- Smaller buildings/additions (under 10,000 square feet of floor area, typically) may be categorically exempt under Class 1 (“Existing Facilities”) or other provisions of the CEQA Guidelines, and no further review needs to be done. However, environmental review may be required even for future projects that would normally be categorically exempt if there is a reasonable possibility that a project would have a significant effect due to unusual circumstances;

- Any project that is not categorically exempt will be required to complete an Initial Study to determine if all potential impacts were reviewed in this Program EIR; and

- If the Initial Study identifies any impacts that were not analyzed in this Specific Plan EIR, then either a Mitigated Negative Declaration or a project-level EIR will be prepared, depending on whether all of the new impacts can be mitigated.

In addition, all future projects must incorporate feasible mitigation measures and alternatives included in the Mitigation Monitoring Program.

1.3 Public Participation

The CEQA Guidelines strongly encourage, and in some cases, require, public participation in the planning and environmental review processes. For environmental review, these opportunities occurred during the public review and comment period for the Draft EIR and at a public hearing before the Menlo Park Planning Commission. The Final EIR will also be reviewed as part of hearings before the Menlo Park Planning Commission and the Menlo Park City Council when they consider certifying the Final EIR prior to adoption of the Specific Plan.

As discussed in detail in the Specific Plan, the planning process to draft the Specific Plan engaged an Oversight/Outreach Committee, comprised of representative key area stakeholders, the Menlo Park Planning Commission, the Menlo Park City Council and the public. The process involved two phases: the Vision Plan, and the Specific Plan. The Vision Plan included an educational forum, walking tours, three community workshops, one Planning Commission Workshop and two City Council meetings. The City Council unanimously accepted the Vision Plan on July 15, 2008. The Vision Plan serves as the foundation for the Specific Plan. The Specific Plan process included meetings, work sessions and workshops to develop an Emerging Plan. The City published the Draft Specific Plan in April 2010 to initiate the formal public review and comment process.

On December 8, 2009, the City issued a Notice of Preparation (NOP) for 30 calendar days to announce its intent to prepare and distribute an EIR for the Specific Plan. The NOP was distributed to governmental agencies, organizations, and persons interested in the Specific Plan and requested their input on the scope and content of the environmental information that should be addressed in the EIR. A Public Hearing was held on December 15, 2009 to solicit comments from the public and city officials about the scope of this EIR. The NOP and written comments that the City received in response to the NOP are included as Appendix A to this EIR. This EIR addresses the environmental comments received in response to the NOP.

The City of Menlo Park (Lead Agency) released for public review the Draft EIR for the El Camino Real/Downtown Specific Plan. The 45-day public review and comment period on the Draft EIR began on May 5, 2011, and the Menlo Park Planning Commission held a public hearing on the Draft EIR on June 6, 2011. The public review and comment period ended on June 20, 2011. The Planning Commission also held a series of five public meetings between July11 and August 22, 2011 and City Council held four public meetings between August 30 and October 4, 2011, on the Specific Plan and directed that changes be made in the Draft Specific Plan in response to public comments and to reduce environmental impacts.

Final EIR Review Process

The Final EIR will be considered by the Menlo Park Planning Commission and City Council in public meetings. Prior to approving the Specific Plan, the City Council must certify that (1) the Final EIR has been completed in compliance with CEQA; (2) the City has reviewed and considered the information in the Final EIR; and (3) the Final EIR reflects the City's independent judgment and analysis (CEQA Guidelines Section 15090).

Once the Final EIR is certified, the City will consider the Specific Plan for approval. As part of the approval process, the City will make written findings for each significant impact identified for the Specific Plan. The findings will indicate whether feasible mitigation measures have been incorporated into the project that will avoid or substantially reduce the significant environmental effects identified in the Final EIR. The findings will also address alternatives considered in the EIR to avoid or reduce significant impacts identified for the project. If the City finds that all impacts have not been avoided or substantially reduced, it must make findings of overriding consideration, stating why the Specific Plan's benefits justify its approval, to approve the Plan.

CEQA requires that when the City makes findings based on an EIR that include the adoption of mitigation measures, it must adopt a reporting or monitoring program for those mitigation measures that it has adopted or made a condition of project approval in order to mitigate or avoid significant environmental effects. The final adoption will include a Mitigation Monitoring and Reporting Program.

1.4 Organization of this Final EIR

This Final EIR consists of two major sections: Chapters 1 through 7 comprise a completely revised Draft EIR that incorporates the changes made in the Specific Plan, any new mitigation measures incorporated into the Specific Plan, and any clarifications or expanded discussions developed as a result of comments on the Draft EIR. In Chapters 2 through 7, changes that have occurred as a result of changes made to the Specific Plan, responses to comments, and staff-initiated changes (i.e., minor clarifications and edits) are shown in underline/strikethrough format. Chapters 8 through 11 are the City's Responses to Comments made on the Draft EIR and include comments received on the Draft EIR, a listing of persons, organizations, and public agencies commenting on the Draft EIR, and responses to significant environmental points raised in the review and consultation process. Appendices are provided at the end of the document. Following this Chapter 1 (Introduction), this Final EIR is organized as follows:

- **Chapter 2 (Summary)** contains a brief summary of the Specific Plan and allows the reader to easily reference the analysis presented in the EIR. Table 2-1, Summary of Impacts, Mitigation Measures, and Residual Impacts (i.e., the level of environmental impact remaining after implementation of a given mitigation), is provided at the end of Chapter 2 as a reader-friendly reference to each of the environmental effects, proposed mitigation measures and residual environmental impacts presented by environmental topic. Chapter 2 also summarizes the analysis of alternatives to the Proposed Project, areas of controversy, and issues to be resolved.

- **Chapter 3 (Project Description)** describes in detail the Specific Plan, its objectives and other components, and the Specific Plan area and surroundings, including the changes made in the Draft Specific Plan. Chapter 3 also identifies the approvals and actions required for the City to adopt the Specific Plan.

- **Chapter 4 (Environmental Setting, Impacts, and Mitigation Measures)** discusses the regulatory setting, existing conditions, applicable plans and policies, significance criteria, and the environmental impact analysis and mitigation measures identified for the Specific Plan.

- **Chapter 5 (Alternatives)** evaluates a range of alternatives to the Specific Plan that could feasibly attain most of the project objectives while reducing potentially significant impacts, and identifies an environmentally superior alternative.

- **Chapter 6 (Impact Overview and Growth-Inducing Impacts)** summarizes the less-than-significant, significant and avoidable, and cumulative impacts that could result with the Specific Plan, as they are identified throughout Chapter 4. Chapter 6 also describes the Specific Plan's potential to induce growth not previously considered.

- **Chapter 7 (Report Preparers)** identifies the authors of the EIR, including City staff and the EIR consultant team.

- **Chapter 8 (Commenters on the DEIR)** lists all agencies, organizations and individuals that submitted written comments on the Draft EIR during the public review and comment period, and/or that commented at the Planning Commission Public Hearing on the Draft EIR.

- **Chapter 9 (Master Responses to Recurring Comments)** presents single, comprehensive responses to a number of topics that were raised by several commenters.

- **Chapter 10 (Responses to Written Comments Received on the Draft EIR)** contains each of the comment letters received on the Draft EIR and presents individual responses to the specific comments raised in each letter.

- **Chapter 11 (Responses to Comments Received at the Planning Commission Public Hearing on the Draft EIR)** includes a transcript of the Public Hearing on the Draft EIR and presents responses to the specific comments received.

- **Appendices** to the EIR are provided at the end of the document and include the NOP and supporting background documents and technical reports and analysis memoranda used for the impact analyses for specific topics. All reference documents and persons contacted to prepare this EIR are listed as footnotes on the page they are referenced in Chapter 4, *Environmental Setting, Impacts, and Mitigation Measures*. Referenced documents are available for review at the City of Menlo Park Community Development Offices, 701 Laurel Street, Menlo Park, CA.

New Information in the Final EIR

If significant new information is added to an EIR after the public review, the lead agency is required to recirculate the EIR or a portion of it for additional public review and comments (CEQA Guidelines, Section 150885). "[N]ew information to an EIR is not significant unless the EIR is changed in a way that deprives the public of a meaningful opportunity to comment on a substantial adverse effect of the project or a feasible way to mitigate or avoid such an effect (including a feasible project alternative) that the project's proponents have declined to implement….[R]ecirculation is not required where the new information added to the EIR merely clarifies or amplifies…. or makes insignificant modification in….an adequate EIR" (*Laurel Heights Improvement Association of San Francisco, Inc. v. Regents of the University of California* (1993) 6 Cal. 4th 1112, 1129-1130). Significant new information requiring recirculation may include, for example, a disclosure showing that:

- A new significant environmental impact would result from the project or from a new mitigation measure proposed to be implemented;
- A substantial increase in the severity of an environmental impact that would result unless mitigation measures are adopted that reduce the impact to a level of insignificance;
- A feasible project alternative or mitigation measure considerably different from others previously analyzed would clearly lessen the significant impacts of the project, but the project's proponents decline to adopt it; and
- The Draft EIR was so fundamentally and basically inadequate and conclusory in nature that meaningful public review and comment were precluded. (CEQA Guidelines Section 15088.5.)

Following publication of the Draft EIR, the City has made several changes in the Specific Plan to respond to public comments and to reduce environmental impacts. **Chapter 3** in this Final EIR identifies the specific changes to the Plan and shows changes to the Plan throughout the chapter in strikethrough/underline format. In addition, the EIR has been modified as a result of comments made on the Draft EIR. In some cases, additional mitigation measures have been added. These changes are also shown in strikethrough/underline format.

Although incorporation of the changes to the Specific Plan has resulted in modifications to the text of the Draft EIR, the changes have in general reduced or avoided environmental impacts and do not result in any new significant impacts or substantially increase the severity of an already identified impact in the Draft EIR. Additionally, there are no impacts described as less than significant in the Draft EIR that have been reevaluated in the Final EIR and found to be significant. Further, all new feasible mitigation measures identified have either been incorporated into the Specific Plan itself or have been adopted as mitigation measures; none of these new mitigation measures result in significant new environmental impacts. For these reasons recirculation of the Draft EIR is not required pursuant to CEQA.

CHAPTER 2
Summary

2.1 Specific Plan Overview

The City of Menlo Park, Lead Agency and project sponsor, proposes the Menlo Park El Camino Real/Downtown Specific Plan. The Specific Plan area is approximately 130 acres that includes El Camino Real, downtown, and the rail station, and the Specific Plan is intended to guide redevelopment over the next 30 years. The Plan Area is comprised of the El Camino Real corridor, the downtown area (Santa Cruz Avenue between El Camino Real and University Drive), and the rail station area on Alma Street between Oak Grove and Ravenswood Avenues.

The Specific Plan establishes the intensity and character of commercial and residential development, the location and character of streetscape and public space improvements; and the circulation pattern and parking strategy to support development and east-west connectivity.

The Specific Plan includes within it a comprehensive set of General Plan-type components (e.g., goals, policies, land use designations, and circulation plans). As such, prior to the adoption of the Specific Plan, the General Plan will be amended to include the Specific Plan as part of the General Plan itself, governing the plan area. The Specific Plan also includes Zoning Ordinance-type elements (e.g., detailed development regulations). After adoption of the Specific Plan, the City will adopt similar Zoning Ordinance amendments that will constitute the Zoning Ordinance for the Plan area, unless otherwise specified. The General Plan Land Use Diagram and the City's Zoning Map will be similarly amended to show changes consistent with the Specific Plan.

2.2 Environmental Impacts and Mitigation Measures

All potential impacts, recommended mitigation measures, residual impacts and levels of impacts after mitigation measures are implemented that are identified in this EIR are summarized in **Table 2-1** at the end of this chapter.

2.3 Alternatives

Chapter 5 of this EIR analyzes a range of reasonable alternatives to the proposed project. The alternatives to the project that are analyzed in detail in this Draft EIR are:

- **No Project Alternative.** The No Project Alternative is provided in this EIR to compare the impacts of approving the Specific Plan to not approving the Specific Plan (CEQA Guidelines, Section 15126.6[e]).

- **Reduced Project Alternative.** Reduced development in residential units, commercial and retail square footage, and hotel rooms.

- **Reduced Commercial/Retail Space Alternative.** Reduced commercial and retail square footage and hotel rooms, but with the same number of residential units as proposed under the Specific Plan.

- **Reduced Residential Units Alternative.** Reduced number of residential units, but with the same square footage for commercial and retail space and same number of hotel rooms as under the Specific Plan.

2.4 Areas of Controversy

CEQA Guidelines Section 15123 specifies that the EIR summary shall identify "areas of controversy" known to the Lead Agency, including issues raised by agencies and the public, and issues to be resolved, including the choice among alternatives and whether or how to mitigate the significant effects.

The following topics were raised in written and oral comments received in response to the NOP for this EIR. This summary list is compiled based on written comments received (which are included in Appendix A of this EIR) and comments stated during the City's scoping meeting held by the Menlo Park City Council. The topics that would have physical impacts under CEQA are addressed in the EIR analysis. Comments on the appropriateness of other components of the Specific Plan have been and will be considered by the Planning Commission and City Council during the review of the Specific Plan.

Major areas of controversy (including some non-CEQA issues) include, but are not limited to, the following:

- *Land Use Plans and Policies*
  - Benefits of transit oriented development
  - Appropriateness and location of a permanent "market place"
  - Appropriateness of boutique hotel

- *Aesthetic Resources*
  - Appropriateness of height of proposed parking garages and mixed-use buildings

- *Air Quality*
  - Proposed project's construction, operational, and cumulative air quality impacts
  - Toxic air contaminants
  - Dust emissions from construction activities
  - Greenhouse gas emissions

- *Transportation, Circulation, and Parking*
  - Traffic congestion at downtown intersections
  - Adequate parking for visitors and employees of local businesses
  - Parking for residents of proposed mixed-use buildings
  - Access to proposed parking structures
  - Vehicle safety at railroad crossings

  - Grade separation of rail and vehicle traffic
  - Bicycle safety and east-west bicycle routes
  - Maximum impact to parking
  - East-west connectivity in terms of current road capacity
  - Parking garage construction impacts to existing downtown businesses

- *Population and Housing*
  - Contention that the City is currently built-out
  - Potential negative impact of population growth
  - Increase/decrease in housing values

- *Alternatives*
  - Underground parking
  - Alternate locations for Specific Plan elements (such as street market and parking garages)
  - Parking supply scenarios for the new residential buildings

TABLE 2-1
SUMMARY OF IMPACTS, MITIGATION MEASURES AND RESIDUAL IMPACTS

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
4.1 Aesthetic Resources		
Impact AES-1: Implementation of the Specific Plan would alter views along certain corridors, but these changes would not be substantially adverse and so would be less than significant. (Less than Significant)	None required.	Less than Significant
Impact AES-2: Implementation of the Menlo Park El Camino Real/Downtown Specific Plan would not result in substantial adverse impacts to scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within state scenic highways. (Less than Significant)	None required.	Less than Significant
Impact AES-3: Consistent with the objectives of the Specific Plan, implementation of the Plan would change the visual character of the Plan area, but would not substantially degrade the existing visual character or quality of the Plan area and its surroundings. (Less than Significant)	None required.	Less than Significant
Impact AES-4: Implementation of the Specific Plan would not result in shading of outdoor recreation facilities, other public open spaces, historic buildings, or a substantial number of properties to an extent that would substantially affect, in an adverse manner, their use. (Less than Significant)	None required.	Less than Significant
Impact AES-5: Construction of new buildings and street lighting within the Specific Plan area could increase light and glare, but these changes would not be substantially adverse. (Less than Significant)	None required.	Less than Significant
Impact AES-6: Implementation of the Menlo Park El Camino Real/Downtown Specific Plan, in combination with other past, present, and reasonably foreseeable future plans and projects, would not result in cumulatively considerable impacts to aesthetic resources. (Less than Significant)	None required.	Less than Significant
4.2 Air Quality		
Impact AIR-1: Implementation of the Specific Plan would result in increased long-term emissions of criteria pollutants associated with construction activities that could contribute substantially to an air quality violation. (Significant)	**Mitigation Measure AIR-1a:** During construction of individual projects under the Specific Plan, project applicants shall require the construction contractor(s) to implement the following measures required as part of Bay Area Air Quality Management District's (BAAQMD) basic dust control procedures required for construction sites. For projects for which construction emissions exceed one or more of the applicable BAAQMD thresholds, additional measures shall be required as indicated in the list following the Basic Controls. *Basic Controls that Apply to All Construction Sites* 1. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.	Significant and Unavoidable

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS, MITIGATION MEASURES AND RESIDUAL IMPACTS

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
4.2 Air Quality (cont.)		
Impact AIR-1 (cont.)	2. All haul trucks transporting soil, sand, or other loose material off-site shall be covered. 3. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited. 4. All vehicle speeds on unpaved roads shall be limited to 15 mph. 5. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used. 6. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points. 7. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation. 8. Post a publicly visible sign with the telephone number and person to contact at the Lead Agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The BAAQMD's phone number shall also be visible to ensure compliance with applicable regulations. *Additional Measures for Development Projects that Exceed Significance Criteria* 1. All exposed surfaces shall be watered at a frequency adequate to maintain minimum soil moisture of 12 percent. Moisture content can be verified by lab samples or moisture probe. 2. All excavation, grading, and/or demolition activities shall be suspended when average wind speeds exceed 20 mph. 3. Wind breaks (e.g., trees, fences) shall be installed on the windward side(s) of actively disturbed areas of construction. Wind breaks should have at maximum 50 percent air porosity. 4. Vegetative ground cover (e.g., fast-germinating native grass seed) shall be planted in disturbed areas as soon as possible and watered appropriately until vegetation is established. 5. The simultaneous occurrence of excavation, grading, and ground-disturbing construction activities on the same area at any one time shall be limited. Activities shall be phased to reduce the amount of disturbed surfaces at any one time. 6. All trucks and equipment, including their tires, shall be washed off prior to leaving the site.	

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS, MITIGATION MEASURES AND RESIDUAL IMPACTS

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
4.2 Air Quality (cont.)		
Impact AIR-1 (cont.)	7. Site accesses to a distance of 100 feet from the paved road shall be treated with a 6- to 12-inch compacted layer of wood chips, mulch, or gravel. 8. Sandbags or other erosion control measures shall be installed to prevent silt runoff to public roadways from sites with a slope greater than one percent. 9. Minimizing the idling time of diesel powered construction equipment to two minutes. 10. The project shall develop a plan demonstrating that the off-road equipment (more than 50 horsepower) to be used in the construction project (i.e., owned, leased, and subcontractor vehicles) would achieve a project wide fleet-average 20 percent nitrogen oxides reduction and 45 percent particulate matter reduction compared to the most recent ARB fleet average. Acceptable options for reducing emissions include the use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, add-on devices such as particulate filters, and/or other options as such become available. 11. Use low volatile organic compound (VOC) (i.e., reactive organic gases) coatings beyond the local requirements (i.e., Regulation 8, Rule 3: Architectural Coatings). 12. Requiring that all construction equipment, diesel trucks, and generators be equipped with Best Available Control Technology for emission reductions of nitrogen oxides and particulate matter. 13. Requiring all contractors use equipment that meets the California Air Resources Board's most recent certification standard for off-road heavy duty diesel engines. **Mitigation Measure AIR-1b:** Each applicant for development projects to be implemented under the Specific Plan for projects that exceed the BAAQMD screening criteria shall develop an Exhaust Emissions Control Plan outlining how construction exhaust emissions will be controlled during construction activities. These plans shall be submitted to the City for review and approval and shall be distributed to all employees and construction contractors prior to commencement of construction activities. The plan shall describe all feasible control measures that will be implemented during construction activities. Feasible control measures may include, but not be limited to, those identified in Mitigation Measure AIR-1a.	
Impact AIR-2: Implementation of the Specific Plan would result in increased long-term emissions of criteria pollutants from increased vehicle traffic and on-site area sources that would contribute substantially to an air quality violation. (Significant)	Mitigation Measure TR-2 of Section 4.13, Transportation, Circulation and Parking, identifies Transportation Demand Management (TDM) strategies to be implemented by individual project applicants, although the precise effectiveness of a TDM program cannot be guaranteed. As the transportation demand management strategies included in Mitigation Measure TR-2 represent the majority of available measures with which to reduce VMT, no further mitigation measures are available and this impact is considered to be significant and unavoidable.	Significant and Unavoidable

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS, MITIGATION MEASURES AND RESIDUAL IMPACTS

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
4.2 Air Quality (cont.)		
Impact AIR-3: Implementation of the Specific Plan would increase levels of project generated toxic air contaminants (TACs) which may lead to adverse health effects. (Less than Significant)	None required.	Less than Significant
Impact AIR-4: Implementation of the Specific Plan would expose persons to increased levels of project generated $PM_{2.5}$ which may lead to adverse health effects. (Less than Significant)	None required.	Less than Significant
Impact AIR-5: Implementation of the Specific Plan would locate sensitive receptors in an area of elevated concentrations of toxic air contaminants associated with roadway traffic which may lead to considerable adverse health effects. (Potentially Significant)	**Mitigation Measure AIR-5:** The final Mitigation Monitoring and Reporting Program shall require that all developments that include sensitive receptors such as residential units that would be located within 200 feet of the edge of El Camino Real or within 100 feet of the edge of Ravenswood Avenue, Oak Grove Avenue east of El Camino Real, or Santa Cruz Avenue west of University Avenue shall undergo, prior to project approval, a screening-level health risk analysis to determine if cancer risk, hazard index, and/or $PM_{2.5}$ concentration would exceed BAAQMD thresholds. If one or more thresholds would be exceeded at the site of the subsequent project, the project (or portion of the project containing sensitive receptors, in the case of a mixed-use project) shall be equipped with filtration systems with a Minimum Efficiency Reporting Value (MERV) rating of 14 or higher. The ventilation system shall be designed by an engineer certified by the American Society of Heating, Refrigeration and Air-Conditioning Engineers, who shall provide a written report documenting that the system reduces interior health risks to less than 10 in one million, or less than any other threshold of significance adopted by BAAQMD or the City for health risks. The project sponsor shall present a plan to ensure ongoing maintenance of ventilation and filtration systems and shall ensure the disclosure to buyers and/or renters regarding the findings of the analysis and inform occupants as to proper use of any installed air filtration. Alternatively, if the project applicant can prove at the time of development that health risks at new residences due to DPM (and other TACs, if applicable) would be less than 10 in one million, or less than any other threshold of significance adopted by BAAQMD for health risks, or that alternative mitigation measures reduce health risks below any other City-adopted threshold of significance, such filtration shall not be required.	Less than Significant
Impact AIR-6: Implementation of the Specific Plan would locate new sensitive receptors in an area of elevated concentrations of $PM_{2.5}$ associated with roadway traffic which may lead to considerable adverse health effects. (Potentially Significant)	**Mitigation Measure AIR-5.**	Less than Significant
Impact AIR-7: Implementation of the Specific Plan would expose sensitive receptors to elevated concentrations of Toxic Air Contaminants (TACs) associated with Caltrain operations which may lead to considerable adverse health effects. (Potentially Significant)	**Mitigation Measure AIR-7:** The final Mitigation Monitoring and Reporting Program shall require that all residential developments that include sensitive receptors such as residential units that is to be constructed within the Plan area that would be located within approximately 1095 feet of the edge of the Caltrain right-of-way shall undergo, prior to project approval, a screening-level health risk analysis to determine if cancer risk, hazard index, and/or $PM_{2.5}$ concentration would exceed BAAQMD thresholds. If one or more thresholds would be exceeded at the site of the subsequent project, the	Less than Significant

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS, MITIGATION MEASURES AND RESIDUAL IMPACTS

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
4.2 Air Quality (cont.)		
Impact AIR-7 (cont.)	project (or portion of the project containing sensitive receptors, in the case of a mixed-use project) shall be equipped with filtration systems with a Minimum Efficiency Reporting Value (MERV) rating of 14 or higher. The ventilation system shall be designed by an engineer certified by the American Society of Heating, Refrigeration and Air-Conditioning Engineers, who shall provide a written report documenting that the system reduces interior health risks to less than 10 in one million, or less than any other threshold of significance adopted by BAAQMD or the City for health risks. The project sponsor shall present a plan to ensure ongoing maintenance of ventilation and filtration systems and shall ensure the disclosure to buyers and/or renters regarding the findings of the analysis and inform occupants as to proper use of any installed air filtration. Alternatively, if the project applicant can prove at the time of development that health risks at new residences due to DPM (and other TACs, if applicable) would be less than 10 in one million, or less than any other threshold of significance adopted by BAAQMD for health risks, or that alternative mitigation measures reduce health risks below any other City-adopted threshold of significance, such filtration shall not be required.	
Impact AIR-8: Implementation of the Specific Plan would expose new sensitive receptors to elevated concentrations of $PM_{2.5}$ associated with Caltrain operations which may lead to considerable adverse health effects. (Less than Significant)	None required.	Less than Significant
Impact AIR-9: The Specific Plan is fundamentally consistent with the growth assumptions of the *Bay Area 2010 Clean Air Plan*. (Less than Significant)	None required	Less than Significant
Impact AIR-10: Implementation of the Specific Plan would locate new sensitive receptors near sources of toxic air contaminants which may lead to cumulatively considerable adverse health effects. (Potentially Significant)	**Measure AIR-10:** The final Mitigation Monitoring and Reporting Program shall require that all residential developments including sensitive receptors such as residential units that would be located within 1,000 feet around SRI International campus undergo, prior to project approval, a screening-level health risk analysis to determine if cancer risk, hazard index, and/or $PM_{2.5}$ concentration would exceed BAAQMD thresholds. If one or more thresholds would be exceeded at the site of the subsequent project, the project (or portion of the project containing sensitive receptors, in the case of a mixed-use project) shall be equipped with filtration systems with a Minimum Efficiency Reporting Value (MERV) rating of 14 or higher. The ventilation system shall be designed by an engineer certified by the American Society of Heating, Refrigeration and Air-Conditioning Engineers, who shall provide a written report documenting that the system reduces interior health risks to less than 10 in one million, or less than any other threshold of significance by BAAQMD or the City for health risks. The project sponsor shall present a plan to ensure ongoing maintenance of ventilation and filtration systems and shall ensure the disclosure to buyers and/or renters regarding the findings of the analysis and inform occupants as to proper use of any installed air filtration. Alternatively, if the project applicant can	Less than Significant

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS, MITIGATION MEASURES AND RESIDUAL IMPACTS

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
4.2 Air Quality (cont.)		
Impact AIR-10 (cont.)	prove at the time of development that health risks at new residences due to DPM (and other TACs, if applicable) would be less than 10 in one million, or less than any other threshold of significance adopted by BAAQMD for health risks, or that alternative mitigation measures reduce health risks below any other City-adopted threshold of significance, such filtration shall not be required.	
Impact AIR-11: Implementation of the Specific Plan would locate new sensitive receptors near sources of $PM_{2.5}$ which may lead to cumulatively considerable adverse health effects. (Less than Significant)	None required.	Less than Significant
4.3 Biological Resources		
Impact BIO-1: The Specific Plan could result in the take of special-status birds or their nests. (Potentially Significant)	**Mitigation Measure BIO-1a: Pre-Construction Special-Status Avian Surveys.** No more than two weeks in advance of any tree or shrub pruning, removal, or ground-disturbing activity that will commence during the breeding season (February 1 through August 31), a qualified wildlife biologist will conduct pre-construction surveys of all potential special-status bird nesting habitat in the vicinity of the planned activity. Pre-construction surveys are not required for construction activities scheduled to occur during the non-breeding season (August 31 through January 31). Construction activities commencing during the non-breeding season and continuing into the breeding season do not require surveys (as it is assumed that any breeding birds taking up nests would be acclimated to project-related activities already under way). Nests initiated during construction activities would be presumed to be unaffected by the activity, and a buffer zone around such nests would not be necessary. However, a nest initiated during construction cannot be moved or altered. ***If pre-construction surveys indicate that no nests of special-status birds are present or that nests are inactive or potential habitat is unoccupied*:** no further mitigation is required. ***If active nests of special-status birds are found during the surveys*:** implement Mitigation Measure BIO-1b. **Mitigation Measure BIO-1b: Avoidance of active nests.** If active nests of special-status birds or other birds are found during surveys, the results of the surveys would be discussed with the California Department of Fish and Game and avoidance procedures will be adopted, if necessary, on a case-by-case basis. In the event that a special-status bird or protected nest is found, construction would be stopped until either the bird leaves the area or avoidance measures are adopted. Avoidance measures can include construction buffer areas (up to several hundred feet in the case of raptors), relocation of birds, or seasonal avoidance. If buffers are created, a no disturbance zone will be created around active nests during the breeding season or until a qualified biologist determines that all young have fledged. The size of the buffer zones and types of construction activities restricted will take into account factors such as the following:	Less than Significant

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS, MITIGATION MEASURES AND RESIDUAL IMPACTS

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
4.3 Biological Resources (cont.)		
Impact BIO-1 (cont.)	1. Noise and human disturbance levels at the Plan area and the nesting site at the time of the survey and the noise and disturbance expected during the construction activity; 2. Distance and amount of vegetation or other screening between the Plan area and the nest; and 3. Sensitivity of individual nesting species and behaviors of the nesting birds.	
Impact BIO-2: Project construction and operations, as well as the final building structures, have the potential to affect migratory and breeding special-status birds through building collisions. (Less than Significant)	None required.	Less than Significant
Impact BIO-3: Impacts to migratory or breeding special-status birds and other special-status species due to lighting conditions. (Potentially Significant)	**Mitigation Measure BIO-3a: Reduce building lighting from exterior sources.** a. Minimize amount and visual impact of perimeter lighting and façade up-lighting and avoid up-lighting of rooftop antennae and other tall equipment, as well as of any decorative features; b. Installing motion-sensor lighting, or lighting controlled by timers set to turn off at the earliest practicable hour; c. Utilize minimum wattage fixtures to achieve required lighting levels; d. Comply with federal aviation safety regulations for large buildings by installing minimum intensity white strobe lighting with a three-second flash interval instead of continuous flood lighting, rotating lights, or red lighting; e. Use cutoff shields on streetlight and external lights to prevent upwards lighting. **Mitigation Measure BIO-3b: Reduce building lighting from interior sources.** a. Dim lights in lobbies, perimeter circulation areas, and atria; b. Turn off all unnecessary lighting by 11pm thorough sunrise, especially during peak migration periods (mid-March to early June and late August through late October); c. Use gradual or staggered switching to progressively turn on building lights at sunrise. d. Utilize automatic controls (motion sensors, photo-sensors, etc.) to shut off lights in the evening when no one is present; e. Encourage the use of localized task lighting to reduce the need for more extensive overhead lighting; f. Schedule nightly maintenance to conclude by 11 p.m.; g. Educate building users about the dangers of night lighting to birds.	Less than Significant
Impact BIO-4: Noise from project construction and operational activities could affect migrating and breeding special-status birds, and other special-status species, but not to a degree that would be considered substantial or adverse. (Less than Significant)	None required.	Less than Significant

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS, MITIGATION MEASURES AND RESIDUAL IMPACTS

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
4.3 Biological Resources (cont.)		
Impact BIO-5: The Specific Plan could result in the take of special-status bat species. (Potentially Significant)	**Mitigation Measure BIO-5a: Preconstruction surveys.** Potential direct and indirect disturbances to special-status bats will be identified by locating colonies and instituting protective measures prior to construction of any subsequent development project. No more than two weeks in advance of tree removal or structural alterations to buildings with closed areas such as attics, a qualified bat biologist (e.g., a biologist holding a California Department of Fish and Game collection permit and a Memorandum of Understanding with the California Department of Fish and Game allowing the biologist to handle and collect bats) shall conduct pre-construction surveys for potential bats in the vicinity of the planned activity. A qualified biologist will survey buildings and trees (over 12 inches in diameter at 4.5-foot height) scheduled for demolition to assess whether these structures are occupied by bats. No activities that would result in disturbance to active roosts will proceed prior to the completed surveys. If bats are discovered during construction, any and all construction activities that threaten individuals, roosts, or hibernacula will be stopped until surveys can be completed by a qualified bat biologist and proper mitigation measures implemented. ***If no active roosts present*:** no further action is warranted. ***If roosts or hibernacula are present*:** implement Mitigation Measures BIO-5b and 5c. **Mitigation Measure BIO-5b: Avoidance.** If any active nursery or maternity roosts or hibernacula of special-status bats are located, the subsequent development project may be redesigned to avoid impacts. Demolition of that tree or structure will commence after young are flying (i.e., after July 31, confirmed by a qualified bat biologist) or before maternity colonies forms the following year (i.e., prior to March 1). For hibernacula, any subsequent development project shall only commence after bats have left the hibernacula. No-disturbance buffer zones acceptable to the California Department of Fish and Game will be observed during the maternity roost season (March 1 through July 31) and during the winter for hibernacula (October 15 through February 15). Also, a no-disturbance buffer acceptable in size to the California Department of Fish and Game will be created around any roosts in the Project vicinity (roosts that will not be destroyed by the Project but are within the Plan area) during the breeding season (April 15 through August 15), and around hibernacula during winter (October 15 through February 15). Bat roosts initiated during construction are presumed to be unaffected, and no buffer is necessary. However, the “take” of individuals is prohibited. **Mitigation Measure BIO-5c: Safely evict non-breeding roosts.** Non-breeding roosts of special-status bats shall be evicted under the direction of a qualified bat biologist. This will be done by opening the roosting area to allow airflow through the cavity. Demolition will then follow no sooner or later than the following day. There should not be less than one night between initial disturbance with airflow and demolition. This action should allow bats to leave during dark hours, thus increasing their chance of finding new roosts with a minimum of potential predation during daylight. Trees with roosts that need to be removed should first be disturbed at dusk, just prior to removal that same evening, to allow bats to escape during the darker hours. However, the “take” of individuals is prohibited.	Less than Significant

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS, MITIGATION MEASURES AND RESIDUAL IMPACTS

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
4.3 Biological Resources (cont.)		
Impact BIO-6a: The Specific Plan could result in impacts to special-status amphibians and reptiles; California red-legged frog, California tiger salamander, and western pond turtle. (Potentially Significant)	**Mitigation Measure BIO 6a:** The following measures shall be implemented to mitigate the effects of the project on special-status amphibians and reptiles: Staging areas, and all fueling and maintenance of vehicles and other equipment and staging areas shall be at least 100 feet from the riparian corridor of San Francisquito Creek. For any construction that takes place within 100 feet of the riparian corridor of San Francisquito Creek: • The project sponsor shall install exclusionary fencing, such as silt fences, along San Francisquito Creek and around all construction areas that are within 100 feet of or adjacent to potential California red-legged frog, California tiger salamander, or western pond turtle habitat, which includes San Francisquito Creek and its riparian corridor. Once fencing is in place, it shall be maintained by the project sponsor until completion of construction within or adjacent to the enclosure. • Prior to commencement of any earthmoving activities, the project sponsor shall retain a qualified monitoring biologist to train all construction personnel and work crews on the sensitivity and identification of the California red-legged frog, California tiger salamander, and western pond turtle and the penalties for the "take" of these species. In addition, species identification cards shall be provided to all construction personnel. Training sessions shall be conducted for all new employees before they access the Plan area and periodically throughout project construction. • During project construction the qualified monitoring biologist who is familiar with the identification and life history of California red-legged frog, California tiger salamander, and western pond turtle, and with the appropriate agency authorization, shall be designated to periodically inspect onsite compliance with all mitigation measures, consistent with the training sessions. • The qualified monitoring biologist shall perform a daily survey of the San Francisquito Creek and its riparian corridor within 100 feet of the project site during initial ground-breaking activities and during the rainy season. During these surveys, the qualified monitoring biologist shall inspect the exclusion fencing for individuals trapped within the fence and determine the need for fence repair. After ground-breaking activities and during the non-rainy season, the qualified monitoring biologist shall continue to perform daily fence surveys and compliance reviews at the project site. • If a California red-legged frog or California tiger salamander is identified in the project work area, all work in the immediate area shall cease and the U.S. Fish and Wildlife Service shall be contacted. Work shall not begin again until so authorized by the U.S. Fish and Wildlife Service.	
Impact BIO-6b: The Specific Plan could result in impacts to special-status steelhead. (Less than Significant)	None required.	Less than Significant

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS, MITIGATION MEASURES AND RESIDUAL IMPACTS

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
4.3 Biological Resources (cont.)		
Impact BIO-7: The Specific Plan may result in damage to, or removal of, protected trees that are within or adjacent to the Plan area, but would not conflict with existing ordinances regarding tree resources and not to a degree that would be considered substantial or adverse. (Less than Significant)	None required.	Less than Significant
Impact BIO-8: Construction activities could impact creeks and riparian areas, but development is highly unlikely to occur on sites adjacent to creeks and riparian areas, development is prohibited within the riparian corridor, and water quality impacts would be limited by existing statutes and permitting requirements. (Less than Significant)	None required.	Less than Significant
Impact BIO-9: Project construction activity and operations, in conjunction with other past, current, or foreseeable development in similar urbanized areas in eastern San Mateo County, could result in impacts on special-status species, habitats, wetlands, and other waters of the U.S. (Less than Significant)	None required.	Less than Significant
4.4 Cultural Resources		
Impact CUL-1: The proposed Specific Plan could have a significant impact on historic architectural resources. (Potentially Significant)	**Mitigation Measure CUL-1: Site Specific Evaluations and Treatment in Accordance with the Secretary of the Interior's Standards:** ***Site-Specific Evaluations*:** In order to adequately address the level of potential impacts for an individual project and thereby design appropriate mitigation measures, the City shall require project sponsors to complete site-specific evaluations at the time that individual projects are proposed at or adjacent to buildings that are at least 50 years old. The project sponsor shall be required to complete a site-specific historic resources study performed by a qualified architectural historian meeting the Secretary of the Interior's Standards for Architecture or Architectural History. At a minimum, the evaluation shall consist of a records search, an intensive-level pedestrian field survey, an evaluation of significance using standard National Register Historic Preservation and California Register Historic Preservation evaluation criteria, and recordation of all identified historic buildings and structures on California Department of Parks and Recreation 523 Site Record forms. The evaluation shall describe the historic context and setting, methods used in the investigation, results of the evaluation, and recommendations for management of identified resources. If federal or state funds are involved, certain agencies, such as the Federal Highway Administration and California Department of Transportation (Caltrans), have specific requirements for inventory areas and documentation format. ***Treatment in Accordance with the Secretary of the Interior's Standards*.** Any future proposed project in the Plan Area that would affect previously recorded historic resources, or those identified as a result of site-specific surveys and evaluations,	Less than Significant

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS, MITIGATION MEASURES AND RESIDUAL IMPACTS

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
4.4 Cultural Resources (cont.)		
Impact CUL-1 (cont.)	shall conform to the *Secretary of the Interior's Standards for the Treatment of Historic Properties and Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings* (1995). The *Standards* require the preservation of character defining features which convey a building's historical significance, and offers guidance about appropriate and compatible alterations to such structures.	
Impact CUL-2: The proposed Specific Plan could impact currently unknown archaeological resources. (Potentially Significant)	**Mitigation Measure CUL-2a:** When specific projects are proposed that involve ground disturbing activity, a site-specific cultural resources study shall be performed by a qualified archaeologist or equivalent cultural resources professional that will include an updated records search, pedestrian survey of the project area, development of a historic context, sensitivity assessment for buried prehistoric and historic-period deposits, and preparation of a technical report that meets federal and state requirements. If historic or unique resources are identified and cannot be avoided, treatment plans will be developed in consultation with the City and Native American representatives to mitigate potential impacts to less than significant based on either the Secretary of the Interior's Standards described in Mitigation Measure CUL-1 (if the site is historic) or the provisions of Public Resources Code Section 21083.2 (if a unique archaeological site). **Mitigation Measure CUL-2b:** Should any archaeological artifacts be found during construction, all construction activities within 50 feet shall immediately halt and the City must be notified. A qualified archaeologist shall inspect the findings within 24 hours of the discovery. If the resource is determined to be a historical resource or unique resource, the archaeologist shall prepare a plan to identify, record, report, evaluate, and recover the resources as necessary, which shall be implemented by the developer. Construction within the area of the find shall not recommence until impacts on the historical or unique archaeological resource are mitigated as described in Mitigation Measure CUL-2a above. Additionally, Public Resources Code Section 5097.993 stipulates that a project sponsor must inform project personnel that collection of any Native American artifact is prohibited by law.	Less than Significant
Impact CUL-3: The proposed Specific Plan may adversely affect unidentifiable paleontological resources. (Potentially Significant)	**Mitigation Measure CUL-3:** Prior to the start of any subsurface excavations that would extend beyond previously disturbed soils, all construction forepersons and field supervisors shall receive training by a qualified professional paleontologist, as defined by the Society of Vertebrate Paleontology (SVP),[1] who is experienced in teaching non-specialists, to ensure they can recognize fossil materials and will follow proper notification procedures in the event any are uncovered during construction. Procedures to be conveyed to workers include halting construction within 50 feet of any potential fossil find and notifying a qualified paleontologist, who will evaluate its significance. Training on paleontological resources will also be provided to all other construction workers, but may involve using a videotape of the initial training and/or written materials	Less than Significant

[1] SVP, 1995.

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS, MITIGATION MEASURES AND RESIDUAL IMPACTS

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
4.4 Cultural Resources (cont.)		
Impact CUL-3 (cont.)	rather than in-person training by a paleontologist. If a fossil is determined to be significant and avoidance is not feasible, the paleontologist will develop and implement an excavation and salvage plan in accordance with SVP standards.[2]	
Impact CUL-4: Implementation of the Plan may cause disturbance of human remains including those interred outside of formal cemeteries. (Potentially Significant)	**Mitigation Measure CUL-4:** If human remains are discovered during construction, CEQA Guidelines 15064.5(e)(1) shall be followed, which is as follows: • In the event of the accidental discovery or recognition of any human remains in any location other than a dedicated cemetery, the following steps should be taken: 1) There shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until: a) The San Mateo County coroner must be contacted to determine that no investigation of the cause of death is required; and b) If the coroner determines the remains to be Native American: 1. The coroner shall contact the Native American Heritage Commission within 24 hours; 2. The Native American Heritage Commission shall identify the person or persons it believes to be the most likely descended from the deceased Native American; 3. The most likely descendent may make recommendations 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 Public Resources Code Section 5097.98; or 2) Where the following conditions occur, the landowner or his authorized representative shall rebury the Native American human remains and associated grave goods with appropriate dignity on the property in a location not subject to further subsurface disturbance. a) The Native American Heritage Commission is unable to identify a most likely descendent or the most likely descendent failed to make a recommendation within 48 hours after being notified by the Commission. b) The descendant identified fails to make a recommendation; or c) The landowner or his authorized representative rejects the recommendation of the descendant, and the mediation by the Native American Heritage Commission fails to provide measures acceptable to the landowner.	Less than Significant

[2] SVP, 1996.

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS, MITIGATION MEASURES AND RESIDUAL IMPACTS

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
4.4 Cultural Resources (cont.)		
Impact CUL-5: The Specific Plan, in combination with past, present, existing, approved, pending, and reasonably foreseeable future development in the vicinity of the Plan area that would involve demolition of historical resources, could form a significant cumulative impact to historical resources. (Less than Significant)	None required.	Less than Significant
Impact CUL-6: Construction under the Specific Plan in combination with construction from other past, present, existing, approved, pending, and reasonably foreseeable future development in the vicinity could cause a significant cumulative impact to currently unknown cultural resources at the site, potentially including an archaeological resource pursuant to CEQA Guidelines Section 15064.5 or CEQA Section 21083.2(g), or the disturbance of any human remains, including those interred outside of formal cemeteries, as well as paleontological resources. (Less than Significant)	None required.	Less than Significant
4.5 Geology and Soils		
Impact GEO-1: In the event of a major earthquake in the region, surface fault rupture, ground shaking, localized liquefaction, and/or seismic-related landsliding could cause damage, destruction or injury to development anticipated under the proposed Specific Plan. (Less than Significant)	None required.	Less than Significant
Impact GEO-2: New development or redevelopment anticipated under the proposed Specific Plan would involve grading and other ground disturbing construction activities which could expose soils to erosion and loss of topsoil. (Less than Significant)	None required.	Less than Significant
Impact GEO-3: New development or redevelopment anticipated under the proposed Specific Plan could be located on unstable soils or become unstable resulting in landslides, lateral spreading, subsidence or collapse. (Less than Significant)	None required.	Less than Significant
Impact GEO-4: New development or redevelopment anticipated under the proposed Specific Plan could be located on expansive soils creating substantial risks to life or property. (Less than Significant)	None required.	Less than Significant
Impact GEO-5: Implementation of the proposed Specific Plan along with potential development in the surrounding region would result in cumulative impacts to geologic and seismic hazards. (Less than Significant)	None required.	Less than Significant

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS, MITIGATION MEASURES AND RESIDUAL IMPACTS

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
4.6 Greenhouse Gases and Climate Change		
Impact GHG-1: The Specific Plan would generate GHG emissions, both directly and indirectly, that would have a significant impact on the environment. (Significant)	**Mitigation Measure GHG-1: Implement feasible BAAQMD-identified GHG Mitigation Measures and Proposed City CALGreen Amendments.** BAAQMD has identified a menu of over 100 available mitigation measures for the purposes of addressing significant air quality impacts, including GHG impacts that arise from implementation of plans including Specific Plans. Many of the GHG reduction measures are already part of the proposed Specific Plan and discussed in the Project Description. Several BAAQMD identified mitigation measures are not applicable to a Specific Plan as they are correlated to specific elements of a general plan. As an example, Table 4.6-5 presents the mitigation measures contained in the BAAQMD CEQA Guidelines related to Land Use elements and either correlates each to a specific element of the project, explains why it is inapplicable to the proposed project or identifies it as a mitigation measure to be implemented by the proposed project. This method was used in consideration of all BAAQMD identified GHG mitigation measures for plans to develop the following list of available mitigation measures (with BAAQMD-identified category) for the proposed Specific Plan: • Facilitate lot consolidation that promotes integrated development with improved pedestrian and vehicular access (Land Use Element: Compact Development). The Specific Plan's increased intensities encourage lot consolidation for developers wishing to maximize efficiencies and new standards and guidelines will result in improved pedestrian (Section E.5) and vehicular (Section E.3.7) access. • Ensure that new development finances the full cost of expanding public infrastructure and services to provide an economic incentive for incremental expansion (Land Use Element: Compact Development). Specific Plan Section E.3.1 describes a process for public benefit negotiation to obtain additional financing for public infrastructure beyond required payments for impact fees such as park dedication and Transportation Fees. • Ensure new construction complies with California Green Building Code Standards and local green building ordinances (Land Use Element: Sustainable Development). The City currently requires compliance with both California Green Building Code Standards and locally-adopted amendments citywide. Standard E.3.8.01 states that all citywide sustainability codes or requirements shall apply to the Plan area, unless the Plan area is explicitly exempted, which it is not. • Provide permitting incentives for energy efficient and solar building projects (Land Use Element: Sustainable Development). Section E.3.8 of the Specific Plan provides specific standards and guidelines for sustainable practices. Section E.3.1 would allow for the consideration of public benefit bonus intensity or height if a project were to exceed the standards stated in Section E.3.8. • Support the use of electric vehicles; where appropriate. Provide electric recharging facilities (Circulation Element: Local Circulation; see also Mitigation Measure GHG-2 below). Mitigation Measure GHG-2a (below) has been incorporated into the Specific Plan.	Significant and Unavoidable

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS, MITIGATION MEASURES AND RESIDUAL IMPACTS

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
4.6 Greenhouse Gases and Climate Change (cont.)		
Impact GHG-1 (cont.)	• Allow developers to reach agreements with auto-oriented shopping center owners to use commercial parking lots as park-and-ride lots and multi-modal transfer sites (Circulation Element: Regional Circulation). The intent of the Specific Plan is to preserve and enhance community life, character and vitality through public space improvements, mixed use infill projects sensitive to the small town character of Menlo Park and improved connectivity. Auto oriented shopping centers are not envisioned in the Plan area. • Eliminate [or reduce] parking requirements for new development in the Specific Plan area (Circulation Element: Parking). The Final Specific Plan has been modified to provide for lower parking rates in the station area and station area sphere of influence; • Encourage developers to agree to parking sharing between different land uses (Circulation Element: Parking). This is permitted by existing City policies and reinforced in the Specific Plan through allowed shared parking reductions (Section F.8). • Require developers to provide preferential parking for low emissions and carpool vehicles (Circulation Element: Parking). These are included as strategies that may be included in a Transportation Demand Management (TDM) program (Section F.10). • Minimize impervious surfaces in new development and reuse project in the Specific Plan area (Conservation Element: Water Conservation). Section 4.8, *Hydrology and Water Quality*, of this EIR includes a discussion of existing grading, drainage and hydrology requirements and Specific Plan guidelines to limit impervious surfaces in the Plan area. • Require fireplaces installed in residential development to be energy efficient in lieu of open hearth. Prohibit the installation of wood burning devices (Conservation Element: Energy Conservation). The City of Menlo Park Municipal Code includes Section 12.52, *Woodburning Appliances*, to control the use of wood burning devises. • Sealing of HVAC ducts. This is a project level BAAQMD measure that requires the developer to obtain third party HVAC commissioning to ensure proper sealing of ducts and optimal heating and cooling efficiencies. BAAQMD estimated that this measure reduces air conditioning electrical demand by 30 percent. The California Energy commission estimates that air conditioning electrical demand represents approximately 20 percent of total demand for a single family residence and this measure would reduce electrical-related GHG emissions by approximately 100 metric tons/year of CO2e. The City currently requires testing of heating and cooling ducts for all newly constructed buildings. Additionally, the City of Menlo Park has implemented its own amendments to the CALGreen building code (California Green Building Standards Code, Title 24, Part 11). These amendments will be designed to require a further 15 percent reduction over baseline Title 24 green building standards requirements for all new development in	

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS, MITIGATION MEASURES AND RESIDUAL IMPACTS

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
4.6 Greenhouse Gases and Climate Change (cont.)		
Impact GHG-1 (cont.)	the City, as well as mandatory duct testing (discussed above) and cool roof or equivalent energy saving materials. Reductions in GHG emissions from these amendments were calculated using the mitigations tab in the BGM model. While BAAQMD also identifies use of cool roof materials as a potential GHG mitigation measure, per CAPCOA3, reflective roofs are covered under Title 24 Part 6 and the electricity savings is therefore incorporated in savings due to Title 24 (CALGreen) and no further reduction was taken for this measure as reductions up to 15 percent beyond Title 24 have already been included.	
Impact GHG-2: The Specific Plan could conflict with applicable plans, policies or regulations of an agency with jurisdiction over the Specific Plan adopted for the purpose of reducing the emissions of GHGs. (Significant)	**Mitigation Measure GHG-2a:** All residential and/or mixed use developments of sufficient size to require LEED certification under the Specific Plan shall install one dedicated electric vehicle/plug-in hybrid electric vehicle recharging station for every 20 residential parking spaces provided. Per the Climate Action Plan the complying applicant could receive incentives, such as streamlined permit processing, fee discounts, or design templates. **Mitigation Measure GHG-2b:** The City could implement a pilot program in the Specific Plan area to require mandatory commercial recycling, either at all buildings or, at a minimum, at newly constructed buildings. Such a program, identified in the AB 32 Scoping Plan and included in the City's Climate Action Plan as a measure for future study, could reduce GHG emissions in the Plan area and, if successful, could be implemented citywide.	Significant and Unavoidable
4.7 Hazards and Hazardous Materials		
Impact HAZ-1: Disturbance and release of contaminated soil during demolition and construction phases of the project, or transportation of excavated material, or contaminated groundwater could expose construction workers, the public, or the environment to adverse conditions related to hazardous materials handling. (Potentially Significant)	**Mitigation Measure HAZ-1:** Prior to issuance of any building permit for sites where ground breaking activities would occur, all proposed development sites shall have a Phase I site assessment performed by a qualified environmental consulting firm in accordance with the industry required standard known as ASTM E 1527-05. The City may waive the requirement for a Phase I site assessment for sites under current and recent regulatory oversight with respect to hazardous materials contamination. If the Phase I assessment shows the potential for hazardous releases, then Phase II site assessments or other appropriate analyses shall be conducted to determine the extent of the contamination and the process for remediation. All proposed development in the Plan area where previous hazardous materials releases have occurred shall require remediation and cleanup to levels established by the overseeing regulatory agency (San Mateo County Environmental Health (SMCEH), Regional Water Quality Control Board (RWQCB) or Department of Toxic Substances Control (DTSC) appropriate for the proposed new use of the site. All proposed groundbreaking activities within areas of identified or suspected contamination shall be conducted according to a site specific health and safety plan, prepared by a licensed professional in accordance with Cal/OHSA regulations (contained in Title 8 of the California Code of Regulations) and approved by SMCEH prior to the commencement of groundbreaking.	Less than Significant

[3] CAPCOA, Quantifying Greenhouse Gas Mitigation Measures, August 2010, p. 456.

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS, MITIGATION MEASURES AND RESIDUAL IMPACTS

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
4.7 Hazards and Hazardous Materials (cont.)		
Impact HAZ-2: Disturbance and release of hazardous structural and building components (i.e., asbestos, lead, PCBs, underground storage tanks, and above ground storage tanks) during demolition and construction phases of development or transport of these materials could expose construction workers, the public, or the environment to adverse conditions related to hazardous materials handling. (Less than Significant)	None required.	Less than Significant
Impact HAZ-3: Hazardous materials used on any individual site during construction activities (i.e., fuels, lubricants, solvents) could be released to the environment through improper handling or storage. (Potentially Significant)	**Mitigation Measure HAZ-3:** All development and redevelopment shall require the use of construction Best Management Practices (BMPs) to control handling of hazardous materials during construction to minimize the potential negative effects from accidental release to groundwater and soils. For projects that disturb less than one acre, a list of BMPs to be implemented shall be part of building specifications and approved of by the City Building Department prior to issuance of a building permit.	Less than Significant
Impact HAZ-4: Future development would include land uses that would handle various commercial, transportation and household hazardous materials in a range of quantities, and could cause an adverse effect on the environment through accidental upset. (Less than Significant)	None required.	Less than Significant
4.8 Hydrology and Water Quality		
Impact HYD-1: Construction associated with the proposed Specific Plan projects could adversely affect water quality and drainage patterns in the short term due to erosion and sedimentation. (Less than Significant)	None required.	Less than Significant
Impact HYD-2: Implementation of the Specific Plan could adversely affect water resources in the long term by reducing permeable surfaces, which could degrade water quality in receiving waters, increase runoff volume and associated downstream flood potential, decrease groundwater recharge, or alter drainage patterns. (Less than Significant)	None required.	Less than Significant
Impact HYD-3: Implementation of the Specific Plan would not place housing or other structures that would impede or redirect floodflows within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other authoritative flood hazard delineation map. (Less than Significant)	None required.	Less than Significant
Impact HYD-4: Implementation of the Specific Plan would not 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. (Less than Significant)	None required.	Less than Significant
Impact HYD-5: Concurrent implementation of the proposed Specific Plan and projected regional development could contribute to degradation of regional water quality, reduction of groundwater recharge, or result in increased flooding hazards. (Less than Significant)	None required.	Less than Significant

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS, MITIGATION MEASURES AND RESIDUAL IMPACTS

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
4.9 Land Use Planning and Policies		
Impact LU-1: Implementation of the Menlo Park El Camino Real/Downtown Specific Plan would not physically divide an established community. (Less than Significant)	None required.	Less than Significant
Impact LU-2: Implementation of the Specific Plan would alter the type and intensity of land uses in the Plan area, but not in a manner that would cause them to be substantially incompatible with surrounding land uses or neighborhood character. (Less than Significant)	None required.	Less than Significant
Impact LU-3: Implementation of the Menlo Park El Camino Real/ Downtown Specific Plan would not substantially conflict with the General Plan, Zoning Ordinance, or other land use plans or policies adopted for the purpose of mitigating an environmental effect. (Less than Significant)	None required.	Less than Significant
Impact LU-4: Implementation of the Menlo Park El Camino Real/Downtown Specific Plan, in combination with other past, present, and reasonably foreseeable future plans and projects, would not result in cumulatively considerable impacts to land use. (Less than Significant)	None required.	Less than Significant.
4.10 Noise		
Impact NOI-1: Construction activities associated with implementation of the Specific Plan would result in substantial temporary or periodic increases in ambient noise levels in the Specific Plan area above levels existing without the Specific Plan and in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies. (Potentially Significant)	**Mitigation Measure NOI-1a:** Construction contractors for subsequent development projects within the Specific Plan area shall utilize the best available noise control techniques (e.g., improved mufflers, equipment redesign, use of intake silencers, ducts, engine enclosures, and acoustically-attenuating shields or shrouds, etc.) when within 400 feet of sensitive receptor locations. Prior to demolition, grading or building permit issuance, a construction noise control plan that identifies the best available noise control techniques to be implemented, shall be prepared by the construction contractor and submitted to the City for review and approval. The plan shall include, but not be limited to, the following noise control elements: • Impact tools (e.g., jack hammers, pavement breakers, and rock drills) used for construction shall be hydraulically or electrically powered wherever possible to avoid noise associated with compressed air exhaust from pneumatically powered tools. However, where use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust shall be used; this muffler shall achieve lower noise levels from the exhaust by approximately 10 dBA. External jackets on the tools themselves shall be used where feasible in order to achieve a reduction of 5 dBA. Quieter procedures shall be used, such as drills rather than impact equipment, whenever feasible; • Stationary noise sources shall be located as far from adjacent receptors as possible and they shall be muffled and enclosed within temporary sheds, incorporate insulation barriers, or other measures to the extent feasible; and	Less than Significant

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS, MITIGATION MEASURES AND RESIDUAL IMPACTS

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
4.10 Noise (cont.)		
Impact NOI-1 (cont.)	• When construction occurs near residents, affected parties within 400 feet of the construction area shall be notified of the construction schedule prior to demolition, grading or building permit issuance. Notices sent to residents shall include a project hotline where residents would be able to call and issue complaints. A Project Construction Complaint and Enforcement Manager shall be designated to receive complaints and notify the appropriate City staff of such complaints. Signs shall be posted at the construction site that include permitted construction days and hours, a day and evening contact number for the job site, and day and evening contact numbers, both for the construction contractor and City representative(s), in the event of problems. **Mitigation Measure NOI-1b:** Noise Control Measures for Pile Driving: Should pile-driving be necessary for a subsequently proposed development project, the project sponsor would require that the project contractor predrill holes (if feasible based on soils) for piles to the maximum feasible depth to minimize noise and vibration from pile driving. Should pile-driving be necessary for the proposed project, the project sponsor would require that the construction contractor limit pile driving activity to result in the least disturbance to neighboring uses. **Mitigation Measure NOI-1c:** The City shall condition approval of projects near receptors sensitive to construction noise, such as residences and schools, such that, in the event of a justified complaint regarding construction noise, the City would have the ability to require changes in the construction control noise plan to address complaints.	
Impact NOI-2: Increased traffic from implementation of the Specific Plan would not result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project. (Less than Significant)	None required.	Less than Significant
Impact NOI-3: The Specific Plan would introduce sensitive receptors to a noise environment with noise levels in excess of standards considered acceptable under the City of Menlo Park Municipal Code. (Potentially Significant)	**Mitigation Measure NOI-3:** Interior noise exposure within homes proposed for the Specific Plan area shall be assessed by a qualified acoustical engineer to determine if sound rated walls and windows would be required to meet the Title 24 interior noise level standard of 45 dBA, L_{dn}. The results of each study shall be submitted to the City showing conceptual window and wall assemblies with Sound Transmission Class (STC) ratings necessary to achieve the noise reductions for the project to satisfy the interior noise criteria within the noise environment of the Plan area.	Less than Significant
Impact NOI-4: The Specific Plan would expose sensitive receptors to substantial levels of groundborne vibration. (Potentially Significant)	**Mitigation Measure NOI-4:** Prior to project approval for development within 200 feet of the mainline track, a detailed vibration design study shall be completed by a qualified acoustical engineer to confirm the ground vibration levels and frequency content along the Caltrain tracks and to determine appropriate design to limit interior vibration levels to 75 VdB for residences and 78 VdB for other uses. If required, vibration isolation techniques could include supporting the new building foundations on elastomer pads similar to bridge bearing pads.	Less than Significant

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS, MITIGATION MEASURES AND RESIDUAL IMPACTS

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
4.10 Noise (cont.)		
Impact NOI-5: Implementation of the Specific Plan, together with anticipated future development in the area in general, would result in a significant increase in noise levels in the area. (Significant)	**Mitigation Measures NOI-1 and NOI-3.** **Mitigation Measure NOI-5:** The City should use rubberized asphalt in future paving projects within the Plan area if it determines that it will significantly reduce noise levels and is feasible given cost and durability. It is noted, however, that rubberized asphalt is typically most effective at noise reduction on high-speed roads such as freeways and expressways, because tire noise is a more important component in traffic noise as speeds increase. In addition, while many project-area roads are within the City's jurisdiction, El Camino Real is a Caltrans facility, and the City cannot require utilization of rubberized asphalt or similar quiet pavement materials on this segment. As a result, and because cost, feasibility, and road construction schedules are uncertain, the impact remains significant and unavoidable. Consequently, the cumulative impact of increased traffic noise on existing sensitive receptors is significant and unavoidable.	Significant and Unavoidable
Impact NOI-6: Anticipated future development of California's High Speed Rail Project would have the potential to expose sensitive receptors within the Specific Plan area to excessive noise levels and groundborne vibration. (Potentially Significant)	**Mitigation Measures NOI-3 and NOI-4.**	Less than Significant
4.11 Population and Housing		
Impact POP-1: The project would not displace existing housing or people such that construction of replacement facilities elsewhere would be required. (Less than Significant)	None required.	Less than Significant
Impact POP-2: The project would not induce substantial population growth, either directly by proposing new housing, or indirectly through infrastructure improvements and job growth. (Less than Significant)	None required.	Less than Significant
Impact POP-3: Implementation of the Menlo Park El Camino Real/ Downtown Specific Plan, in combination with other past, present, and reasonably foreseeable future plans and projects, would not result in cumulatively considerable impacts to population and housing. (Less than Significant)	None required.	Less than Significant
4.12 Public Services and Utilities		
Impact PUB-1: Implementation of the Specific Plan would not result in the need for new or physically altered police facilities. (Less than Significant)	None required.	Less than Significant
Impact PUB-2: Implementation of the Specific Plan would not result in the need for new or physically altered fire and emergency service facilities. (Less than Significant)	None required.	Less than Significant

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS, MITIGATION MEASURES AND RESIDUAL IMPACTS

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
4.12 Public Services and Utilities (cont.)		
Impact PUB-3: Implementation of the Specific Plan would increase public school enrollment. (Less than Significant)	None required.	Less than Significant
Impact PUB-4: Implementation of the Specific Plan would increase the use of parks. (Less than Significant)	None required.	Less than Significant
Impact PUB-5: Implementation of the Specific Plan would increase the demand for water supply. (Less than Significant)	None required.	Less than Significant
Impact PUB-6: Implementation of the Specific Plan would not require or result in the construction of new water treatment facilities or expansion of existing facilities. (Less than Significant)	None required.	Less than Significant
Impact PUB-7: Implementation of the Specific Plan would not exceed wastewater treatment requirements or require construction of new wastewater facilities or expansion of existing facilities. (Less than Significant)	None required.	Less than Significant
Impact PUB-8: The Specific Plan would be served by a landfill with sufficient permitted capacity to accommodate the Specific Plan's solid waste disposal needs, and would comply with federal, State, and local statutes and regulations related to solid waste. (Less than Significant)	None required.	Less than Significant
Impact PUB-9: The Specific Plan would not exceed existing gas and electric supplies. (Less than Significant)	None required.	Less than Significant
Impact PUB-10: Implementation of the Specific Plan in combination with other past, present, and reasonably foreseeable plans and projects would not result in cumulative impacts with respect to public services or utility service systems. (Less than Significant)	None required.	Less than Significant
Impact PUB-11: The proposed project, in combination with other development within the City of Menlo Park, could have insufficient water supplies available to serve the project from existing entitlements under normal, dry and multiple dry years. (Less than Significant)	None required.	Less than Significant
Impact PUB-12: The proposed project, in combination with other development within the City of Menlo Park, would not require or result in the construction of new water treatment facilities or the expansion of existing facilities, which could cause significant environmental effects. (Less than Significant)	None required.	Less than Significant

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS, MITIGATION MEASURES AND RESIDUAL IMPACTS

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
4.13 Transportation, Circulation and Parking		
Impact TR-1: Traffic from future development in the Plan area would adversely affect operation of area intersections. (Significant)	**Mitigation Measure TR-1a:** The individual project applicant(s) shall contribute fair-share funding towards the following improvements at the intersection of University Drive (North) and Santa Cruz Avenue: • Signalization when investigation of the full set of traffic signal warrants indicate that signalization is warranted; and • Interconnecting the new signal with the existing signal at the University Drive (South) and Santa Cruz Avenue. With Mitigation TR-1a, the intersection improves the level of service to LOS C during the a.m. peak hour under Existing plus Project Conditions, and the impact would be reduced to a less-than-significant level.	Significant and Unavoidable (University Drive and Santa Cruz Avenue)
	Mitigation Measure TR-1b: The individual project applicant(s) shall contribute fair-share funding towards the following improvement at the intersection of Middlefield Road and Glenwood Avenue/Linden Avenue: • Signalization when investigation of the full set of traffic signal warrants indicate that signalization is warranted. Signalizing the intersection of Middlefield Road and Glenwood Avenue improves the level of service to LOS B and LOS C during the a.m. and p.m. peak hour, respectively under Existing Plus Project conditions. Therefore, the impact would be reduced to a less-than-significant level. The recently-completed signal at Middlefield Road and Encinal Avenue is projected to shift some traffic that would otherwise use the Middlefield Road and Glenwood Avenue/ Linden Avenue intersection. That signal should also create gaps in the traffic stream that would allow side street traffic to more easily turn onto or cross Middlefield Road. However, although the degree of impact would be reduced, the traffic shifts and additional gaps of the Middlefield Road and Encinal Avenue intersection are not projected to fully mitigate the impact at the Middlefield Road and Glenwood Avenue/ Linden Avenue intersection because the intersection would still operate at an unacceptable level of service. Therefore, the additional mitigation measure of a signal at Middlefield Road and Glenwood Avenue/Linden Avenue would still be needed. This improvement is not in the City's TIF. Therefore, the City could consider adding it to the TIF. Without a funding mechanism, this impact is considered to be significant and unavoidable. In addition, the intersection is under the City of Atherton's jurisdiction, therefore the City cannot guarantee its implementation and the impact remains significant and unavoidable.	Significant and Unavoidable (Middlefield Road and Glenwood Avenue/Linden Avenue)
	Mitigation Measure TR-1c: The individual project applicant(s) shall contribute fair-share funding towards the following improvements at the intersection of Middlefield Road and Willow Road, as identified in the City's TIF program: • Adding a second westbound left-turn lane;	

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS, MITIGATION MEASURES AND RESIDUAL IMPACTS

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
4.13 Transportation, Circulation and Parking (cont.)		
Impact TR-1 (cont.)	• Modifying the westbound approach to two left-turn lanes, one through lane, and one right-turn lane; and • Changing the signal phasing on the eastbound and westbound approaches from split phasing (each approach has a separate green phase) to protected left-turn phasing (with left-turn arrows). These improvements are identified in the City's TIF program and would reduce the average intersection delay to an acceptable level. However, the improvements may not be feasible due to ROW acquisition needs (constrained by the presence of buildings). Therefore, the impact is considered to be significant and unavoidable.	Significant and Unavoidable (Middlefield Road and Willow Road)
	Mitigation Measure TR-1d: The individual project applicant(s) shall contribute fair-share funding towards the following improvements at the intersection of Orange Avenue/Santa Cruz Avenue and Avy Avenue/Santa Cruz Avenue: • Signalization when investigation of the full set of traffic signal warrants indicate that signalization is warranted. Signalizing the intersection of Orange Avenue/Santa Cruz Avenue and Avy Avenue/Santa Cruz Avenue would improve the level of service to LOS C during both the a.m. and p.m. peak hours under Existing Plus Project conditions. Therefore, the impact would be less than significant level, if the City can guarantee its implementation. This improvement is not in the City's TIF. Therefore, the City could consider adding it to the TIF. Without a funding mechanism, this impact is considered to be significant and unavoidable.	Significant and Unavoidable (Orange Avenue/Santa Cruz Avenue and Avy Avenue/Santa Cruz Avenue)
Impact TR-2: Traffic from future development in the Plan area would adversely affect operation of local roadway segments. (Significant)	**Mitigation Measure TR-2:** New developments within the Specific Plan area, regardless of the amount of new traffic they would generate, are required to have in-place a City-approved Transportation Demand Management (TDM) program prior to project occupancy to mitigate impacts on roadway segments and intersections. TDM programs could include the following measures for site users (taken from the C/CAG CMP), as applicable: • Commute alternative information; • Bicycle storage facilities; • Showers and changing rooms; • Pedestrian and bicycle subsidies; • Operating dedicated shuttle service (or buying into a shuttle consortium); • Subsidizing transit tickets; • Preferential parking for carpoolers; • Provide child care services and convenience shopping within new developments; • Van pool programs;	Significant and Unavoidable

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS, MITIGATION MEASURES AND RESIDUAL IMPACTS

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
4.13 Transportation, Circulation and Parking (cont.)		
Impact TR-2 (cont.)	• Guaranteed ride home program for those who use alternative modes; • Parking cashout programs and discounts for persons who carpool, vanpool, bicycle or use public transit; • Imposing charges for parking rather than providing free parking; • Providing shuttles for customers and visitors; and/or • Car share programs. However, because the effectiveness of a TDM program cannot be guaranteed, the impact to roadway segments is considered to be significant and unavoidable.	
Impact TR-3: Traffic from future development in the Plan area would increase traffic volumes on local freeway segments. (Less than Significant)	None required.	Less than Significant
Impact TR-4: Transit ridership generated by future development in the Plan area would affect transit operations. (Less than Significant)	None required.	Less than Significant
Impact TR-5: Future development in the Plan area would affect pedestrian and bicycle operations and safety. (Less than Significant)	None required.	Less than Significant
Impact TR-6: Development under the Plan area would affect parking supply in the downtown, but would not result in inadequate parking capacity. (Less than Significant)	None required.	Less than Significant
Impact TR-7: Cumulative development, along with development in the Plan area, would adversely affect operation of local intersections. (Significant)	*El Camino Real and Glenwood Avenue/Valparaiso Avenue* **Mitigation Measure TR-7a:** The project applicant(s) shall contribute fair-share funding towards the following improvements at the intersection of El Camino Real and Glenwood Avenue/Valparaiso Avenue included in the City's Transportation Impact Fee program: • Add a westbound right-turn lane; and • Modifying the westbound approach to a left-turn lane, a through lane, and a right-turn lane. These modifications would improve overall vehicular operations of this state-controlled intersection to LOS D in the p.m. peak hour under Cumulative Plus Project Conditions. This geometric modification would reduce the cumulative impact to a less-than-significant level. The additional westbound right-turn lane will increase the crosswalk distance and duration of pedestrian and bicyclist exposure to motor vehicle traffic. This lane would also require ROW acquisition on the north side of Glenwood Avenue. In addition, the intersection modification would require coordination with, and approval by, Caltrans. Because of these constraints, and because the mitigation measure is not in the control of the City to implement, the impact is considered to be significant and unavoidable.	Significant and Unavoidable (El Camino Real and Glenwood Avenue/Valparaiso Avenue)

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS, MITIGATION MEASURES AND RESIDUAL IMPACTS

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
4.13 Transportation, Circulation and Parking (cont.)		
Impact TR-7 (cont.)	*El Camino Real and Menlo Avenue/Ravenswood Avenue* **Mitigation Measure TR-7b:** The individual project applicant(s) shall contribute fair-share funding towards the following improvements at the intersection of El Camino Real and Menlo Avenue/Ravenswood Avenue: • Add a second southbound left-turn lane; • Modifying the southbound right-turn lane to a shared through/right-turn lane; • Create a southbound receiving lane; • Add a third northbound through lane; • Add an eastbound left-turn lane, an eastbound right-turn lane, and modify the eastbound approach to one left-turn lane, two through lanes, and one right-turn lane; and • Change the signal phasing on the eastbound and westbound approaches from split phasing to protected left-turn phasing. This mitigation would not reduce the average intersection delay to an acceptable level of service. However, these improvements reduce the increase in average critical movement delay to less than 0.8 seconds, thereby reducing this impact to a less-than-significant level. All modifications are identified in the City's TIF program, except adding the third northbound through lane, which has been identified as mitigation for other pending development projects in the city. The additional southbound left-turn lane, northbound through lane, and eastbound lanes would increase the crosswalk distances and duration of pedestrian and bicyclist exposure to motor vehicle traffic. Also, the addition of the eastbound turn lanes could require ROW acquisition and parking space removal along Menlo Avenue. The second southbound left-turn and third northbound through lanes would require ROW acquisition on the east side of El Camino Real. Converting the southbound right-turn lane to a shared through/right-turn lane and adding the southbound receiving lane may require parking removal. In addition, the intersection modification would require coordination with, and approval by, Caltrans. Because of these constraints, and because the mitigation measure does not completely mitigate the impact, and the mitigation measure is not in the control of the City to implement, the impact is considered to be significant and unavoidable.	Significant and Unavoidable (El Camino Real and Menlo Avenue/Ravenswood Avenue)
	Laurel Street and Ravenswood Avenue **Mitigation Measure TR-7c:** The individual project applicant(s) shall contribute fair-share funding towards the following improvement at the intersection of Laurel Street and Ravenswood Avenue identified in the City's TIF program: • Add an eastbound right-turn lane. This modification would improve the p.m. peak-hour level of service to LOS D under Cumulative plus Project conditions. The additional eastbound lane would increase the crosswalk distance and duration of pedestrian and bicyclist exposure to motor vehicle	Significant and Unavoidable (Laurel Street and Ravenswood Avenue)

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS, MITIGATION MEASURES AND RESIDUAL IMPACTS

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
4.13 Transportation, Circulation and Parking (cont.)		
Impact TR-7 (cont.)	traffic. Also, the addition of the eastbound right-turn lane would require ROW acquisition and tree removal along Ravenswood Avenue, the precise feasibility of which cannot be determined until detailed project design is completed. Because of these constraints and uncertainties, the impact is considered to be significant and unavoidable.	
	University Drive (North) and Santa Cruz Avenue **Mitigation Measure TR-7d:** Implement Mitigation Measure TR-1a (contribute fair-share funding towards signalization of the intersection of University Drive (North) and Santa Cruz Avenue [when investigation of the full set of traffic signal warrants indicate that signalization is warranted] and interconnection of the new signal with the existing signal at the University Drive (South) and Santa Cruz Avenue). With Mitigation TR-1a, the intersection improves the level of service to LOS C during the a.m. peak hour under Cumulative Plus Project Conditions, and the impact would be reduced to a less-than-significant level. This improvement is not in the City's TIF. Therefore, the City could consider adding it to the TIF. Without a funding mechanism, this impact is considered to be significant and unavoidable.	Significant and Unavoidable (University Drive (North) and Santa Cruz Avenue)
	Middlefield Road and Marsh Road **Mitigation Measure TR-7e:** The individual project applicant(s) shall contribute fair-share funding towards the following improvements at the intersection of Middlefield Road and Marsh Road: • Add a second westbound left-turn lane; and • Provide a second receiving lane on the southern leg of the intersection. This modification would improve the level of service to LOS D during the p.m. peak hour. However, the modification would increase the crosswalk distance and duration of pedestrian and bicyclist exposure to motor vehicle traffic. Also, the addition of the westbound left-turn lane and associated receiving lane may require ROW acquisition and tree removal along both Middlefield Road and Marsh Road. In addition, the intersection is under the City of Atherton's jurisdiction. Because of these constraints, and because the mitigation measure is not in the control of the City to implement, the impact is considered to be significant and unavoidable.	Significant and Unavoidable (Middlefield Road and Marsh Road)
	Middlefield Road and Glenwood Avenue/Linden Avenue **Mitigation Measure TR-7f:** Implement Mitigation Measure TR-1b (contribute fair-share funding towards signalization of the intersection of Middlefield Road and Glenwood Avenue/Linden Avenue [when investigation of the full set of traffic signal warrants indicate that signalization is warranted]). With Mitigation TR-1b, the intersection improves the level of service to LOS B and LOS C during the a.m. and p.m. peak hour, respectively under Cumulative Plus Project Conditions, and the impact would be reduced to a less-than-significant level.	Significant and Unavoidable (Middlefield Road and Glenwood Avenue/Linden Avenue**)**

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS, MITIGATION MEASURES AND RESIDUAL IMPACTS

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
4.13 Transportation, Circulation and Parking (cont.)		
Impact TR-7 (cont.)	However, as noted in the discussion of Mitigation TR-1b, this intersection is under the City of Atherton's jurisdiction, therefore the City cannot guarantee its implementation and the impact remains significant and unavoidable.	
	Middlefield Road and Ravenswood Avenue **Mitigation Measure TR-7g:** The individual project applicant(s) shall contribute fair-share funding towards the following improvements at the intersection of Middlefield Road and Ravenswood Avenue, as identified in the City's TIF program: • Add a southbound right-turn lane; and • Modify the approach to a through lane and a right-turn lane. These modifications would improve the level of service to LOS D during both the a.m. and p.m. peak hours. The addition of the southbound right-turn lane may require ROW acquisition and tree removal along Ravenswood Avenue, the precise feasibility of which cannot be determined until detailed project design is completed. Because of these constraints and uncertainties, the impact is considered to be significant and unavoidable.	Significant and Unavoidable (Middlefield Road and Ravenswood Avenue)
	Middlefield Road and Linfield Drive **Mitigation Measure TR-7h:** The individual project applicant(s) shall contribute fair-share funding towards the following improvement at the intersection of Middlefield Road and Linfield Drive: • Signalization when investigation of the full set of traffic signal warrants indicate that signalization is warranted. Signalizing the intersection of Middlefield Road and Linfield Drive would improve the level of service to LOS B during the a.m. peak hour and LOS C during the p.m. peak hour under Cumulative Plus Project conditions. Therefore, the impact would be reduced to a less-than-significant level, if the City could guarantee its implementation. This improvement is not in the City's TIF. Therefore, the City could consider adding it to the TIF. Without a funding mechanism, this impact is considered to be significant and unavoidable. This intersection meets peak-hour warrants. However, as mentioned previously, the peak-hour signal warrant analysis should not serve as the only basis for deciding whether and when to install a signal. To reach such a decision, the full set of warrants should be investigated based on a thorough study of traffic and roadway conditions. The decision to install a signal should not be based solely upon the warrants, because the installation of signals can lead to certain types of collisions. Regular monitoring of actual traffic conditions and accident data, and timely re-evaluation of the full set of warrants should be considered to prioritize and program intersections for signalization.	Significant and Unavoidable (Middlefield Road and Linfield Drive)

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS, MITIGATION MEASURES AND RESIDUAL IMPACTS

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
4.13 Transportation, Circulation and Parking (cont.)		
Impact TR-7 (cont.)	*Middlefield Road and Willow Road* **Mitigation Measure TR-7i.1:** Implement Mitigation Measure TR-1c (contribute fair-share funding towards adding a second westbound left-turn lane; modifying the westbound approach to two left-turn lanes, one through lane, and one right-turn lane; and changing the signal phasing on the eastbound and westbound approaches from split phasing to protected left-turn phasing at the intersection of Middlefield Road and Willow Road, as identified in the City's TIF program). These improvements are identified in the City's TIF program and would reduce the average intersection delay to an acceptable level. However, the improvements may not be feasible due to ROW acquisition needs (constrained by the presence of buildings). Therefore, the impact is considered to be significant and unavoidable.	Significant and Unavoidable (Middlefield Road and Willow Road)
	Middlefield Road and Willow Road **Mitigation Measure TR-7i.2:** In addition to Mitigation Measure TR-1c, the individual project applicant(s) shall contribute fair-share funding towards the following improvements at the intersection of Middlefield Road and Willow Road, as identified in the City's TIF program: • Add a second southbound left-turn lane; • Modify the southbound approach to two left-turn lanes, one through lane, and one through/right-turn lane; and • Change the signal phasing on the northbound and southbound approaches from split phasing to protected left-turn phasing. These improvements are identified in the City's TIF program and would reduce the average intersection delay to an acceptable level under Cumulative Plus Project Conditions. The additional southbound and westbound left-turn lanes would increase the crosswalk distance and duration of pedestrian and bicyclist exposure to motor vehicle traffic. Also, the addition of the left-turn lanes may require ROW acquisition. However, the improvements may not be feasible due to ROW acquisition needs. Because of these constraints, the impact is considered to be significant and unavoidable.	Significant and Unavoidable (Middlefield Road and Willow Road)
	Coleman Avenue and Willow Road **Mitigation Measure TR-7j:** The individual project applicant(s) shall contribute fair-share funding towards the following improvement at the intersection of Coleman Avenue and Willow Road: • Restripe the southbound approach to one left-turn lane and one through/right-turn lane. This modification would improve the level of service to LOS D during both the a.m. and p.m. peak hours.	Less than Significant (Coleman Avenue and Willow Road)

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS, MITIGATION MEASURES AND RESIDUAL IMPACTS

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
4.13 Transportation, Circulation and Parking (cont.)		
Impact TR-7 (cont.)	*Durham Street and Willow Road* **Mitigation Measure TR-7k:** The individual project applicant(s) shall contribute fair-share funding towards the following improvement at the intersection of Durham Street and Willow Road: • Add a southbound left-turn lane. This mitigation would not reduce the average intersection delay to an acceptable level. However, this improvement would reduce the increase in average critical movement delay to less than 0.8 seconds, thereby reducing this impact to a less-than-significant level. The addition of the southbound left-turn lane may require ROW acquisition and tree removal along the VA Hospital Driveway, which is not under the control of the City. Because of these constraints, and because the proposed mitigation measure would not reduce impacts to a level of insignificance, the impact is considered to be significant and unavoidable.	Significant and Unavoidable (Durham Street and Willow Road)
	Bay Road and Willow Road **Mitigation Measure TR-7l:** The individual project applicant(s) shall contribute fair-share funding towards the following improvement at the intersection of Bay Road and Willow Road: • Add a second southbound left-turn lane. This modification would improve the level of service to LOS C during the a.m. peak hour under Cumulative Plus Project conditions. The addition of the second southbound left-turn lane may require ROW acquisition and tree removal. Because of these constraints, the impact is considered to be significant and unavoidable.	Significant and Unavoidable (Bay Road and Willow Road)
	Orange Avenue/Santa Cruz Avenue and Avy Avenue/Santa Cruz Avenue **Mitigation Measure TR-7m:** Implement Mitigation Measure TR-1d (contribute fair-share funding towards signalization of the intersection of Orange Avenue/Santa Cruz Avenue and Avy Avenue/Santa Cruz Avenue, when investigation of the full set of traffic signal warrants indicate that signalization is warranted). Signalizing the intersection of Orange Avenue/Santa Cruz Avenue and Avy Avenue/ Santa Cruz Avenue would improve the level of service to LOS C during both the a.m. and p.m. peak hours under Cumulative Plus Project conditions. Therefore, the impact would be less than significant level, if the City can guarantee its implementation. This improvement is not in the City's TIF. Therefore, the City could consider adding it to the TIF. Without a funding mechanism, this impact is considered to be significant and unavoidable.	Significant and Unavoidable (Orange Avenue/Santa Cruz Avenue and Avy Avenue/Santa Cruz Avenue)

TABLE 2-1 (Continued)
SUMMARY OF IMPACTS, MITIGATION MEASURES AND RESIDUAL IMPACTS

Environmental Impact	Mitigation Measures	Level of Significance after Mitigation
4.13 Transportation, Circulation and Parking (cont.)		
Impact TR-7 (cont.)	**Mitigation Measure TR-7n:** The individual project applicant(s) shall contribute fair-share funding towards the following improvements at the intersection of El Camino Real and Middle Avenue: • Add a second northbound left-turn lane; • Add a westbound receiving lane; These improvements are identified in the City's TIF program and would improve overall vehicular operations of this state-controlled intersection to LOS D under Cumulative Plus Project Conditions. The additional northbound left-turn lane and second westbound receiving lane will increase the crosswalk distance and duration of pedestrian and bicyclist exposure to motor vehicle traffic. This lane would also require ROW acquisition along Middle Avenue. In addition, the intersection modification would require coordination with, and approval by, Caltrans. Because of these constraints, and because the mitigation measure is not in the control of the City to implement, the impact is considered to be significant and unavoidable.	Significant and Unavoidable
Impact TR-8: Cumulative development, along with development in the Plan area would adversely affect operation of local roadway segments. (Significant)	**Mitigation Measure TR-8:** Implement TR-2 (TDM Program).	Significant and Unavoidable
Impact TR-9: Cumulative development, along with development in the Plan area would increase traffic volumes on local freeway segments. (Less than Significant)	None required.	Less than Significant

CHAPTER 3
Project Description

This chapter includes a detailed description of the proposed Plan, which is the Menlo Park El Camino Real/Downtown Specific Plan ("Specific Plan" or "Plan"). Specifically, this chapter describes the existing characteristics of the Plan area, the objectives and key characteristics of the Plan, and approvals required to implement the Specific Plan.

3.1 Project Objectives

The overall focus of the Specific Plan was first established in the El Camino Real/Downtown Vision Plan unanimously accepted by the Menlo Park City Council on July 15, 2008. The Vision Plan established twelve goals that define the overall intent of the El Camino Real/Downtown Specific Plan to enhance community life, character and vitality through mixed-use infill projects sensitive to the small-town character of Menlo Park and to improve connections across El Camino Real over the next 30 years, as expressed in twelve goals. The goals were subsequently used to inform and guide the preparation of the El Camino Real/Downtown Specific Plan and are embraced in the Specific Plan as guiding principles. The goals and guiding principles are listed below and together establish the project objectives.

The Vision Plan established the following twelve goals:

- Maintain a village character unique to Menlo Park.
- Provide greater east-west town-wide connectivity.
- Improve circulation and streetscape conditions on El Camino Real.
- Ensure that El Camino Real development is sensitive to and compatible with adjacent neighborhoods.
- Revitalize underutilized parcels and buildings.
- Activate the train station area.
- Protect and enhance pedestrian amenities on Santa Cruz Avenue.
- Expand shopping, dining and neighborhood services to ensure a vibrant downtown.
- Provide residential opportunities in the Vision Plan area.
- Provide plaza and park spaces.
- Provide an integrated, safe, and well-designed pedestrian and bicycle network.
- Develop parking strategies and facilities that meet the commercial and residential needs of the community.

Based on the goals of the Vision Plan, the Specific Plan was formulated with the following five "guiding principles":

- Generate Vibrancy;
- Strengthen the Public Realm;
- Sustain Menlo Park's Village Character;
- Enhance Connectivity; and
- Promote Healthy Living and Sustainability.

The Specific Plan includes policies intended to guide new development over the next 30 years. Implementation of the Specific Plan would require amendments to the Menlo Park General Plan ("General Plan") and to the City of Menlo Park Zoning Ordinance. These amendments are included as a part of, and would be adopted concurrently with, the Specific Plan. Upon adoption, the objectives and policies contained within the Plan would supersede goals and policies in the General Plan with respect to the Plan area.

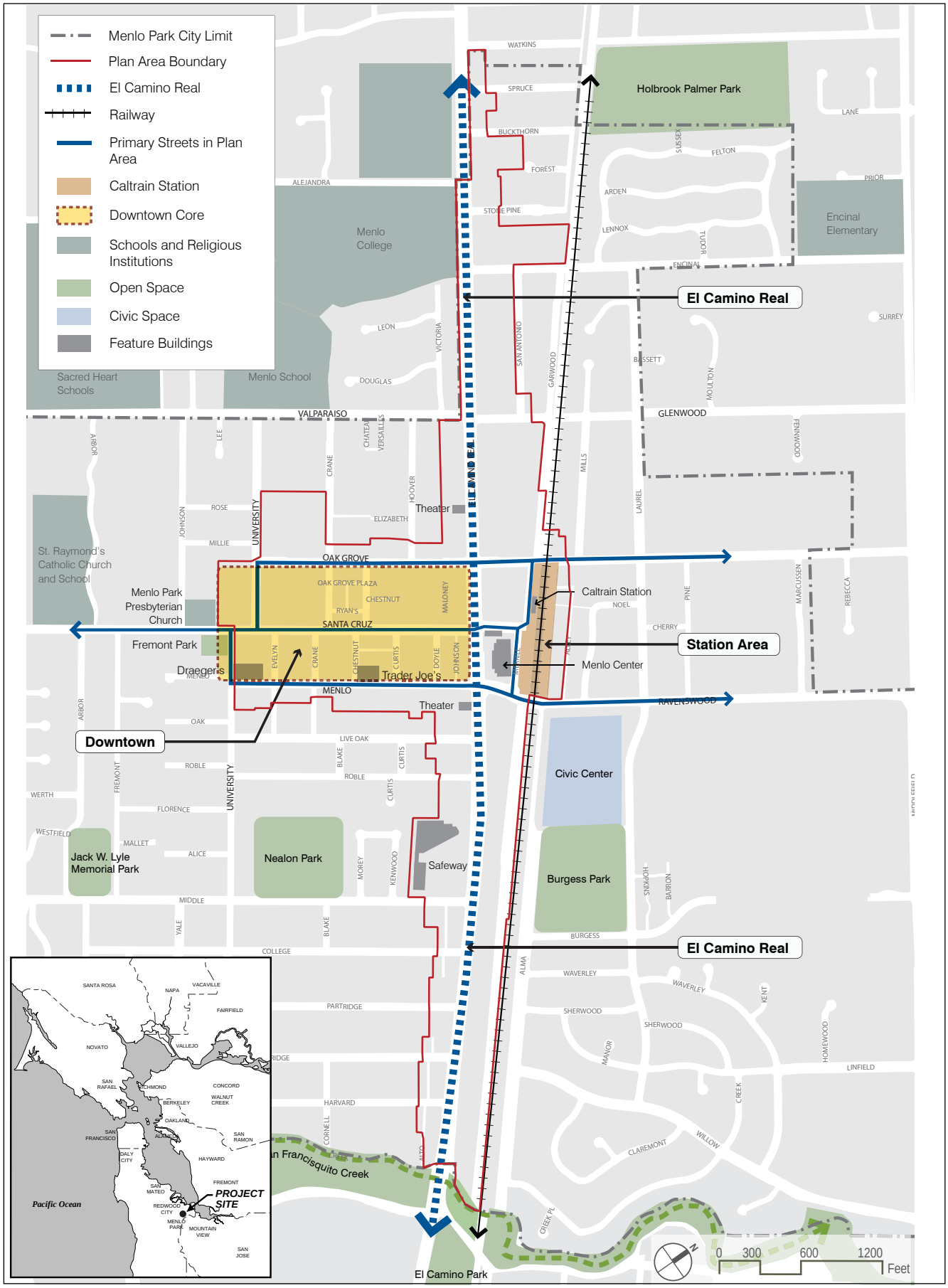
3.2 Location and Setting

3.2.1 Regional Setting

The City of Menlo Park is located approximately 30 miles south of San Francisco on the San Francisco Peninsula. **Figure 3-1** shows the location of the Plan area. Menlo Park has approximately 30,000 residents and is a part of a string of communities connected to San Francisco and San Jose via El Camino Real, Caltrain rail service and Interstate Highways 101 and 280.

The City of Menlo Park street grid is offset from exact compass directions. For the purposes of this discussion, streets that run relatively parallel to El Camino Real and the Caltrain tracks are described as running north (toward San Francisco) and south (toward San Jose). Similarly, streets that run relatively parallel to Santa Cruz Avenue and San Francisquito Creek are described as running east (toward the San Francisco Bay) and west (toward the Santa Cruz Mountains). The location of uses, buildings, and views are similarly described according to these directions.

The Specific Plan area is located along the length of El Camino Real within the City limits. It extends east to the Caltrain right-of-way and around the Caltrain Menlo Park Station to Alma Street, and it extends west along Oak Grove Avenue, Santa Cruz Avenue and Menlo Avenue to approximately University Drive. El Camino Real is designated as State Route (SR) 82, under California Department of Transportation (Caltrans) jurisdiction, and is one of the primary arterial roadways and commercial corridors of the San Francisco Peninsula. Caltrain is the major commuter rail line serving the San Francisco Peninsula, and it connects Menlo Park with San Francisco to the north and San Jose and Gilroy to the south. The Peninsula Corridor Joint Powers Board has jurisdiction over the Caltrain right-of-way. The California High Speed Rail (HSR) Authority is in the planning stages of constructing a HSR system, part of which would follow the Caltrain right-of-way connecting San Francisco and San Jose.



SOURCE: City of Menlo Park; Perkins + Will

Figure 3-1
Specific Plan Location Map

3.2.2 Local Setting

The Specific Plan area covers approximately 130 acres and includes the El Camino Real corridor, one of Menlo Park's most prominent corridors, the Caltrain station area, and the City's downtown core centered on Santa Cruz Avenue.

In addition, the Menlo Park Civic Center, which houses the local government buildings and Burgess Park, is located southeast of downtown, on the east side of the Caltrain right-of-way. Residential neighborhoods and institutional uses are also adjacent to the Specific Plan area.

Existing General Plan and Zoning

The General Plan includes land use designations applicable to the Plan area. Specifically, the downtown area of the Plan area falls within the Retail/Commercial land use designation. The majority of the properties along El Camino Real within the Plan area fall within the El Camino Real Professional/Retail Commercial land use designation. Some properties within the Plan area are designated Professional and Administrative Office and others are designated Medium Density Residential uses.

Surrounding the Plan area, properties are designated for Medium- and Low-Density Residential land use, as well as for Professional and Administrative Office land use. Properties in the Civic Center are designated for Public Facility land use.

The Plan incorporates changes to the existing zoning and land uses in the Plan area, and could affect the ratio of commercial uses to residential uses as well as change maximum building heights in the Plan area. All relevant aspects of the General Plan, Zoning Ordinance, and other applicable land use regulations, are discussed in detail in Section 4.9, *Land Use and Planning Policy*, in Chapter 4.

3.3 Specific Plan Characteristics

Building on the Vision Plan, the Specific Plan acknowledges the community's desire for a more active, vibrant downtown and station area, with a mix of uses that complement and support each other and bring vitality to the area, while still maintaining a village character.

The Plan focuses on creating new connected nodes of activity and social life that contribute to a renewed vibrancy with an integrated network of public spaces, including widened sidewalks, that invite strolling and public gathering and afford community life, identity, and sense of place. The Plan builds upon the unique qualities of El Camino Real and downtown, in particular the small town character of low-scale, diverse and local neighborhood-serving businesses, and the Plan accommodates future development in ways that complement the area's existing character.

The Plan integrates downtown, the station area and the Civic Center through sidewalk improvements at El Camino Real and widened sidewalks on Santa Cruz Avenue and Alma Street. The planned California HSR project—a separate project—provides the opportunity for new and

improved grade-separated pedestrian/bicycle crossings of the railroad tracks. The Plan provides a north-south connection with wider and more comfortable sidewalks on the east side of El Camino Real.

The Plan encourages walking, biking, and access to transit as alternate mobility modes, taking a comprehensive approach to sustainability and carbon emissions, utilizing best practices integrated with guidelines for both public and private improvements.

3.3.1 Specific Plan Area

The Plan area is easily accessible to transit, is pedestrian and bicycle friendly in many places, and has a mix of uses. The Plan seeks to build on the proximity of the downtown to the Caltrain station and the existing densities in the Plan area, on the basis that such transit access and walking and biking potential can allow for increased density and infill development with less new automobile traffic compared to similar amounts of development in other locations or areas not served by transit. The Plan also recognizes that the plans for HSR could provide opportunities to improve east-west connectivity. The grade separation required for the HSR project would eliminate at-grade crossings that currently exist at four locations within the Plan area. The grade separations would improve traffic operations at El Camino Real as well as provide an opportunity for a bicycle/pedestrian path improving north-south connectivity in the Plan area without forcing riders onto El Camino Real. However, it should be noted that the HSR grade separations have the potential for negative effects, depending on their final design and implementation.

3.3.2 Circulation Overview

The Specific Plan provides an overview of the existing policy context and transportation conditions as well as opportunities for improvements. Regarding the policy context, there are a number of agencies whose policies have applicability to the Specific Plan area. However, primary jurisdiction over the circulation system is with Caltrans for El Camino Real and the City of Menlo Park for the rest of the Plan area. A more detailed discussion of the policy context as well as the current traffic conditions is provided in Section 4.13, *Transportation, Circulation and Traffic*, of this EIR.

Menlo Park currently has relatively short and discontinuous north-south and east-west roadways. This layout creates circuitous traffic routes within the City. Traffic congestion in the Plan area occurs primarily along El Camino Real and its intersections, with the highest levels of congestion occurring during the morning and evening peak commute hours.

Pedestrian and bicycle facilities offer attractive alternative modes of travel in the city, reflected by the fact that nearly six percent of work trips are made by bicycle or on foot in Menlo Park, well above both state and national averages. While pedestrian and bicycle accommodations are provided throughout much of the City, El Camino Real and the Caltrain tracks serve as a barrier to east-west travel. Further, there are discontinuities in the sidewalk system leading into the downtown area, and there are discontinuities in the bicycle network for north-south travel.

Transit service is provided by San Mateo County Transit District (SamTrans), Caltrain, and City of Menlo Park shuttles. HSR, which is in the planning stages, would pass through Menlo Park along the Caltrain right-of-way. HSR would be grade-separated at roadway intersections.

Parking in the Plan area is a mix of on-street spaces and off-street spaces in public and private parking lots. The downtown area has over 1,500 free public parking spaces, although many of the spaces have time restrictions, and a number of spaces can be occupied all day by paid parking permit holders. The peak parking demand occurs mid-day on weekdays, when about 80 percent of the available on- and off-street spaces are occupied, according to the 2010 Downtown Menlo Park Parking Study. The City's Municipal Code specifies minimum parking requirements for private development that are higher than average when compared to neighboring jurisdictions.

The Specific Plan looks at potential opportunities, such as the existing network of transit, pedestrian and bicycle facilities, mix of uses in the downtown, proximity of downtown to the Caltrain station, large city-owned parking plazas in the Plan area, and grade-separation of the HSR tracks, to improve circulation within the Plan area. There is also an opportunity to reduce the minimum parking requirements for some types of developments to account for the accessibility of the downtown to non-automobile users and the potential for shared parking.

3.3.3 Market Overview

Based on an examination of major demographic, economic and market conditions, the Specific Plan provides an overview of the mid- to long-term potential for residential, retail, office, and hotel and conference space uses in the Plan area.

Residential Uses

The Plan area is located near employment centers, regional transportation options, educational institutions, and the downtown retail core. The availability of nearby services and amenities are likely to attract single professionals, students, small families and seniors. These different household types demand a wide range of housing types, including small-lot single-family homes, townhouses, condominiums, and rental apartments.

While demand for a variety of housing types is strong, the Plan recognizes that location would determine the type of housing likely to be built. According to the Plan, properties along El Camino Real are better suited to higher-density housing, while properties facing residential streets parallel to El Camino Real are better suited to townhouses and small-lot single-family homes. Properties near the Caltrain station are ideal locations for higher-density, transit-oriented development, and properties within the downtown may be suitable for medium-density apartments, condominiums, and townhouses at a scale that is sensitive to the downtown village character.

Retail Market

The Plan area comprises two distinct retail districts. Downtown Menlo Park is a pedestrian-oriented shopping district that has evolved over time to include a range of independent retailers, including

grocery stores, home furnishings stores, women's apparel, specialty retail and restaurants. El Camino Real is geared toward more destination-oriented retailers that benefit from convenient auto access, strong linkage to other communities on the Peninsula, strong demographics, good visibility, and high traffic counts, which are desirable to many national and regional retailers, such as those at the Safeway Shopping Center. However, many lot dimensions on El Camino Real, particularly on the west side of the corridor, are challenging for standard retail configuration and parking ratios.

Office Market

The Plan states that Menlo Park is a desirable location for office uses due to its central location on the Peninsula and good access to major highways and bridges. Stanford University, the venture capital industry and the local residential population base are the primary source of demand for office space, attracting small and mid-size companies in real estate, venture capital, attorneys, and medical/dental, as well as high-tech and internet companies.

In the short-term, there is demand for additional medical office space in the Plan area because some medical buildings would be demolished as part of the new Stanford Medical Center. Demand for medical office space is slightly higher in the downtown area than El Camino Real due to the pedestrian environment and retail amenities. However, there is some community concern with medical office uses in the Plan area since they can generate a higher number of trips than non-medical offices, but typically do not have the same potential for revenue. In the mid- to long-term, there would likely be demand for additional office space in the Plan area. Proximity to Caltrain and the walkability and amenities of downtown are significant draws for office tenants.

Hotel Market

The Plan states that the El Camino Real corridor is well-positioned to attract a conference hotel because of its proximity and access to Stanford University, Sand Hill Road businesses, and the Silicon Valley region. The downtown is more appropriate for a small "boutique" hotel because of its pedestrian friendly environment, amenities, and services. Given trends in occupancy rates, room rates, and overnight visits in the Plan area, there is demand for one conference hotel by 2015 and a smaller boutique hotel in the mid- to long-term from 20 to 30 years.

3.3.4 Specific Plan Standards and Guidelines

The Plan proposes standards and general guidelines for development and public open space that would apply to the overall Plan area, and encourage sustainable practices. These standards and guidelines are based on the guiding principles for the Specific Plan, which were developed from the Phase I Vision Plan. The guiding principles are to enhance public space, generate vibrancy, sustain Menlo Park's Village character, enhance connectivity, and promote healthy living and sustainability.

Standards are the rules that new development is required to follow. Standards set the basic framework within which new development takes place, regulating building placement, size and height through objective and measureable rules. Guidelines serve to encourage features of good

design and may include elements that are not as easily defined or measured but are essential to creating an overall character within the Specific Plan area. Standards and guidelines are both critical elements in the review of new development. Development projects would be required to adhere to applicable standards, while consistency with applicable guidelines would be a key component of the discretionary review of a development proposal.

The five guiding principles on which the standards and guidelines are based are described in more detail below.

Enhance Public Space: The Specific Plan would create an integrated network of public spaces that includes widened sidewalks, plazas, and parks that invite strolling, public gathering, and allows for community life, identity and sense of place. The Plan would support a more active and vibrant downtown and healthier living by encouraging walking, biking, and social gathering.

Generate Vibrancy: The Specific Plan would encourage a mix of retail, residential and office uses that complement each other to bring vitality and increased retail sales to the area. Further, the Plan would encourage development of underutilized and vacant land on El Camino Real while ensuring a building character that is modulated and in keeping with Menlo Park's small-town character.

Sustain Menlo Park's Village Character: The Specific Plan would build upon the unique qualities of downtown Menlo Park and El Camino Real, in particular its small town character of lower-scale buildings and diverse and local neighborhood-serving businesses. The Plan would regulate building form and scale of future development by using design controls and guidelines to complement the area's existing character.

Enhance Connectivity: The Specific Plan would integrate downtown, the Caltrain station area, and the Civic Center with widened sidewalks on Santa Cruz Avenue, Alma Street and El Camino Real. The Plan would encourage crosswalk and sidewalk improvements, and new grade-separated pedestrian and bicycle crossings of the railroad tracks to improve east-west connectivity.

Promote Healthy Living and Sustainability: The Specific Plan promotes healthy living and activity by encouraging walking, biking, and access to transit as alternatives to vehicular use supported by widened sidewalks and inviting public spaces. The Plan would encourage a comprehensive approach to sustainability and carbon emissions reduction, using standards and best practices integrated with guidelines for public and private improvements.

3.3.5 Urban Design Framework

Expanding on the Plan's guiding principles the urban design framework introduces the general approach for the Plan area. The urban design framework emphasizes the following elements: distinct and connected areas, integrated corridor, walking and connected community, sensitive infill and living downtown, and mobility options and accessibility. It also establishes concepts for the Plan's three principal sub-areas: El Camino Real, station area, and downtown, as described below.

El Camino Real

The concept for this sub-area enhances overall street character, east-west connection opportunities and pedestrian safety and comfort by including additional street trees, median enhancements consistent with existing median treatments and sidewalk improvements at most crosswalks to improve pedestrian crossing of the corridor.

El Camino Real North: The concept for El Camino Real north of Oak Grove Avenue is for higher development intensities to support viable investment opportunities while keeping development character compatible with adjacent areas on both sides of the corridor. On the east side, the Plan enhances pedestrian comfort with wider sidewalks, using setback areas as needed. On the west side, guidelines for new construction address the existing character of narrow parcels and minimal setbacks, introducing the character of downtown to travelers from the north. Residential uses are encouraged closer to downtown and the station area.

El Camino Real/Downtown/Station Area: The concept for El Camino Real between Oak Grove Avenue and Menlo Avenue would reflect the higher intensity of the station area and the vibrancy of downtown. Buildings would have minimal setbacks and would address the street consistent with the downtown.

El Camino Real South: The concept for El Camino Real south of Menlo and Ravenswood Avenues recognizes the different conditions on the west and east side of the corridor. On the west side, development is compatible in scale of buildings and transition of building massing with the character of adjacent residential neighborhoods. On the east side, the concept takes advantage of larger parcel sizes and fewer property owners by requiring building breaks for additional street edge modification, variety and visual interest. The Specific Plan recognizes the provision of public open space as a feature that may be considered as a public benefit for purposes for obtaining a public benefit bonus development intensity. A building break that incorporates public open spaces and a grade-separated pedestrian/bicycle linkage across the railroad tracks to Burgess Park and Alma Street is required at Middle Avenue. Design guidelines would modulate building massing and complement the City's small-town character.

Station Area

The concept for the station area is to create a statement at the train station as an arrival point into the City. The Plan envisions a Civic Plaza with a vertical civic element, such as a sculpture or clock tower that would serve as a landmark for visitors and rail passengers at the terminus of Santa Cruz Avenue. The Civic Plaza would be a central public space and vehicular pickup and drop-off area. The concept also includes new higher intensity residential development, both to the west of the railroad tracks and along Alma Street to the east of the railroad tracks, to maximize transit use and to enhance the station area and downtown activity and vibrancy. Development would incorporate upper-story 45-degree building profiles to provide a sensitive transition to adjacent areas, and retail on the ground floors would activate key public spaces.

Downtown

The concept for downtown emphasizes the existing small-town character, ensuring a variety of public spaces and smaller-scale buildings complementary to the existing character of the area. The concept enhances the character and functionality of Santa Cruz Avenue and positions it for a successful future through wider sidewalks and a refreshed streetscape.

The concept includes improvements that include a Santa Cruz Avenue Central Plaza and market place, linked by a pedestrian paseo on Chestnut Street. The Central Plaza accommodates vehicular circulation, although it could be closed for special events. The market place functions in conjunction with the Santa Cruz Avenue Central Plaza and the weekly Farmer's Market and complements the established grocers in the area.

The concept envisions modifying the two existing parking plazas west of the marketplace into "flex space" which accommodates parking as it exists today as well as larger temporary events such as the Farmer's Market, evening movie screenings and summer art and community festivals. On the north side of downtown, two pocket parks, which serve as gateways to Santa Cruz Avenue Central Plaza and the center of downtown, provide places to sit and relax. Improved sidewalks would provide additional access from public parking areas and connectivity between key public spaces. Bicycle parking facilities at key locations would encourage use of alternative transportation and access to downtown.

The concept reinforces and enhances the overall tree canopy to provide shade and to mitigate for heat island effects. The concept retains the existing median trees in streetscape improvements on Santa Cruz Avenue.

3.3.6 Sustainability

The Specific Plan incorporates into its concepts and guidelines sustainability strategies reflected in the Leadership in Energy and Environmental Design (LEED) for Neighborhood Development (ND) rating system developed by the U.S. Green Building Council. These strategies are listed below.

- Reduction in automobile dependence by improving walkability, bicycle facilities and access to public transportation, and by providing a greater mix of uses.
- Bicycle network and storage by proposing an enhanced bicycle network and facilities downtown.
- Housing and job proximity by proposing infill development and encouraging residential mixed-use opportunities for living and working downtown.
- Walkable streets by proposing wider sidewalks, enhanced public spaces, overall streetscape improvements and active ground floor retail.
- Compact development by optimizing land made possible through encouragement of new infill development and higher intensity development.
- Reduced parking footprint by reducing the amount of space dedicated to surface parking, providing shared parking facilities and integrating parking within development footprints.

- Transit facilities by enhancing the train station area and encouraging transit use through increased development intensity.
- Tree lined and shaded streets by preserving the extensive existing canopy where possible and replacing or adding to current cover as public or private improvements occur.
- Certified green buildings by requiring certification for new buildings as well as retrofit of existing structures.
- Improve stormwater management with best practices and application of existing requirements for private developments as well as new public spaces and parks.
- Heat island reduction by reducing the amount of land dedicated to surface parking lots or by mitigating with tree canopy or other shading device, and by advocating green roofs through development guidelines.

3.3.7 Illustrative Plan and Development Program

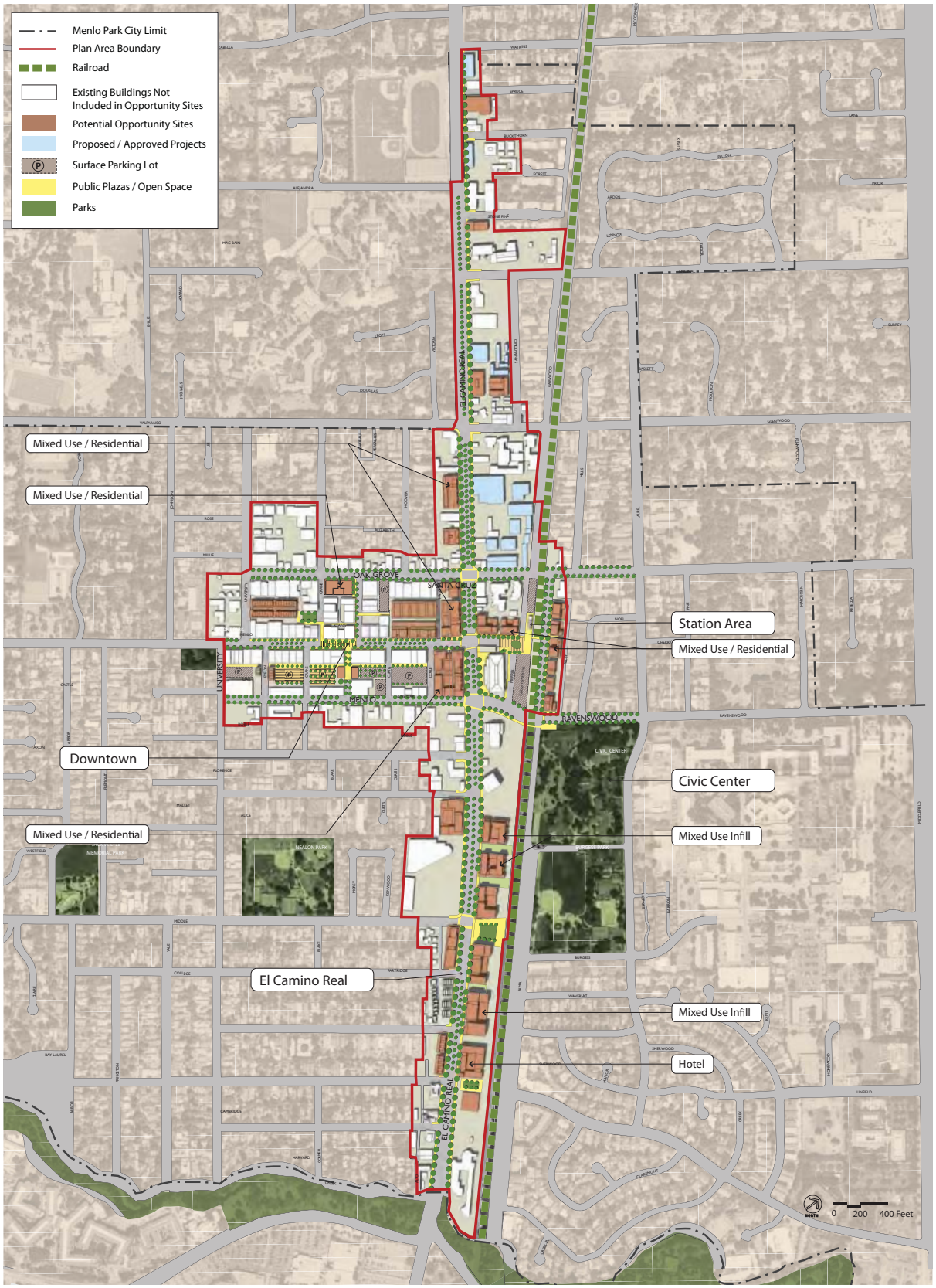
Figure 3-2 shows the Illustrative Plan of how the Plan area could potentially build out over the next 30 years in conformance with the guiding principles, urban design framework, and standards and design guidelines of the Specific Plan. The Plan permits development of up to 474,000 square feet of non-residential development and up to 680 dwelling units.

The precise location of development and the precise types of non-residential development that will result from the Specific Plan are necessarily uncertain. This EIR analyzes the maximum development resulting from Plan adoption and has reviewed the development that is the most reasonably foreseeable, as envisioned in the Illustrative Plan, based on studies of market demand, the location of opportunity sites, and assessment of the development potential of each property given the Guiding Principles, Urban Design Framework, land uses, development regulations, and design guidelines. The net new development analyzed includes:

Residences	680 dwelling units
Retail Space	91,800 square feet
Commercial Space	240,820 square feet
Hotel	380 rooms
Parking Spaces	3,670 spaces (public and private)
Resident Population	1,537
Employment	1,357 jobs[1]

Any proposal for development in excess of more than 680 residential units or more than 474,000 square feet of non-residential development after approval of the Specific Plan will require an amendment to the Specific Plan and concurrent environmental review. (See *Maximum Allowable Development* in Section 3.7.2 of this chapter.) In addition, the City will use an Initial Study to

[1] The Draft Menlo Park El Camino Real/Downtown Specific Plan contained an error in the number of new jobs which was corrected in the final Specific Plan. The corrected number of 1,357 new jobs has been used throughout the environmental evaluation contained in this EIR.



SOURCE: Perkins + Will

Menlo Park El Camino Real/Downtown Specific Plan EIR . 208581

Figure 3-2
Illustrative Plan

determine whether the effects of an individual development proposal were analyzed in this Program EIR. If the effects were not covered, further environmental review will be required.

3.4 Public Space Standards and Guidelines

The Specific Plan proposes a comprehensive public space and pedestrian/bicycle network that promotes safe and attractive pedestrian, bicycle and vehicular connections throughout. The key concepts for public space in the Plan area include:

- Connected and walkable downtown and station area;
- Green and shaded downtown and station area;
- Bicycle network and access downtown and in the station area; and
- El Camino Real and east-west connectivity.

Figure 3-3 is an illustration of the proposed public space improvements. The sections below describe the intent and character of the guidelines for the three sub-areas: downtown, station area, and El Camino Real. **Table 3-2**, at the end of this chapter, lists the standards, guidelines and policies for the Specific Plan.

3.4.1 Downtown

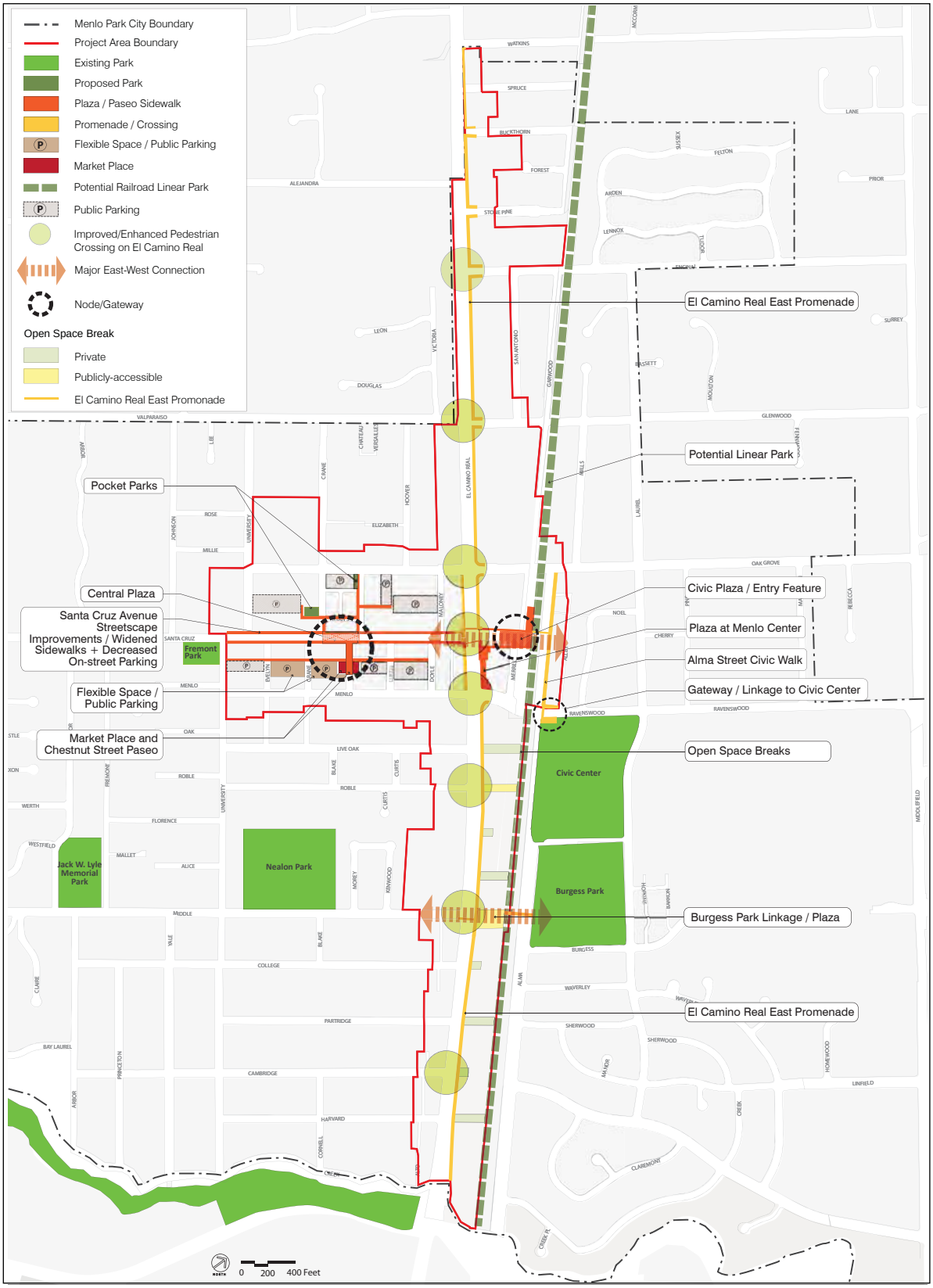
The plan establishes a recognizable center in downtown, which would be a central nexus of public spaces and locus of activity. This Central Plaza would be at the intersection of Santa Cruz Avenue and Chestnut Street. This central area, accompanied by an improved streetscape and widened sidewalks on Santa Cruz Avenue, elevates the character of downtown's "main street." The other public space improvements in downtown consist of:

- Chestnut Paseo;
- Marketplace;
- South Parking Plazas Pedestrian Link;
- Flexible Space/Parking;
- Crane Street and Chestnut Street/Oak Grove Avenue Pocket Parks; and
- Other Street/Alley Improvements.

Some of the public improvements discussed below, including the Santa Cruz Avenue sidewalks, Santa Cruz Avenue Central Plaza, and Chestnut Street Paseo and market place would be first done on a trial basis before moving forward with a permanent installation. The trial period is to be used as the basis for the review and evaluation of a permanent installation.

Santa Cruz Avenue Sidewalks

The Specific Plan calls for enhancing Santa Cruz Avenue for pedestrians by widening sidewalks and providing space for informal gathering, sitting, and outdoor dining. The intent is to encourage walking and increase levels of street activity with wider, more functional sidewalks and to renew



SOURCE: Perkins + Will

Menlo Park El Camino Real/Downtown Specific Plan EIR . 208581

Figure 3-3
Public Space Framework

the image of downtown with updated streetscape elements. To achieve this, the Plan envisions a tree canopy with clear visibility to storefronts and retaining the median trees, which are iconic features of downtown. Other improvements would include:

- On the side with diagonal parking, replace the diagonal parking with parallel parking, narrow travel lane and widen sidewalk;
- On the side with parallel parking, retain parallel parking, narrow travel lane and widen sidewalk;
- Integrate street trees into on-street parking zones, particularly where sidewalks are narrowest; and
- Upgrade streetscape elements, such as benches, seating, trash receptacles, newspaper racks, paving, and street lighting.

Standard D.2.01 and Guidelines D.2.01 through D.2.15 of the Specific Plan (listed in Table 3-2 at the end of this chapter) would apply to all private and public development on Santa Cruz Avenue sidewalks.

Santa Cruz Avenue Central Plaza

The Specific Plan envisions the Santa Cruz Avenue Central Plaza as a central public space on Santa Cruz Avenue between Chestnut Street and Crane Street. The street would remain open to traffic but on-street parking would be removed to make room for wider sidewalks. As desired, this portion of Santa Cruz Avenue could be closed to traffic for special events. The intent for this Plaza is to provide a central and distinctive public space located in the central portion of Santa Cruz Avenue. The Plaza would be used as a public gathering space and would accommodate ample seating.

Guidelines D.2.16 through D.2.22 of the Specific Plan (listed in Table 3-2 at the end of this chapter) would apply to the design of the Santa Cruz Avenue Central Plaza.

Chestnut Street Paseo

The Specific Plan proposes converting the northerly portion of Chestnut Street south of Santa Cruz Avenue into a pedestrian paseo extending the Santa Cruz Central Plaza experience south toward the marketplace and flexible space/parking area. This area would be closed to regular traffic, providing space for temporary vendors, benches, additional landscaping and space functionality. The paseo would be accessible to emergency vehicles and would allow access to Parking Plazas 6 and 7 at the south end of Chestnut Street

Standard D.2.23 and Guidelines D.2.23 through D.2.29 of the Specific Plan (listed in Table 3-2 at the end of this chapter) would apply to the design of the Chestnut Street Paseo.

Marketplace

The Specific Plan envisions the market place, located at Parking Plazas 6 and 7, as a space that activates the center of downtown in conjunction with the Central Plaza, Chestnut Street Paseo, and the flexible space/parking area to increase foot traffic for downtown retailers. It would complement and not compete with the Farmer's Market and the nearby Trader Joe's and Draeger's grocery stores. The market place would consist of small scale pavilions or buildings for vendors, or a sheltered plaza related to the Farmer's Market and flexible space/parking area activities.

Standards D.2.30 through D.2.32 and Guidelines D.2.33 through D.2.37 of the Specific Plan (see Table 3-2 at the end of this chapter) would apply to the design and purpose of the market place.

South Parking Plazas Pedestrian Link

The Specific Plan envisions a safe, well-lit, and inviting tree-lined pedestrian promenade or pathway that would connect Parking Plazas 4 through 8 with rear store entries, as well as the marketplace, the Chestnut Street Paseo and other streets leading to Santa Cruz Avenue. The pedestrian promenade would adjust the parking layout and would affect some parking spaces.

Guidelines D.2.38 through D.2.43 of the Specific Plan (see Table 3-2 at the end of this chapter) would apply to the design and purpose of the pedestrian promenade.

Flexible Space/Parking Area (Parking Plazas 5 and 6)

The Specific Plan proposes improving Parking Plazas 5 and 6, which are two surface parking lots south of Santa Cruz Avenue and adjacent to the proposed Chestnut Street Paseo and the marketplace, to allow for more flexibility in their usage. These flexible spaces would continue to provide parking during most times, but they would also be used to stage special community events such as the existing Farmer's Market, festivals, and movie screenings. The Plan proposes to incorporate sustainable design strategies into the improvements of this area.

Guidelines D.2.44 through D.2.48 of the Specific Plan (see Table 3-2 at the end of this chapter) would apply to the design of the improvements to Parking Plazas 5 and 6.

Crane Street and Chestnut Street/Oak Grove Avenue Pocket Parks

The Specific Plan proposes two pocket parks to serve as a destination for pedestrians, both local residents and downtown shoppers. Their locations function as small gateways to downtown from the north side parking areas and streets. The intent of the pocket parks is to provide smaller, more intimate open spaces north of Santa Cruz Avenue as part of downtown's public space network. The parks would be green and shaded with predominantly softscape seating areas.

Guidelines D.2.49 through D.2.52 of the Specific Plan (see Table 3-2 at the end of this chapter) would apply to the design of the pocket parks.

Other Street/Alley Improvements

On the north side of Santa Cruz Avenue, the Specific Plan calls for enhanced and welcoming connections between the proposed parking garages, pocket parks, and Santa Cruz Avenue and the Santa Cruz Avenue Central Plaza. These improvements consist of the Chestnut Street connector, Crane Street connector and parking north pathways. The intent of these pathways is to provide clear and comfortable connections from the proposed parking garages and pocket parks on the north side of downtown to Santa Cruz Avenue and the Central Plaza. The improvements would include widening the Chestnut Street west sidewalk and the Crane Street east sidewalk leading to the pocket parks.

Guidelines D.2.53 through D.2.57 of the Specific Plan (see Table 3-2 at the end of this chapter) would apply to the design of these pedestrian corridors.

3.4.2 Station Area

The Specific Plan proposes improving the Caltrain Station area as a major arrival and departure point within Menlo Park. The Plan establishes a central Civic Plaza at the intersection of the east end of Santa Cruz Avenue and the Caltrain Station as a unifying public space that organizes surrounding spaces and pedestrian and vehicular traffic. Other major public improvements in this area include Menlo Center Plaza, Alma Street Civic Walk and Ravenswood Gateway, all of which support the centrality of the Civic Plaza and create stronger connections to the plaza and downtown.

Because the future configuration of the proposed HSR line within the Caltrain right-of-way is unknown, the Plan's concept for the station area is meant to be flexible, accommodating any rail track configuration, whether below-grade, at grade, or elevated.

The public space improvements in the station area consist of:

- Civic Plaza;
- Menlo Center Plaza;
- Alma Street Civic Walk;
- Ravenswood Gateway; and
- Railroad Tracks/HSR Open Space.

Civic Plaza and Santa Cruz Avenue

The Specific Plan proposes a Civic Plaza at the eastern end of Santa Cruz Avenue by the Caltrain station, to celebrate arrival at the City. This plaza would serve as a landmark space and gateway to downtown and Menlo Park, a pickup and drop-off point for motorists and transit users and a civic public space integrating the historic train station. The intent is to create an improved transit plaza and an iconic civic plaza for downtown. Improvements would include streetscape enhancements, iconic trees such as native oaks, and landscaping that creates a unique sense of civic space.

Standards D.3.01 and D.3.02 and Guidelines D.3.01 through D.3.11 of the Specific Plan (see Table 3-2 at the end of this chapter) would apply to the design of the Civic Plaza.

Menlo Center Plaza

The Specific Plan proposes improvements to Menlo Center Plaza that make the plaza more functional as a civic space. Because the plaza is on private property, the City would have limited influence on the improvements for this area. The intent is to improve treatment of Menlo Center Plaza and its connections with the station Civic Plaza and the Civic Center and emphasize the presence of Menlo Center Plaza on El Camino Real.

Guidelines D.3.12 through D.3.14 of the Specific Plan (see Table 3-2 at the end of this chapter) would apply to the improvements of the Menlo Center Plaza.

Alma Street Civic Walk

The Specific Plan proposes as part of the overall pedestrian network, a pedestrian pathway along Alma Street. This Alma Street Civic Walk would provide a comfortable and inviting pedestrian connection from the station area to the Civic Center and would help to increase the vitality of the station area and the downtown. The walk would be a tree-lined and safely lit.

Guidelines D.3.13 through D.3.20 of the Specific Plan (see Table 3-2 at the end of this chapter) would apply to the design of the Alma Street Civic Walk.

Ravenswood Gateway

The Specific Plan proposes creating a sense of gateway at the Ravenswood Avenue and Alma Street intersection into downtown and the Menlo Park Civic Center and Public Library areas. The improvements would focus on providing better definition of the southeast corner of the intersection as an identifiable entrance and front door to the library and Civic Center. Improvements would include providing streetscape and landscape improvements at the northeast and southeast corners of the Alma Street and Ravenswood Avenue intersection, providing a wider and safe pedestrian crossing coordinated with the Alma Street Civic Walk, and installing a landmark sign or art element.

Guidelines D.3.23 through D.3.28 of the Specific Plan (see Table 3-2 at the end of this chapter) would apply to the design of the Ravenswood Gateway.

Railroad Tracks/High Speed Rail Open Space

The future configuration of the proposed HSR line within the Caltrain right-of-way is unknown; however, the Specific Plan's proposed improvements would apply regardless of the final rail track configuration. It is assumed that HSR would generally fall within and follow the existing Caltrain right-of-way. Expansions of the right-of-way could be required, particularly in the Station Area, as well as between Glenwood Avenue and Oak Grove Avenue, where the current right-of-way is narrowest.

At this time, three rail track configurations for HSR are under consideration: locating the train tracks underground, elevating the railroad tracks, or keeping the tracks at grade and lowering the cross streets. All three configurations achieve a fundamental requirement that the tracks be grade-separated and completely separate from other trains and all other modes of transit (i.e., vehicular, bicycle and pedestrian). Under the current proposal, HSR would not stop at Menlo Park. However, Caltrain would continue to provide commuter rail service to Menlo Park. If HSR is placed in a tunnel, it is unclear at this time if Caltrain would also be placed in a tunnel, remain at-grade or have some other configuration.

Guidelines D.3.29 through D.3.32 of the Specific Plan (see Table 3-2 at the end of this chapter) would apply to improvements around the railroad tracks.

3.4.3 El Camino Real

The Specific Plan proposes enhancements that strengthen the image of the street and create a continuous and unified experience while recognizing the distinct areas that the corridor passes through. The improvements also create strong east-west linkages with surrounding areas and districts. The proposed enhancements are consistent with the *Grand Boulevard Initiative's Multi-Modal Strategy & Context-Sensitive Design Guidelines*

The public space improvements for El Camino Real consist of:

- North-South Walkability; and
- East-West Connectivity.

North-South Walkability

The Specific Plan proposes streetscape improvements on El Camino Real that help unify the street experience by using trees, paving materials and lighting elements. It provides a pedestrian promenade on the eastern side of the street. Pedestrian improvements to the portions of El Camino Real north of Oak Grove Avenue and south of Menlo/Ravenswood Avenue would be achieved in part, within setback areas as adjacent development occurs.

In the downtown/station areas, between Oak Grove Avenue and Menlo/Ravenswood Avenue, the Specific Plan calls for widening the sidewalks within setback areas as adjacent development occurs, while accommodating through traffic, bus turnouts and on-street parking and/or bicycle facilities, as needed. Improvements would include using building setbacks to create wider sidewalks and enhancing the sidewalks with consistent paving, street trees, and street furnishings.

Guidelines D.4.01 through D.4.05 of the Specific Plan (see Table 3-2 at the end of this chapter) would apply to the design of sidewalks along El Camino Real.

East-West Connectivity

El Camino Real Crossings

The Specific Plan proposes improvements for key intersections along El Camino Real and proposes improving crossing conditions at these locations. The intent is to minimize the El Camino Real barrier effect and improve connectivity across El Camino Real by improving pedestrian crossing conditions.

Guidelines D.4.06 through D.4.11 of the Specific Plan (see Table 3-2 at the end of this chapter) would apply to the design of sidewalks along El Camino Real.

Burgess Park Linkage/Open Space Plaza

The Specific Plan identifies two locations for publicly accessible open space and grade-separated pedestrian and bicycle linkage across the railroad tracks. One is in the station area at the terminus of Santa Cruz Avenue and the other is at the terminus of Middle Avenue. The latter connects the western neighborhoods with Burgess Park and neighborhoods to the east. The plaza at Middle Avenue provides additional open space to both the community and the private development. The Plan proposes that the open space plaza should integrate with both the pedestrian promenade along El Camino Real and linkages to the east side of the Caltrain tracks. Adjacent buildings should activate the plazas with ground floor uses, such as cafes and small stores.

Guidelines D.4.12 through D.4.17 of the Specific Plan (see Table 3-2 at the end of this chapter) would apply to the design of the open space plaza and the pedestrian/bicycle link at Middle Avenue.

3.4.4 General Guidelines

The Specific Plan proposes overarching guidelines for public space improvements in the Plan area. The intent of the guidelines, in part, is to establish a coordinated streetscape and open space system.

Guidelines D.5.01 through D.5.20 of the Specific Plan (see Table 3-2 at the end of this chapter) would apply to the design of all the open space elements of the Plan as described above.

3.4.5 Sustainable Practices

The Specific Plan proposes sustainable practices for public space improvements based on the Leadership in Energy and Environmental Design (LEED) for Neighborhood Development.

Guidelines D.6.01 through D.6.08 of the Specific Plan (see Table 3-2 at the end of this chapter) would apply to the design of all the open space elements of the Plan as described above.

3.5 Land Use and Building Character Standards and Guidelines

3.5.1 Land Use Designations

The Specific Plan proposes reclassifying the Plan area with five new land use designations:

- El Camino Real Mixed-Use
- El Camino Real Mixed-Use/Residential
- Downtown/Station Area Retail/Mixed-Use
- Downtown/Station Area "Main Street" Overlay
- Downtown Adjacent (Office/Residential)

These new land use designations would allow for a variety of uses, either in separate buildings or in mixed-use buildings. The land use designations establish uses as either permitted, permitted with limits, administratively or conditionally permitted, or prohibited. Detailed descriptions of the Land Use designations are provided in Section 4.9, *Land Use and Planning Policy*, of this EIR.

3.5.2 Zoning Districts

The Specific Plan establishes 10 distinct zoning districts. The zoning districts are based on the larger land use designations and provide for a detailed approach to land use regulation through the application of standards and guidelines that work together to establish a district's unique character and identity. The zoning districts establish detailed rules (or specific standards, discussed below) for new development, including both new construction and additions to existing structures. Detailed descriptions of the zoning districts are provided in Section 4.9, *Land Use and Planning Policy*, of this report.

3.5.3 Use Regulations

The Specific Plan's proposed use regulations govern both new development and existing buildings within the Plan area. However, existing developments that are already regulated by a Use Permit, Conditional Development Permit, Planned Development Permit, or other binding limitation would continue to be regulated by existing site-specific regulations. The new use regulations were derived primarily from the existing use regulations, historical practices, and work conducted in 2006 for the Commercial Zoning Ordinance Update project, and revised to reflect the community preferences expressed throughout the Specific Plan process as well as the Specific Plan's guiding principles.

3.5.4 Special Land Use Topics

Uses Permitted with Limits: A guiding principle is that limiting uses should relate to specific concerns of the community. Community members have expressed interest in limiting certain types of uses for a variety of reasons, including limiting uses that could generate higher amounts of traffic, such as medical and dental offices; and ensuring a desired retail mix downtown,

particularly on Santa Cruz Avenue. The Specific Plan outlines several mechanisms for limiting uses that might dominate the land use mix and impede desirable uses in a particular area. Based on a desire for mechanisms that are easy to understand and monitor by the general community, developers and City staff, the Plan includes mechanisms for limiting the size of specific types of uses and setting density limits on specific types of uses.

Independent Retail: The Specific Plan supports independent businesses by limiting the size of certain categories of uses. The strength of successful small independent retail revolves around specialization, differentiation and finding profitable, defensible and sustainable niches. Increasing the supply of local shoppers by encouraging more residential development in the downtown and station area would support downtown businesses. The Plan proposes two ways to support independent businesses as opposed to formula or chain retailers: 1) limit the size of particular establishments and 2) limit the location of particular establishments. The Specific Plan establishes size limits for certain types of uses discouraging larger chain retailers from locating in the downtown and station areas. It also limits ground-floor uses in the Downtown/Station Area "Main Street" retail/mixed use designation to primarily retail and restaurant uses. The Plan includes use limits and suggests that the City continue to monitor changes in the composition of uses over time and, as necessary, institute additional regulations that encourage independent retailers.

Market place Concept on Chestnut Street: The intent of the market place is to reinforce and activate this area as the center of downtown, in conjunction with the network of paseos, widened sidewalks, pocket parks and the Central Plaza. A market place in Menlo Park needs to be tailored to the local market and existing character of the downtown and a program needs to be more effectively defined at the time that the City implements the project. It should be relatively small (4,000 square feet or so) and complement the successful Farmer's Market, as well as the nearby Draeger's Market and Trader Joe's that provide an excellent foundation for the many functions typical of a market hall.

Non-Parking Improvements in Downtown Parking Plazas: The Specific Plan calls for enhanced public spaces and increased development intensities to increase downtown vibrancy, foot traffic and transit use. The Plan considers the public parking plazas as opportunities for public open space, the limited retail of the market place, and structured parking, enhancing the vitality and vibrancy of downtown. In all cases, parking in support of businesses must be the City's top priority when considering how, when and if to implement changes to public parking plazas.

3.5.5 Development Standards and Guidelines

The Specific Plan uses a combination of both standards and guidelines to manage the design and construction of new and expanded buildings. The standards and guidelines are intended to encourage infill development on underutilized parcels of land while respecting the smaller scale, fine grain character of the downtown and the Plan area's proximity to existing residential uses. The Specific Plan identifies standards for the categories listed below:

- Intensity
- Height
- Building Setbacks
- Building Massing and Modulation
- Building Ground Floor, Entry and Retail Frontage Treatment
- Parking, Service and Utilities
- Private Open Space
- Sustainable Practices

Standards. Development projects in the Specific Plan area will be required to adhere to applicable standards for each of the categories listed above. As such, specific standards are largely considered in the analysis of the Specific Plan throughout this EIR. The proposed new zoning districts for the Specific Plan area (see Section 3.5.2, above) specify for each of the categories listed above, standards applicable to each zoning district. Standards for intensity and height, are key factors in establishing the overall size of buildings. In the Specific Plan, they are used to help define the character of the El Camino Real corridor, station area and downtown by highlighting those areas where higher intensities and heights serve to enhance vibrancy, support transit use, and encourage the redevelopment of underutilized properties, as well as to enhance and protect those areas where it is important to strengthen the existing smaller scale, fine grain pattern of development. Table 3-3, at the end of this chapter, summarizes the intensity and height standards for all of the proposed zoning districts within the Specific Plan area.

The standards for each of the categories listed above have multiple components and are summarized below; these standards are further detailed and illustrated in the Specific Plan (Section E.4, "Zoning Districts"). Further, Table 3-2 that immediately precedes Table 3-3 at the end of this chapter identifies additional standards that apply within all of the proposed zoning districts within the Specific Plan area.

Guidelines. For development projects in the Specific Plan area, consistency with applicable guidelines for each of the categories listed above will be a key component in the review of a project. The guidelines for each of the categories are presented in Table 3-2 at the end of this chapter and summarized below.

Intensity

The Specific Plan defines the permitted development intensity using both the floor area ratio (FAR) system and, for residential uses, dwelling units per acre referred to as density. FAR, which determines the amount of building permitted on a parcel, is the ratio of gross floor area of all buildings and structures to lot area, expressed in square feet. Gross floor area is defined in Section 16.04.325 of the Zoning Ordinance, and includes detailed descriptions of what portions of a building are included and excluded in the calculation of gross floor area. Density is the ratio of dwelling units to lot size, expressed in acres.

Figure 3-4 shows the FAR and density for each of the Specific Plan Zoning Districts. The FAR and densities depict a base intensity and a public benefit bonus intensity (shown in parentheses). The base figures represent FAR and density that are permitted under the Specific Plan. The difference between the base amounts and the public benefit bonus amounts represent the amount of intensity that could be achieved in exchange for an identified public benefit. Under no circumstances may development exceed the public benefit bonus FAR and densities. The Specific Plan's increased allowable FARs and density also help stimulate redevelopment of underutilized parcels; activate the train station area and increase transit use; enhance downtown vibrancy and retail sales; and increase residential opportunities. The Plan places the highest intensity of development around the train station, consistent with goals mentioned above. It also focuses higher development intensities on the parcels on the east side of El Camino Real south of Ravenswood Avenue. These larger parcels could accommodate more development, and they are isolated from adjacent residential neighborhoods by El Camino Real to the west and the railroad tracks and Alma Street to the east. The Plan also emphasizes residential uses closest to downtown and the train station. (See specific intensity standards in Table 3-3 at the end of this chapter.)

Height

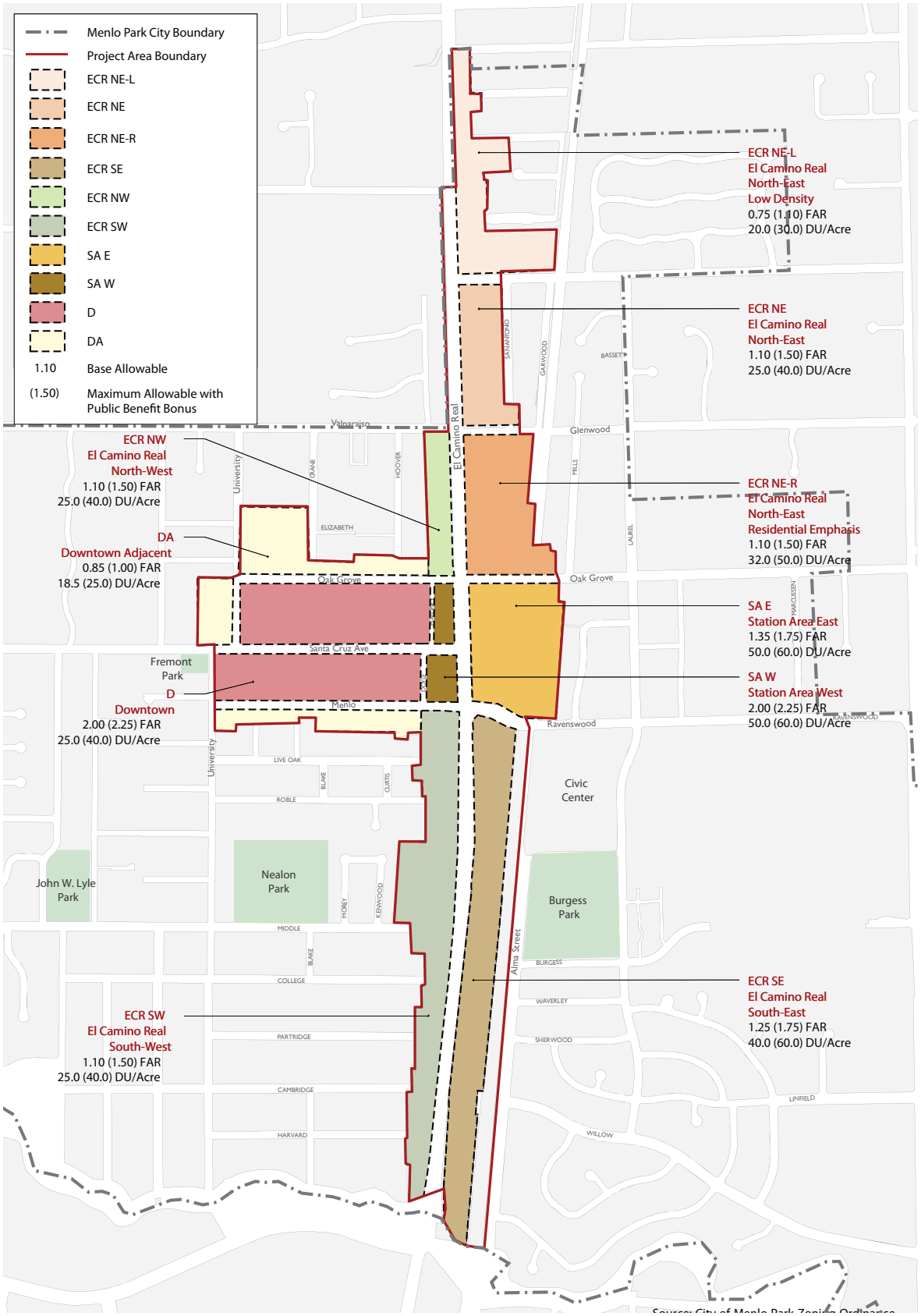
Based on community input, the Specific Plan allows for buildings up to 38 feet tall in most locations, up to 48 feet tall in the station area west of El Camino Real and along Alma Street, and up to 60 feet in the central station area and along the eastern side of El Camino Real south of Ravenswood Avenue. Additionally, a height of 48 feet would be allowed subject to the provision of public benefit on the east side of El Camino Real north of the station area, between Oak Grove and Encinal Avenues.

The Specific Plan also includes standards for maximum façade heights along public rights-of-way, sidewalks and other public spaces and sensitive areas, as well as rear property lines in areas proximate to single-family districts or other areas with significantly different height limits. As with existing height regulations, rooftop and mechanical equipment and solar panels would be allowed to exceed the height limits provided they be screened from view and integrated into the design of the building. (See specific height standards are in Table 3-3 at the end of this chapter.)

Building Setbacks

The Specific Plan uses setbacks to establish the minimum and in some cases the maximum, distance between a property line and wall of a building. Setbacks help define a street edge, provide adequate space for sidewalks, plazas, and landscaped open spaces, and help to manage building design and massing to ensure buildings fit well within the context of their specific location.

Consistent with the historic context in Menlo Park, where existing buildings are closest to the street in the downtown and along El Camino Real near downtown the Plan proposes no or minimal setbacks to be consistent with the existing pattern of the area. In other areas, setbacks range from five to 20 feet, with the largest setbacks required along the east side of El Camino Real north and south of the downtown area. The larger setbacks are intended to accommodate wider sidewalks of 15 feet with differentiated clear zones for furnishings and walking.



SOURCE: Perkins + Will

Menlo Park El Camino Real/Downtown Specific Plan EIR . 208581

Figure 3-4
Development Density and FAR Map

Building Massing and Modulation

The Specific Plan's standards and guidelines for building massing and modulation help to reduce the monolithic character of a building, ensure that all new and expanded buildings complement the existing character of the area, ensure appropriate transitions to adjacent neighborhoods and provide variety and visual interest. The standards and guidelines address a building's relationship with the street and other public spaces as well as its relationship to adjacent buildings and uses. The Specific Plan incorporates standards that help to accomplish the vertical and horizontal modulation with the following four elements: building breaks, façade modulation, building profiles and upper story façade length. These are discussed below.

Building Breaks: The Specific Plan includes requirements for building breaks that provide for additional street edge modulation, variety and visual interest and help avoid long, continuous facades on streets. The breaks can either extend through the entire height of the building and act to separate buildings and create open spaces or take the form of deep recesses that create a perception of distinct building mass and volume. Building breaks are more appropriate along El Camino Real and Alma Street than in the station area or downtown given the potential for development of larger buildings on larger parcels of land. The El Camino Real Southeast Zoning District (ECR SE) is a unique area because, with the exception of one small parcel, it is owned by three entities, including Stanford University. Stanford University owns two-thirds of the area (12.8 acres) and intends to prepare a comprehensive plan for the 8.5 acres of its site north of the Stanford Park Hotel once ground lease agreements have expired. In addition, this area is unique because the rear edges of the properties are bordered by the railroad tracks and Alma Street providing a large buffer to neighborhoods directly to the east. The Specific Plan requires building breaks along El Camino Real, with the exception of the areas in close proximity to the downtown, as well as along Alma Street. (See specific building break standards in Table 3-2 at the end of this chapter.)

Façade Modulation and Treatment: The Specific Plan includes standards and guidelines for façade modulations and treatments to avoid long stretches of continuous or monotonous street frontage and to provide visual interest. The Specific Plan requires façade modulation depending on building façade length with the intent that buildings should maintain a tight and varied rhythm of facades compatible with the existing downtown character. The Plan requires both minor façade modulations every 50 feet of façade length and major façade modulations every 100 feet of façade length in all zoning districts. (See specific façade modulation standards and guidelines in Table 3-2 at the end of this chapter.)

Building Profiles: The Specific Plan includes a standard in most zoning districts for a building profile at upper stories that would require a building to comply with a 45-degree building profile for all portions of a building above the façade maximum height specified for the zoning district. Similar to the height restrictions, the Specific Plan includes allowance for encroachments for rooftop mechanical equipment, solar panels and balconies. (See specific building profile standards and guidelines in Table 3-2 at the end of this chapter.)

Upper Story Façade Length: The Specific Plan includes a limit of 175 feet of façade length along a public right-of-way or public open space on the portion of buildings taller than 38 feet in order to further break down the massing of large buildings. (See the specific standard in Table 3-2 at the end of this chapter.)

Building Ground Floor, Entry and Retail Frontage Treatment

Since a building's ground floor is the most experienced by the pedestrian, the Specific Plan intent is to maximize the strategies that lead to vibrant and welcoming streets and a successful retail environment. The Specific Plan includes standards and guidelines for ground floor treatments, building entries and retail frontage. (See specific standards and guidelines in Table 3-2 at the end of this chapter.)

Parking, Service Access and Utilities

The Specific Plan's intent for parking, service access and utilities is to ensure that these areas are carefully considered to improve a building's character and to accommodate pedestrians.

Guidelines E.3.7.01 through E.3.7.08, Standard E.3.7.09, and Guidelines E.3.7.10 through E.3.7.15 of the Specific Plan (see Table 3-2 at the end of this chapter) apply to all zoning districts, although parcels within the downtown may not be required to provide off-street parking, subject to availability in public facilities. Parking requirements are discussed in more detail in Section 3.6.6 of this chapter.

Private Open Space

Because the provision for and treatment of private open space on individual parcels could enhance the character of public streets and sidewalks and private development, the Specific Plan's intent is to encourage private open space that could add to public open space in the area.

The proposed zoning districts include requirements for the provision of open space that range from no open space requirement in the downtown area and areas immediately surrounding downtown, to a minimum of 20 percent in areas adjacent to the downtown core, and a minimum of 30 percent in all remaining areas. Standards and guidelines for the incorporation of open space in private developments are listed in Table 3-2 at the end of this chapter.

Sustainable Practices

The Specific Plan incorporates standards and guidelines for sustainable development based on LEED and best practices from other cities. Specifically, the Plan requires LEED certification at a silver level or higher for new residential development, new commercial buildings that are 5,000 gross square feet or larger, commercial interior build-outs of 20,000 gross square feet or larger and residential and commercial alterations of 20,000 gross square feet or greater. Additionally, because larger projects allow for more comprehensive sustainability planning and design, such as efficiency in water use, stormwater management, renewable energy sources and carbon reduction

features, projects with multiple buildings on a one-acre or larger lot are encouraged to obtain LEED Neighborhood Development (ND) certification at a silver or higher level.

- The Specific Plan also includes guidelines for building design, stormwater and wastewater management, lighting, and green building material use in new developments. These sustainable practices guidelines do not replace LEED certification requirements. (See specific standards and guidelines in Table 3-2 at the end of this chapter.)

3.6 Circulation

The Specific Plan accommodates all travel modes with an emphasis on pedestrians, bicyclists, and transit users. The Plan focuses new development in an area well served by transit and with a mix of uses in close proximity reducing the reliance on private motor vehicles, helping to minimize traffic congestion, reducing the amount of land dedicated to parking, and reducing greenhouse gas emissions. The Plan envisions the following elements.

- A vehicular circulation system that accommodates both local traffic and north/south through traffic on El Camino Real.

- An integrated pedestrian network of expansive sidewalks, promenades and paseos along El Camino Real and within downtown. The network provides opportunities for safe crossing of El Camino Real and the railroad tracks and connects the east and west sides of town, including the City's civic center with downtown.

- A bicycle network that builds upon existing plans and integrates more fully with downtown and proposed public space improvements in the area.

- An integrated circulation plan that supports transit use.

- A public parking strategy and management plan that efficiently accommodates downtown visitors and supports downtown businesses.

- Modified parking rates for private development based on current industry standards.

3.6.1 El Camino Real Improvements

The Specific Plan includes improvements to the southern portion of El Camino Real in the Plan area. In order to provide access to new development, particularly at the Stanford University property, the Plan proposes to use existing median breaks and traffic signals and, potentially, additional traffic signals if needed.

3.6.2 Downtown Streets Improvements

The Specific Plan includes improvements on Santa Cruz Avenue in the downtown area, specifically, widening sidewalks and relocating parking spaces. A portion of Chestnut Street south of Santa Cruz Avenue would be converted to pedestrian-only access. Oak Grove Avenue would be a bicycle-priority street with added bike lanes.

3.6.3 Pedestrian Improvements

The new development and redevelopment proposed in the Specific Plan would increase the number of pedestrians in the Plan area. The Plan proposes improved pedestrian crossing treatments such as marked crosswalks, and in some instances high-visibility crosswalks with enhanced pavement, accessible pedestrian signals, countdown pedestrian signals, and median islands/pedestrian refuges.

The Specific Plan proposes two primary approaches to improve east-west connectivity across El Camino Real by improving pedestrian comfort and accommodation and adding track-separated pedestrian/bicycle crossings across the railroad tracks.

With the exception of the areas within the downtown core, to improve north-south connectivity along El Camino Real, the Specific Plan proposes minimum 15-foot wide sidewalks on the east side of El Camino Real, inclusive of a 10-foot clear pedestrian through zone. The 15-foot wide sidewalk would include a five-foot wide zone for plantings as well as street lamps, trees, hydrants, and other street furnishings. Likewise, the Specific Plan proposes a minimum 12-foot sidewalk on the west side of El Camino Real, inclusive of an eight-foot wide clear pedestrian through zone and a four-foot wide furnishings zone. The plan proposes a narrower sidewalk on the west side, due to the tighter site conditions and narrower parcels on the west side of the street. Private developers would implement the improvements and the gains in sidewalk widths would be achieved over time by moving building frontages back as sites are redeveloped. The intersection of Ravenswood Avenue and Alma Street was identified as an area that could benefit from improvements to enhance safety. Improvements to this intersection could include: enhanced pavement markings, additional warning lights, changes to vehicular circulation (to increase predictability of vehicular flow), and “quad gates” at the Caltrain tracks.

Within the downtown area on El Camino Real (between Oak Grove and Menlo Avenues), the Plan proposes 12-foot wide sidewalks separated from travel lanes by on-street parking and bicycle lanes. The sidewalks would consist of an eight-foot wide clear pedestrian zone and a four-foot wide furnishings zone. Like other portions of El Camino Real, the gain in sidewalk widths along this section of the corridor would be achieved by moving building frontages back as sites are redeveloped.

As described previously, the Specific Plan proposes streetscape improvements, promenades, pedestrian paseos, plazas, pocket parks and conversion of surface parking lots to contribute to a more inviting pedestrian environment in and around downtown.

3.6.4 Bicycle Facilities

To improve east-west and north-south connectivity, the Specific Plan recommends the following bicycle improvements:

- Class II bicycle lanes on El Camino Real north of Encinal Avenue and Oak Grove Avenue between University Drive and Laurel Street, requiring removal of parking on one side of the street (Plan recommends the north side);

- Future Class II/Minimum Class III bicycle facilities on El Camino Real south of Encinal Avenue, Menlo Avenue between University Drive and El Camino Real, on westbound Ravenswood Avenue between railroad tracks and El Camino Real, University Drive north of Santa Cruz Avenue to Valparaiso Avenue and south of Menlo Avenue to Middle Avenue, Middle Avenue between University Drive and El Camino Real;

- Class III bicycle routes on Encinal Avenue between El Camino Real and the railroad tracks, Santa Cruz Avenue between University Drive north and south, University Drive between Santa Cruz Avenue and Menlo Avenue, Middle Avenue west of University Drive, Crane Street between Valparaiso Avenue and Menlo Avenue, Garwood Way from Encinal Avenue to Oak Grove Avenue, and Alma Street between Oak Grove Avenue and Ravenswood Avenue; and

- Bicycle/pedestrian grade-separated crossings of the railroad tracks at the train station and Middle Avenue.

The Future Class II/Minimum Class III bicycle facilities designation is used for locations where bicycle lanes are a long-term goal of the Plan but are less feasible in the near-term because they would require parking removal or right-of-way acquisition. The Plan includes thresholds or triggers for when the City may wish to consider implementing the Class II lanes.

The Plan also recommends bicycle storage standards and guidelines in accordance with the Association of Bicycle and Pedestrian Professionals, *Bicycle Parking Guidelines*, 2010, painted street markings that indicate where bicyclists should ride (known as sharrows), new bicycle parking facilities in the proposed parking garages, new bicycle parking racks in the pocket parks, on the Chestnut Street Paseo and along Santa Cruz Avenue, and way-finding signage in any future downtown signage plan. (See also Table 3-2 for specific standards and guidelines.)

3.6.5 Transit Service

The Plan area is served by Caltrain, SamTrans bus service, and local shuttles. The Specific Plan proposes the following transit improvements to support the increase in population in the Plan area: accommodate potential bus rapid transit (BRT) service with the ongoing Grand Boulevard Initiative to serve added travelers on El Camino Real; increase shuttle service to serve added travel demand; improve east-west connectivity and reduce demand for parking in the Plan area; and continue and enhance employer sponsored programs that support and increase transit use.

The Grand Boulevard Initiative is a collaboration of 19 cities, two counties, and several regional and local agencies and other stakeholders with a goal of transforming the El Camino Real corridor from Daly City to San Jose. The Initiative seeks to balance the need for cars and parking with viable options for transit, walking and biking. The improvement of transit service along the corridor with BRT service is a major component of the Initiative. The Plan supports BRT and identifies potential BRT stops for northbound and southbound services within walking distance of the Caltrain station. These stops would be the responsibility of the transit agency providing BRT service.

There are free public shuttles operating in Menlo Park (funded by City/County Association of Governments, San Mateo County Transportation Authority, the Joint Powers Board, and the City).

The headways are approximately 60 minutes for all shuttles. The Caltrain Shuttle Service generally serves local employers and operates during the commute hours. The Midday Shuttle Service is popularly used by seniors and serves the Stanford Medical Center, Stanford Shopping Center, downtown Menlo Park, Menlo Park Caltrain station, Menlo Park Library, Veterans Administration Medical Center, the Menlo Park Senior Center, and the Onetta Harris Community Center. The Midday Shuttle Service operates during mid-day hours on weekdays, only. The Plan recommends adding additional shuttle buses to reduce the headways and including morning and evening as well as weekend service to the Midday Shuttle Service route. Shuttle routes would be modified to bring residents and employees to downtown thereby reducing automobile travel. Shuttle routes and service modifications would be dependent upon the pace of development and upon available funding.

3.6.6 Parking

Parking in the Plan area is currently on private lots, on the street, and in downtown public parking plazas. New development located in areas outside of the downtown as well as developments in the downtown with private parking lots provide parking on-site, based on the size and land use of the new development and City Zoning Ordinance regulations. Parking for most new downtown developments of up to 100 percent FAR is provided in the public parking plazas. Downtown developments are currently allowed an FAR of 200 percent, however must provide the additional parking for FAR above the 100 percent covered by the public parking plazas. This can be physically difficult and expensive. In order to support future development, the Specific Plan, recommends new off-street parking rates consistent with industry standards and the mixed use nature of the area, proximity to the Caltrain station and bus routes, the high use of walking and biking, and opportunities for shared parking. The table below shows the minimum parking rates under existing conditions and the Specific Plan.

TABLE 3-1
MINIMUM PARKING RATES

Land Use	Existing City Requirements		Specific Plan Rates[c]
	Zoning Ordinance[a]	Use Based Guidelines[b]	
Multi-Family Dwelling	2.00	-	1.0 - 1.85[d]
General Office (per 1,000 sf gfa)	6.00	3.30	3.80
Medical Office (per 1,000 sf gfa)	6.00	5.00	4.50
Retail and Personal Service (per 1,000 sf gfa)	6.00	5.00	4.00
Supermarket (per 1,000 sf gfa)	6.00	-	5.50
Restaurants (per 1,000 sf gfa)	6.00	6.00	6.00
Hotel	-	1.10	1.25

NOTE: sf = square feet; gfa = gross floor area

[a] City of Menlo Park Municipal Code, Title 16, Chapter 16.72; the primary districts in the Specific Plan area are C-3 and C-4 (ECR)which require six spaces per 1,000 sf gfa regardless of commercial use type; residential units require two space/dwelling unit.
[b] City of Menlo Park Parking Reduction Policy, http://www.menlo park.org/departments/pln/parkredpolicy.pdf
[c] If a use is not listed in this table, a project applicant may propose a rate from Urban land Institute Shared Parking for the review and approval of the Transportation Manager.
[d] Residential parking standards would vary by subarea of the Plan: A minimum of 1.0 space per unit would be required in the Station Area Sphere of Influence, a minimum of 1.0 and a maximum of 1.5 spaces per unit would be required in the Station Area, and a minimum of 1.85 spaces per unit would be required elsewhere in the Plan area.

In the downtown area, proposed public space improvements and the marketplace would decrease the number of existing public parking spaces in certain areas. For this reason as well as the need to build parking capacity for the future, the Plan proposes increasing the parking supply with the construction of up to two parking garages and implementing a parking management plan. The existing supply of public parking spaces in the public parking plazas and on-street is 1,595 spaces. The Plan determines that a maximum of 824 spaces for a total of 2,419spaces could be gained with the inclusion of parking garages although this number could be lower depending on the final design of the garages. The Specific Plan proposes new policies for balancing the parking supply and demand in the downtown (see Table 3-2 at the end of this chapter).

Parking Management Plan

The Specific Plan recommends that the City prepare a Parking Management Plan to improve management and utilization of existing parking spaces downtown. The Parking Management Plan could encompass the following strategies:

- Vary time limits for parking to enhance turnover of the most convenient spaces;
- Implement pricing for parking to control parking occupancies;
- Unbundle parking to demonstrate the true cost of parking spaces, reduce the amount of parking needed and minimize underutilized parking;
- Establish a Parking Benefits District to capture parking revenues and finance public improvements downtown; and
- Prepare a Parking Implementation Plan.

Other Parking Management Plan strategies include:

- Create well-designed pedestrian-friendly linkages between the major parking areas (lots and garages) and downtown destinations (addressed in Public Space chapter); and
- Accommodate car-share programs to provide vehicles to those who need them infrequently.

3.6.7 Transportation Demand Management

For the purpose of mitigating traffic impacts pursuant to CEQA, the Specific Plan proposes Transportation Demand Management (TDM) programs for all new developments, including those that generate fewer than 100 peak hour trips. The intent of the TDM programs is to reduce the amount of peak period traffic on roadways and the associated parking demand by encouraging modes other than single-occupant vehicles for travel. TDM strategies could include the following.

- Commute alternative information;
- Bicycle storage facilities;
- Showers and changing rooms;
- Pedestrian and bicycle subsidies;

- Operating dedicated shuttle service (or buying into a shuttle consortium);
- Subsidizing transit tickets;
- Preferential parking for carpoolers;
- Provide child care services and convenience shopping within new developments;
- Van pool programs;
- Guaranteed ride home program for those who use alternative modes;
- Parking cashout programs and discounts for persons who carpool, vanpool, bicycle or use public transit;
- Imposing charges for parking rather than providing free parking;
- Providing shuttles for customers and visitors; and/or
- Car share programs.

3.7 Implementation of the Specific Plan

The Specific Plan establishes a framework for the implementation of the Plan. There are five major components:

- Key Actions to Enable the Specific Plan;
- Key Actions to Implement the Specific Plan;
- Financing Methods for Public Improvements;
- Phasing of Public Improvements; and
- Utility Improvements.

3.7.1 Key Actions to Enable the Specific Plan

The key actions necessary include:

- Review of the relationship of the Specific Plan to the General Plan which is provided as part of the Specific Plan; and
- General Plan and Zoning Ordinance Amendments.

The Specific Plan includes within it a comprehensive set of General Plan-type components (e.g., goals, policies, land use designations, and circulation plans). As such, prior to the adoption of the Specific Plan, the General Plan will be amended to include the Specific Plan as part of the General Plan itself, governing the plan area. The Specific Plan also includes Zoning Ordinance-type elements (e.g., detailed development regulations). After adoption of the Specific Plan, the City will adopt similar Zoning Ordinance amendments that will constitute the Zoning Ordinance for the Plan area, unless otherwise specified. The General Plan Land Use Diagram and the City's Zoning Map will be similarly amended to show changes consistent with the Specific Plan.

3.7.2 Key Actions to Implement the Specific Plan

The following actions are necessary to implement the Specific Plan:

- Administration, Processing and Review of Applications;
- Nonconforming Structures and Uses; and
- Maximum Allowable Development.

The Plan would retain the existing Zoning Ordinance procedures for administration, processing, and review of the following types of land use applications.

Architectural Control: Architectural control procedures would apply to all new construction and additions of more than 100 square feet, as well as exterior modifications that would not be consistent with a previous design approval. The four existing findings for architectural control approval would be supplemented by a fifth finding that would require new development to be consistent with any applicable Specific Plan. The Planning Commission would continue to make architectural control actions, which would be effective unless appealed to the City Council under the procedures outlined in Zoning Ordinance Chapter 16.86.

Use Permit: The use permit requirements would apply to new construction as well as changes of use for the particular conditional uses listed in the Specific Plan. For new construction of conditional uses, architectural control and use permit requests would be reviewed and acted upon concurrently. The Planning Commission would continue to make use permit actions, which would be effective unless appealed to the City Council under the procedures outlined in Zoning Ordinance Chapter 16.86.

Administrative Permit: The administrative permit procedures would apply to certain uses as listed in the Specific Plan. The Community Development Director would continue to make administrative permit actions, unless appealed to the Planning Commission. Administrative permits are effectively limited to changes of use in existing buildings. If an administrative use is proposed concurrent with new construction, the administrative permit should be considered and acted upon by the Planning Commission concurrent with architectural control.

Variances: The variance procedures would continue to apply to requests to waive or modify certain development standards. Variances would not be required for guidelines. Currently, variances are not permitted for uses, or to permit relief in excess of 50 percent of any requirement. These requirements would continue to hold for the Plan area, and would be supplemented by an additional prohibition against variances for intensity (FAR) and density (dwelling units per acre) standards as established by the Specific Plan. The Planning Commission would continue to make variance actions, which would be effective unless appealed to the City Council under the procedures outlined in Zoning Ordinance Chapter 16.86. The existing findings for approval would be supplemented by a fifth finding related to the Specific Plan.

Conditional Development Permits and Planned Development Permits: Conditional Development Permits (CDP) and Planned Development Permits (P-D) would no longer be permitted in the Plan area.

Public Benefit Bonus Negotiated Agreement: In order to achieve the Public Benefit Bonus intensity, an applicant would need to propose public benefit(s) for the City's consideration. If deemed appropriate, the benefit(s) would be memorialized through project conditions of approval or a development agreement, as appropriate depending on the proposed benefit.

Nonconforming Uses and Structures

The Specific Plan may serve to bring some buildings and land uses into conformance that were previously deemed legal but nonconforming. However, some existing buildings and land uses may be impacted by the changes included in the Specific Plan. To protect existing buildings and land uses, the amendments to the Zoning Ordinance necessary for implementation of the Specific Plan would include language to provide protections for existing buildings and land uses.

Maximum Allowable Development

The Specific Plan establishes the maximum allowable development as 680 residential units and 474,000 square feet of non-residential uses including retail, office, and hotel. The Plan requires that a publically available record of the following be maintained at all times:

- The total amount of allowable residential units and non-residential square footage under the Specific Plan;
- The total number of residential units and non-residential square footage for which entitlements and building permits have been granted;
- The total number of residential units and non-residential square footage removed due to building demolition; and
- The total allowable number of residential units and non-residential square footage remaining available.

The Planning Division shall provide the Planning Commission and City Council with yearly informational updates of this record. After the granting of entitlements or building permits for 80 percent or more of either the maximum residential units or maximum non-residential square footage, the Community Development Director will report to the City Council. The Council would then consider whether it wished to consider amending the Plan and completing the required environmental review, or the Council could choose to make no changes in the Plan. Any development proposal that would result in either more residences or more commercial development than permitted by the Specific Plan would be required to apply for an amendment to the Specific Plan and complete the necessary environmental review.

Near Term Review of Specific Plan

The Specific Plan constitutes a significant and complex revision of the existing regulations, and there may be aspects of the plan that do not function precisely as intended when applied to actual future development proposals and public improvement projects. In order to address such issues comprehensively, the Specific Plan recommends that the City conduct a comprehensive audit of the Specific Plan after an interval of two to four years, with any modifications that are needed to be presented for Planning Commission review and City Council action. Minor technical modifications would generally be anticipated to be covered by the current Program EIR analysis, while substantive changes not covered by the Program EIR would require additional review.

3.7.3 Financing Methods for Public Improvements

The Specific Plan provides funding and financing alternatives for the proposed public space and facility improvements. Approval of the Specific Plan would not bind the City to specific financing methods and phasing decisions. These would require future individual actions of the City Council.

The Plan states that the first step in deciding how to finance identified public improvement projects is to determine whether the appropriate funding strategy is pay-as-you-go or debt financing.

- In the pay-as-you-go approach, the improvement would only be made once a sufficient amount of revenue is collected to fund the improvement. For example, the City currently collects development impact fees that are used to make improvements to infrastructure such as recreation, transportation and other public facilities. Under a pay-as-you-go approach, improvement projects would not be undertaken until adequate fee or other revenues were collected.

- Under the debt financing approach, the money for an improvement is borrowed now through a financing method such as issuing bonds; the improvement is made now, and is paid for over time by revenue collected (such as taxes or fees).

The City General Fund is the primary source of funding for most essential City services such as police. It is unlikely that the General Fund would be a significant source of funding for infrastructure projects that have major funding needs. Thus, the City would need to determine how to generate additional revenue for implementation of the Plan. Potential sources of funding may be as follows:

- Benefit Assessment Districts;
- Mello-Roos Community Facilities Districts
- Development Impact and In-lieu Parking Fees;
- Parking Fees;
- Grants;
- Developer Contributions, Public Benefits and Public Amenity Fund;
- Private Use of Publicly-Owned Properties;
- General Capital Improvement Project (CIP) Fund; and
- Shuttle Funding.

3.7.4 Phasing of Public Improvements

The City anticipates that development implementing the Specific Plan would take place over the next 30 years. However, the timing and sequence of development would depend upon numerous factors, including future market conditions, public investment, and private initiative and investment. The analysis in this EIR assumes full buildout would occur over the next 20 to 30 years.

The Specific Plan recommends the City make the following improvements in the short-term (i.e., within five years):

- Streetscape improvements on Santa Cruz Avenue, between University Drive and El Camino Real, including sidewalk widening, new street furnishings and a central plaza (48 parking spaces affected); and

- Street conversion of Chestnut Street, south of Santa Cruz Avenue, to a pedestrian paseo (11 parking spaces affected).

The above actions would affect a relatively modest number of parking spaces (59 total affected), with demand able to be absorbed in the existing parking plazas, based on recent capacity studies. The Specific Plan also recommends the City construct one of the potential two parking garages in the short term. The City should further evaluate what parking garage to construct first, considering such factors as parking space needs, available budget, the redevelopment of surrounding properties and community and business sentiment. Constructing a parking garage on parking plaza 3 in the short term, for instance, would increase parking in that location by 438 spaces. This would allow for additional public space improvements, plus new private development using the shared parking facilities.

The timing and sequencing of the above projects and other public improvements would be subject to further study prior to approval of any construction, with the overall intent of limiting potential effects on nearby businesses and other uses. For example, the Plan requires that multiple major projects occurring in close proximity not be implemented at the same time as this could affect business operations. Further, the Plan requires that fiscal and/or convenience impacts related to construction be minimized through programs that help promote local businesses and ease operational challenges.

The Specific Plan generally recommends that public improvements be constructed in permanent form. However, the Plan requires that the City undertake certain public improvements on a trial basis before moving forward with a permanent installation. These improvements include the marketplace, partial closure of Chestnut Street to vehicular traffic and potential closure of one driveway each in parking plazas 6 and 7 to accommodate the proposed Chestnut Street Paseo, widened sidewalks on Santa Cruz Avenue, and the Santa Cruz Avenue Central Plaza. The trial period shall be the basis for the review and consideration of a permanent installation.

3.7.5 Utility Improvements

Utility improvements are discussed in detail in Section 4.12, *Public Services and Utilities,* of this Draft EIR.

3.7.6 Storm Drainage

Since the Plan area is nearly fully developed and existing requirements require no net increase in off-site water flow, storm water runoff flow rates will not increase with the improvements outlined in the Specific Plan. In addition, newer, higher density projects in the area are expected to include more landscaped areas, including green roofs, than currently existing, which would potentially help to decrease storm water runoff and improve storm water quality. The Plan recommends the following measures to control stormwater runoff:

- The City should implement the proposed improvements of the May 2003 City of Menlo Park City-Wide Storm Drainage Study.
- The City should continue its existing policy of limiting storm-water runoff within the Specific Plan area to current conditions or less.
- The City should implement green roof measures and other sustainable practices to decrease storm drainage run-off.

3.7.7 Sanitary Sewer

The West Bay Sanitary District (WBSD) owns and maintains sewer facilities in the Plan area. The South Bayside System Authority (SBSA) owns and maintains the main line and wastewater treatment plant that serves the Plan area. Sanitary sewer conveyance lines in the Specific Plan area are currently operating within their designed capacity with no known flow restrictions. While WBSD is undertaking a Master Plan study to analyze the system's trunk lines, preliminary results show that the need for increased capacity is minimal. SBSA's sewage treatment plant is currently treating approximately 15 - 20 Million Gallons per Day (MGD) of sewage in dry weather and has capacity for 27 MGD; plant improvements now underway will increase capacity to 29 MGD. Anticipated wastewater generation increases from the Specific Plan area are not expected to be limited by current or future capacity at the treatment plant. The Specific Plan's build-out program, if achieved, would generate roughly a 1.5 to 2.0% increase over current dry weather treatment rates at the SBSA.

The Specific Plan recommends that sewer upgrades should occur in conjunction with the proposed streetscape improvements, as appropriate, to meet size and separation requirements with other utilities and to accommodate each development as they come on-line. In addition, deteriorating local lines may need to be replaced in conjunction with the streetscape improvements to mitigate likely existing inflow and infiltration issues.

3.7.8 Water Supply and Delivery

The California Water Service Company's (Cal Water) Bear Gulch District supplies water and maintains water conveyance facilities for the Plan area. The Water Supply Analysis prepared by Cal Water concluded that under normal year conditions that the Bear Gulch District would have sufficient capacity to meet the water demands of the proposed project without compromising existing demands. In normal years, Cal Water would have sufficient water supply to serve the proposed project. In critical dry and multiple-dry-year events, when the San Francisco Public Utilities Commission (SFPUC) could impose 20 percent reductions in supply, Cal Water and the Bear Gulch District have in place a water shortage contingency plan (California Water Code Section 10632) to balance supply and demand. With a water shortage contingency plan in place, plus the addition of supplies developed through the Bay Area Water Supply and Conservation Agency's Long-Term Water Supply Strategy combined with the SFPUC's Water System Improvement Program improvements, Cal Water and the Bear Gulch District have sufficient water supplies available to serve the proposed project.

With respect to water delivery, most of the distribution mains in the area consist of 6-inch diameter pipe. These distribution lines are part of a 50-year replacement program being undertaken by Cal Water. Upgrades or upsizing of portions of the distribution system may be required for developments that increase water use or fire flow requirements from the existing condition in compliance with existing Menlo Park or Fire District standards. Figure G4 depicts the existing and potential improvements to the water conveyance system.

The Specific Plan recommends:

- The City should coordinate with Cal Water to prepare a water system master plan for replacement of water lines within the Specific Plan area to meet water use or fire code requirements for proposed new development.

- Water upgrades should occur in conjunction with the proposed streetscape improvements to meet size and separation requirements with other utilities.

3.8 Required Approvals and Actions

This EIR is intended to provide the information and environmental analysis necessary to assist the City in considering all the approvals and actions necessary to adopt the Menlo Park El Camino Real/Downtown Specific Plan. To summarize previous discussions in this chapter, the following actions are required by the City for adoption of the Plan:

- **Certification of the EIR.** Certify the Menlo Park El Camino Real/Downtown Specific Plan EIR and make environmental findings pursuant to CEQA.

- **Amendments to General Plan.** Amend General Plan text and maps to incorporate the Specific Plan.

- **Amendments to the Menlo Park Zoning Ordinance.** Amend Zoning Ordinance text and map to incorporate the Specific Plan

Although not required to approve the Plan, the City and other relevant responsible agencies that may be identified would be required to review and approve separate applications, conduct environmental review, and consider discretionary approvals required for the development of specific subsequent development proposals that cannot be known at this time. As previously discussed, the City would review actual future development proposals within the Plan area for consistency with the Plan and for potential site specific significant environmental impacts.

The agencies below would be required to approve the proposed Specific Plan for development in areas under their jurisdiction that are within the Plan area:

- Caltrans—El Camino Real (State Route 82)
- Peninsula Corridor Joint Powers Board—Caltrain Right-of-Way.

TABLE 3-2
MENLO PARK EL CAMINO REAL AND DOWNTOWN SPECIFIC PLAN DRAFT
STANDARDS, GUIDELINES, AND POLICIES

Note: Unless listed as a Standard or a Policy, the numbers in the left column refer to Specific Plan Guidelines.

D.2 DOWNTOWN	
Santa Cruz Avenue Sidewalks	
Streetscape improvements on Santa Cruz Avenue should include the following:	
Standard D.2.01	Streetscape improvements on Santa Cruz Avenue shall retain existing median trees to the extent possible.
D.2.02	Provide widest sidewalk possible while retaining on-street parallel parking.
D.2.03	Introduce safe pedestrian crossings by using elements such as marked crossings, clear signage, supplementary lighting, and curb extensions.
D.2.04	Introduce street trees in parking zone to maximize sidewalk width, particularly in those areas where a 12 foot-minimum sidewalk dimension cannot be achieved.
D.2.05	Coordinate with streetscape improvements in the station area.
D.2.06	Consider the following as criteria for streetscape furnishing selection: timeless, functional, easy maintenance, durability and sustainability.
D.2.07	Achieve safe lighting for vehicular circulation and comfortable lighting for pedestrians; consider additional decorative lighting for nightscape.
Sidewalk improvements on Santa Cruz Avenue should include the following:	
D.2.08	Organize sidewalks according to best practice functional zones: frontage zone (if space allows), pedestrian thru zone, furnishings zone and curb/parking zone. [As] illustrated in Figure D8 [of the Specific Plan], each zone should accommodate a specific function.
D.2.09	Incorporate a frontage zone, if space allows. A frontage zone lies between the adjacent building and pedestrian thru zone, assuming the sidewalk dimension allows for it, and it may accommodate outdoor seating and planting.
D.2.10	Incorporate a pedestrian thru zone, which allows for unimpeded pedestrian circulation, free of all obstruction, including utility boxes and fences for outdoor dining. The pedestrian thru zone should have a minimum width of 12 feet.
D.2.11	Incorporate a furnishings zone, which provides a buffer between the pedestrian thru zone and street traffic. The furnishings zone accommodates public amenities such as street trees, street lamps, benches, bike racks, kiosks, news racks, mailboxes, transit shelters, public art, plantings, utility poles and utility boxes. In some cases, the furnishings zone is also used for outdoor seating and dining by shops, cafes and restaurants. The furnishings zone should have a minimum width dimension of 5 feet.
D.2.12	Incorporate a curb/parking zone, which is the interface between the roadway and sidewalk and accommodates vehicular parking (See Figures D9 and D10 of the Specific Plan)
D.2.13	Optimize flexibility and space for outdoor seating.
D.2.14	Avoid cluttering of sidewalk with excessive or encumbering streetscape elements.
D.2.15	Preserve good visibility of retail storefronts.
Santa Cruz Avenue Central Plaza	
The design of the Santa Cruz Avenue Central Plaza should include the following:	
D.2.16	Afford flexible use.
D.2.17	Allow for the area to be open or closed to traffic.
D.2.18	Provide a unifying overall treatment from building edge to building edge.
D.2.19	Consider a flush surface by raising the roadway to sidewalk level, creating a seamless, walkable space while also serving as a traffic calming device.
D.2.20	Incorporate and ensure continuity of the pedestrian thru zone as established for the length of Santa Cruz Avenue.
D.2.21	Consider incorporating additional landscaping materials within widened sidewalk areas.
D.2.22	Consider a civic art installation.
Chestnut Paseo	
Standard D.2.23	Allow for emergency vehicular access throughout.

TABLE 3-2 (Continued)
MENLO PARK EL CAMINO REAL AND DOWNTOWN SPECIFIC PLAN DRAFT
STANDARDS, GUIDELINES, AND POLICIES

Note: Unless listed as a Standard or a Policy, the numbers in the left column refer to Specific Plan Guidelines.

D.2 DOWNTOWN (cont.)	
Chestnut Paseo (cont.)	
The design of the Chestnut Paseo should include the following:	
D.2.24	Afford for flexible use.
D.2.25	Provide a unifying overall treatment, with enhanced paving, the width of the right-of-way.
D.2.26	Provide a flush surface by raising the roadway to sidewalk level, creating a seamless, walkable space.
D.2.27	Consider additional landscaping and a civic art installation.
D.2.28	Consider providing additional shade with permanent light tensile structure (i.e., structured, open-air, tent-like structure).
D.2.28	Consider providing additional shade with permanent light tensile structure (i.e., structured, open-air, tent-like structure).
D.2.29	Coordinate treatment with Santa Cruz Avenue Central Plaza and market place.
Market Place	
The design of the market place should include the following:	
Standard D.2.30	Preserve and integrate into the concept the existing heritage oak tree.
Standard D.2.31	Retain automobile access to and from Parking Plazas 6 and 7, toward the south end of Chestnut Street.
Standard D.2.32	Provide clear space as needed for emergency vehicles.
D.2.33	Programming of the market place should contribute to the Farmer's Market identity and presence in the region.
D.2.34	The market place improvement could be a roofed structure, an enclosed building(s), an extension of the paseo or a combination of the above. It could be disconnected structures or other improvements along either side of the Chestnut Paseo, or it could potentially straddle the Paseo. The market place could have an approximate size of 4,000 square feet.
The design of the market place should include the following:	
D.2.35	Be oriented to activate the Chestnut Paseo, Farmer's Market and flex space during events.
D.2.36	Consider establishing a visual landmark from Santa Cruz Avenue and the parking plazas.
D.2.37	Coordinate treatment with the Chestnut Paseo and adjacent flex space/parking area.
South Parking Plazas Pedestrian Link	
The design of the pedestrian promenade should include the following:	
D.2.38	Be continuous between University Drive and Doyle Street, incorporating pedestrian crosswalks across intersected streets.
D.2.39	Incorporate a 6-foot clear minimum pedestrian thru zone.
D.2.40	Be tree-lined for shade and properly lit for pedestrian safety.
D.2.41	Coordinate style and materials with the Chestnut Paseo.
D.2.42	Consider special paving treatment, including public art inlays or other creative use of the surface as well as sustainable materials such as permeable paving.
D.2.43	Consider special treatment of trash bins, utilities, etc. to create a more pleasing environment.
Flex Space/Parking Area (Parking Plazas 5 and 6)	
The design for improvements to Parking Plazas 5 and 6 should include the following.	
D.2.44	Optimize layout and functionality, including integration of the portion of Crane Street between the parking plazas and the pedestrian promenade on the northern edge of the parking plazas.
D.2.45	Preserve existing trees to the extent possible.
D.2.46	Provide the same number of parking spaces (or more) as exist today to the extent possible.
D.2.47	Consider opportunities for sustainable practices such as augmenting the permeability of surfaces, mitigating the heat island effect and producing renewable energy.
D.2.48	Consider creative lighting of the space, such as in-ground lights, to create identity and unique evening/ nightscape experience.

TABLE 3-2 (Continued)
MENLO PARK EL CAMINO REAL AND DOWNTOWN SPECIFIC PLAN DRAFT
STANDARDS, GUIDELINES, AND POLICIES

Note: Unless listed as a Standard or a Policy, the numbers in the left column refer to Specific Plan Guidelines.

D.2 DOWNTOWN (cont.)	
Crane Street and Chestnut Street/Oak Grove Avenue Pocket Parks	
The design of the pocket parks should include the following:	
D.2.49	Convey a "soft" character with ample use of softscape materials (e.g., grass and planting).
D.2.50	Provide shade and seating.
D.2.51	Consider use of seasonal plant materials and public art installation.
D.2.52	Emphasize safety and comfort for all users.
Other Street / Alley Improvements	
The design of the pedestrian connectors should include the following:	
D.2.53	Incorporate an 8-foot clear pedestrian zone.
D.2.54	Be tree-lined for shade and properly lit for pedestrian safety.
D.2.55	Provide safe crosswalks on Chestnut and Crane Streets for continuity of the network of connections.
D.2.56	Include way-finding signage.
D.2.57	Coordinate treatment with pocket parks and overall streetscape palette for Santa Cruz Avenue.
D.3 STATION AREA	
Civic Plaza + Santa Cruz Avenue	
The design of the Civic Plaza should include the following:	
Standard D.3.01	Preserve and highlight the existing historic train station building.
Standard D.3.02	Accommodate bus turning and drop-off/pick-up of passengers.
D.3.03	Provide a unifying treatment across the Plaza.
D.3.04	Allow for integrated vehicular circulation through the space.
D.3.05	Organize the plaza around, and integrate into its overall design, a central civic feature such as a fountain or sculpture; the major element should be located in a way that optimizes visibility from downtown, in particular from Santa Cruz Avenue.
D.3.06	Consider use of iconic trees to create a unique sense of civic space, such as native oak trees, maples, sycamores, or redwoods, that are distinctive from general surrounding landscaping but already featured at the station.
D.3.07	Incorporate lighting fixtures and decorative lighting to create a memorable space.
D.3.08	Accommodate various connection options across the Caltrain right-of-way depending on the final configuration of the high-speed rail line.
D.3.09	Provide 15 foot tree-lined sidewalk on the northern side of Santa Cruz Avenue, coordinated with improved sidewalks for the main part of the avenue downtown.
D.3.010	Optimize the interface with Menlo Center and connection to its plaza.
D.3.11	Improve the pedestrian linkage to Oak Grove Avenue.
Menlo Center Plaza	
Enhancements to the Menlo Center Plaza should include the following:	
D.3.12	Coordinate with enhancements to El Camino Real streetscape and Civic Plaza.
D.3.13	Include benches or other seating furniture.
D.3.14	Provide a direct connection with the station Civic Plaza.
Alma Street Civic Walk	
The design of the Alma Street Civic Walk should include the following:	
D.3.15	Take into consideration the final configuration of the proposed high speed rail.
D.3.16	Provide a 15 foot minimum tree-lined sidewalk on the east side of Alma Street between the station area and Ravenswood Avenue, with an 8 foot wide minimum pedestrian thru zone

TABLE 3-2 (Continued)
MENLO PARK EL CAMINO REAL AND DOWNTOWN SPECIFIC PLAN DRAFT
STANDARDS, GUIDELINES, AND POLICIES

Note: Unless listed as a Standard or a Policy, the numbers in the left column refer to Specific Plan Guidelines.

D.3 STATION AREA (cont.)	
Alma Street Civic Walk (cont.)	
D.3.17	Be safely lit to reinforce the pedestrian experience.
D.3.18	Coordinate with other improvements in the station area, creating a greater sense of connectivity and continuity.
D.3.19	Provide a safe pedestrian crosswalk between Civic Walk and the train station/Civic Plaza, depending on the final configuration of the proposed high speed rail and consistent with the guidelines for the Civic Plaza.
D.3.20	Incorporate a safe and upgraded pedestrian crossing at Ravenswood Avenue. Potential crossing improvements are discussed in more detail in section F.3 [of the Specific Plan].
D.3.21	Include pedestrian way-finding signage.
D.3.22	Preserve to the extent feasible heritage and other significant trees.
Ravenswood Gateway	
The design of the Ravenswood Gateway should include the following:	
D.3.23	Coordinate streetscape and landscape design improvements with Alma Street Civic Walk and station Civic Plaza.
D.3.24	Coordinate crossing treatment with Alma Street Civic Walk.
D.3.25	Consider use of iconic trees to create a unique sense of civic space, such as native oak trees, maples, sycamores, or redwoods, that are distinctive from the general surrounding landscaping but are already featured in the area.
D.3.26	Integrate lighting to achieve gateway and civic character.
D.3.27	Include a landmark sign or art element.
D.3.28	Include pedestrian way-finding signage.
Railroad Tracks/High Speed Rail Open Space	
D.3.29	If high speed rail is placed underground, the City should encourage a final configuration that includes Caltrain tracks. Such a configuration should be capped, with the roof of the tunnel able to accommodate public use, such as a linear park, at-grade.
D.3.30	If high speed rail is placed underground as described above, a linear public park, accommodating pedestrians and bicyclists, should be considered for placement above ground as well as other appropriate commercial uses.
D.3.31	If high speed rail is elevated, the City should encourage a final configuration that includes Caltrain tracks. With such a configuration, the City should encourage a structure that provides maximum “porosity” with maximum visual and/or physical access underneath (e.g., elevated Bart tracks in the East Bay). The tracks should be elevated enough to allow for at-grade passage underneath for vehicles, bicyclists and pedestrians. An earthen embankment or stark walls should be avoided. Wherever possible, an elevated configuration should incorporate landscaping to soften the visual impact.
D.3.32	If high speed rail is elevated as described above, the City should consider maximizing east-west pedestrian and bicycle connections underneath, in addition to those in the Specific Plan, where appropriate. The spaces should be safe and welcoming.
D.4 EL CAMINO REAL	
The design of the sidewalks along El Camino Real, whether within the El Camino Real corridor or within adjacent setback areas, should include the following:	
D.4.01	Take into consideration recommended criteria of the Grand Boulevard Initiative’s *Multi-Modal Access Strategy & Context-Sensitive Design Guidelines*.
D.4.02	Be 15 feet wide, at a minimum, on the east side of El Camino Real, inclusive of a 10-foot wide clear pedestrian thru zone, north of Oak Grove Avenue and south of Menlo Avenue.
D.4.03	Be 12 feet wide, at a minimum, on the east side of El Camino Real, inclusive of an 8-foot wide clear pedestrian thru zone, in the downtown area between Oak Grove Avenue and Menlo Avenue.
D.4.04	Be 12 feet wide, at a minimum, on the west side of El Camino Real, inclusive of an 8-foot wide clear pedestrian thru zone.
D.4.05	Incorporate a coordinated set of streetscape improvements, including street trees, paving and lighting.

TABLE 3-2 (Continued)
MENLO PARK EL CAMINO REAL AND DOWNTOWN SPECIFIC PLAN DRAFT
STANDARDS, GUIDELINES, AND POLICIES

Note: Unless listed as a Standard or a Policy, the numbers in the left column refer to Specific Plan Guidelines.

D.4 EL CAMINO REAL (cont.)	
East-West Connectivity	
The design of intersection improvements on El Camino Real should include the following:	
D.4.06	Take into consideration recommended criteria of the Grand Boulevard Initiative's *Multi-Modal Access Strategy & Context-Sensitive Design Guidelines*.
D.4.07	Optimize crossing time by reducing curb-to-curb distance to the extent feasible.
D.4.08	Optimize safety and comfort with appropriate striping, ramps and warning pavers and other accessibility requirements.
D.4.09	Integrate additional landscaping and "low impact development" (LID) materials, such as pervious materials to manage storm water, where possible.
D.4.10	Incorporate special treatment for intersections in the downtown/station areas (i.e., Oak Grove Avenue, Santa Cruz Avenue and Menlo Avenue) to enhance connections between the two areas.
D.4.11	Coordinate street trees, lighting, paving and other key streetscape elements with other streetscape elements of El Camino Real above.
Burgess Park Linkage/Open Space Plaza	
The design of the open space plaza and pedestrian/bicycle linkage should include the following:	
D.4.12	Visually extend Middle Avenue.
D.4.13	Allow for seating and informal gatherings.
D.4.14	Provide green space and shaded areas.
D.4.15	Integrate with vehicular access needs and associated development.
D.4.16	Provide a pedestrian and bicycle linkage between El Camino Real, the new open space and Burgess Park at Middle Avenue; this linkage would involve a grade separated crossing if tracks remain at grade.
D.4.17	Emphasize safety and comfort for all users.
D.5 GENERAL GUIDELINES	
Walkable Streets	
D.5.01	All pedestrian pathways should be continuous, direct, shaded and lit for safety.
Streetscape Palette	
D.5.02	The streetscape palette should be consistent and coordinated across downtown and the station area for main streetscape elements. The streetscape palette should also be consistent for El Camino Real.
Street Trees and Planting Materials	
D.5.03	The street tree canopy should be extended for shade, and street tree rows completed for continuity.
D.5.04	Iconic/differentiated trees should be used for civic spaces.
D.5.05	Indigenous plant materials should be used for reduced water consumption.
D.5.06	Deciduous/flowering plants could be used, where appropriate, for seasonal variation and additional interest.
Signage	
D.5.07	Signage should be coordinated, and it could be used to enhance downtown identity.
D.5.08	A comprehensive pedestrian way-finding system should be implemented.
Public Art	
D.5.09	Public art could be used to create focal points and mark destinations.
D.5.10	Public art could be incorporated into pathways (e.g., interpretive walk).
D.5.11	Temporary public art could be installed throughout downtown.
D.5.12	Public art could include lighting.
Durability and Maintenance	
D.5.13	Durability and easy maintenance should be considered when selecting streetscape furnishings.

TABLE 3-2 (Continued)
MENLO PARK EL CAMINO REAL AND DOWNTOWN SPECIFIC PLAN DRAFT
STANDARDS, GUIDELINES, AND POLICIES

Note: Unless listed as a Standard or a Policy, the numbers in the left column refer to Specific Plan Guidelines.

D.5 GENERAL GUIDELINES (cont.)	
Accessibility	
D.5.14	Applicable accessibility codes shall be integrated into streetscape and public space design.
Surface Parking Guidelines	
Surface parking should include the following:	
D.5.15	Visually attractive, particularly when seen from streets and public spaces.
D.5.16	Address security and safety concerns with adequate lighting and sight lines.
D.5.17	Preserve existing mature trees to the extent possible.
D.5.18	Incorporate canopy trees for shade.
D.5.19	Introduce safe pedestrian pathways, connecting the parking lot to building entries and public sidewalks, using elements such as marked crossings, clear signage and supplementary lighting.
D.5.20	To reduce water consumption and heat island effect, parking lots should incorporate shade, use indigenous plant materials and use permeable materials, where appropriate.
D.6 SUSTAINABLE PRACTICES	
Walkable Streets	
D.6.01	Healthy activity and walking should be encouraged through well designed and attractive public spaces.
D.6.02	Shaded streets and public spaces that optimize use and activity should be provided.
Stormwater Management	
D.6.03	Pervious materials should be used on sidewalks and other paved surfaces wherever possible to minimize storm-water run-off from paved surfaces.
D.6.04	Large soil-filled, planted catch basins are encouraged as a part of sidewalk design. They should be coordinated with street trees, lighting, and infrastructure on the street.
Heat Island Affect Reduction	
D.6.05	Dark colored paved areas should be minimized.
D.6.06	Greening and the shading of paved areas are encouraged.
Reduced Water Consumption, Maintenance and Durability	
D.6.07	Indigenous and drought-resistant plant materials should be used.
Reduced Energy Consumption	
D.6.08	Energy consumption in landscape elements should be minimized through these techniques: • Solar power fixtures. • Downward path lighting. • Motion sensor lights or lighting controlled by timers set to turn off at the earliest practicable hour. • Gravity fed water features/systems.
E.3 DEVELOPMENT STANDARDS AND GUIDELINES	
E.3.1 Development Intensity	
Standard E.3.1.01	Business and Professional office (inclusive of medical and dental office) shall not exceed one half of the base FAR or public benefit bonus FAR, whichever is applicable.
Standard E.3.1.02	Medical and Dental office shall not exceed one third of the base FAR or public benefit bonus FAR, whichever is applicable.
E.3.2 Height	
Standard E.3.2.01	Roof-mounted mechanical equipment, solar panels, and similar equipment may exceed the maximum building height, but shall be screened from view from publicly-accessible spaces.
Standard E.3.2.02	Vertical building projections such as parapets and balcony railings may extend up to 4 feet beyond the maximum façade height or the maximum building height, and shall be integrated into the design of the building.

TABLE 3-2 (Continued)
MENLO PARK EL CAMINO REAL AND DOWNTOWN SPECIFIC PLAN DRAFT
STANDARDS, GUIDELINES, AND POLICIES

Note: Unless listed as a Standard or a Policy, the numbers in the left column refer to Specific Plan Guidelines.

E.3 DEVELOPMENT STANDARDS AND GUIDELINES (cont.)	
E.3.2 Height (cont.)	
Standard E.3.2.03	Rooftop elements that may need to exceed the maximum building height due to their function, such as stair and elevator towers, may extend up to 14 feet beyond the maximum building height. Such rooftop elements shall be integrated into the design of the building.
E.3.3 Setbacks and Projections within Setbacks	
Standard E.3.3.01	Front setback areas shall be developed with sidewalks, plazas, and/or landscaping as appropriate.
Standard E.3.3.02	Parking shall not be permitted in front setback areas.
Standard E.3.3.03	In areas where no or a minimal setback is required, limited setback for store or lobby entry recesses shall not exceed a maximum of 4-foot depth and a maximum of 6-foot width.
Standard E.3.3.04	In areas where no or a minimal setback is required, building projections, such as balconies, bay windows and dormer windows, shall not project beyond a maximum of 3 feet from the building face into the sidewalk clear walking zone, public right-of-way or public spaces, provided they have a minimum 8-foot vertical clearance above the sidewalk clear walking zone, public right-of-way or public space.
Standard E.3.3.05	In areas where setbacks are required, building projections, such as balconies, bay windows and dormer windows, at or above the second habitable floor shall not project beyond a maximum of 5 feet from the building face into the setback area.
Standard E.3.3.06	The total area of all building projections shall not exceed 35% of the primary building façade area. Primary building façade is the façade built at the property or setback line.
Standard E.3.3.07	Architectural projections like canopies, awnings and signage shall not project beyond a maximum of 6 feet horizontally from the building face at the property line or at the minimum setback line. There shall be a minimum of 8-foot vertical clearance above the sidewalk, public right-of-way or public space.
Standard E.3.3.08	No development activities may take place within the San Francisquito Creek bed, below the creek bank, or in the riparian corridor.
E.3 LAND USE DESIGNATIONS, ZONING DISTRICTS AND USE REGULATIONS	
E.3.4 Massing and Modulation	
E.3.4.1 Building Breaks	
Standard E.3.4.1.01	The total of all building breaks shall not exceed 25 percent of the primary façade plane in a development.
Standard E.3.4.1.02	Building breaks shall be located at ground level and extend the entire building height.
Standard E.3.4.1.03	In all districts except the ECR-SE zoning district, recesses that function as building breaks shall have minimum dimensions of 20 feet in width and depth and a maximum dimension of 50 feet in width. For the ECR-SE zoning district, recesses that function as building breaks shall have a minimum dimension of 60 feet in width and 40 feet in depth.
Standard E.3.4.1.04	Building breaks shall be accompanied with a major change in fenestration pattern, material and color to have a distinct treatment for each volume.
Standard E.3.4.1.05	In all districts except the ECR-SE zoning district, building breaks shall be required as shown in Table E3.
Standard E.3.4.1.06	In the ECR-SE zoning district, and consistent with Table E4 the building breaks shall: • Comply with Figure E9; • Be a minimum of 60 feet in width, except where noted on Figure E9; • Be a minimum of 120 feet in width at Middle Avenue; • Align with intersecting streets, except for the area between Roble Avenue and Middle Avenue; • Be provided at least every 350 feet in the area between Roble Avenue and Middle Avenue; where properties under different ownership coincide with this measurement, the standard side setbacks (10 to 25 feet) shall be applied, resulting in an effective break of between 20 to 50 feet. • Extend through the entire building height and depth at Live Oak Avenue, Roble Avenue, Middle Avenue, Partridge Avenue and Harvard Avenue; and • Include two publicly-accessible building breaks at Middle Avenue and Roble Avenue.

TABLE 3-2 (Continued)
MENLO PARK EL CAMINO REAL AND DOWNTOWN SPECIFIC PLAN DRAFT
STANDARDS, GUIDELINES, AND POLICIES

Note: Unless listed as a Standard or a Policy, the numbers in the left column refer to Specific Plan Guidelines.

E.3 LAND USE DESIGNATIONS, ZONING DISTRICTS AND USE REGULATIONS (cont.)	
E.3.4 Massing and Modulation (cont.)	
E.3.4.1 Building Breaks (cont.)	
Standard E.3.4.1.07	In the ECR-SE zoning district, the Middle Avenue break shall include vehicular access; publicly-accessible open space with seating, landscaping and shade; retail and restaurant uses activating the open space; and a pedestrian/bicycle connection to Alma Street and Burgess Park. The Roble Avenue break shall include publicly-accessible open space with seating, landscaping and shade.
E.3.4.1.08	In the ECR-SE zoning district, the breaks at Live Oak, Roble, Middle, Partridge and Harvard Avenues may provide vehicular access.
E.3.4.2 Façade Modulation and Treatment	
Standard E.3.4.2.01	Building façades facing public rights-of-way or public open spaces shall not exceed 50 feet in length without a minor building façade modulation. At a minimum of every 50' façade length, the **minor vertical façade modulation** shall be a minimum 2 feet deep by 5 feet wide recess or a minimum 2 foot setback of the building plane from the primary building façade.
Standard E.3.4.2.02	Building façades facing public rights-of-way or public open spaces shall not exceed 100 feet in length without a major building modulation. At a minimum of every 100 feet of façade length, a **major vertical façade modulation** shall be a minimum of 6 feet deep by 20 feet wide recess or a minimum of 6 feet setback of building plane from primary building façade for the full height of the building. This standard applies to all districts except ECR NE-L and ECR SW since those two districts are required to provide a building break at every 100 feet.
Standard E.3.4.2.03	In addition, the major building façade modulation shall be accompanied with a 4-foot minimum height modulation and a major change in fenestration pattern, material and/or color.
E.3.4.2.04	Minor façade modulation may be accompanied with a change in fenestration pattern, and/or material, and/or color, and/or height.
E.3.4.2.05	Buildings should consider sun shading mechanisms, like overhangs, *bris soleils* and clerestory lighting, as façade articulation strategies.
E.3.4.3 Building Profile	
Standard E.3.4.3.01	The 45-degree building profile shall be set at the minimum setback line to allow for flexibility and variation in building façade height within a district.
Standard E.3.4.3.02	Horizontal building and architectural projections, like balconies, bay windows, dormer windows, canopies, awnings, and signage, beyond the 45-degree building profile shall comply with the standards for Building Setbacks & Projection within Setbacks (E.3.3.04 to E.3.3.07) and shall be integrated into the design of the building.
Standard E.3.4.3.03	Vertical building projections like parapets and balcony railings shall not extend 4 feet beyond the 45-degree building profile and shall be integrated into the design of the building.
Standard E.3.4.3.04	Rooftop elements that may need to extend beyond the 45-degree building profile due to their function, such as stair and elevator towers, shall be integrated into the design of the building.
E.3.4.4 Upper Story Façade Length	
Standard E.3.4.4.01	Building stories above the 38-foot façade height shall have a maximum allowable façade length of 175 feet along a public right-of-way or public open space.
E.3.5 Building Ground Floor, Entry and Retail Frontage Treatment	
Ground Floor Treatment	
Standard E.3.5.01	The retail or commercial ground floor shall be a minimum 15-foot floor-to-floor height to allow natural light into the space.
Standard E.3.5.02	Ground floor commercial buildings shall have a minimum of 50% transparency (i.e., clear-glass windows) for retail uses, office uses and lobbies to enhance the visual experience from the sidewalk and street. Heavily tinted or mirrored glass shall not be permitted.
E.3.5.03	Buildings should orient ground-floor retail uses, entries and direct-access residential units to the street.
E.3.5.04	Buildings should activate the street by providing visually interesting and active uses, such as retail and personal service uses, in ground floors that face the street. If office and residential uses are provided, they should be enhanced with landscaping and interesting building design and materials.
E.3.5.05	For buildings where ground floor retail, commercial or residential use are not desired or viable, other project related uses, such as a community room, fitness center, daycare facility or sales center, should be located at the ground floor to activate the street.

TABLE 3-2 (Continued)
MENLO PARK EL CAMINO REAL AND DOWNTOWN SPECIFIC PLAN DRAFT
STANDARDS, GUIDELINES, AND POLICIES

Note: Unless listed as a Standard or a Policy, the numbers in the left column refer to Specific Plan Guidelines.

E.3 LAND USE DESIGNATIONS, ZONING DISTRICTS AND USE REGULATIONS (cont.)	
E.3.5 Building Ground Floor, Entry and Retail Frontage Treatment (cont.)	
Ground Floor Treatment (cont.)	
E.3.5.06	Blank walls at ground floor are discouraged and should be minimized. When unavoidable, continuous lengths of blank wall at the street should use other appropriate measures such as landscaping or artistic intervention, such as murals.
E.3.5.07	Residential units located at ground level should have their floors elevated a minimum of 2 feet to a maximum of 4 feet above the finished grade sidewalk for better transition and privacy, provided that local accessibility codes are met.
E.3.5.08	Architectural projections like canopies and awnings should be integrated with the ground floor and overall building design to break up building mass, to add visual interest to the building and provide shelter and shade.
Building Entries	
Standard E.3.5.09	Building entries should be oriented to a public street or other public space. For larger residential buildings with shared entries, the main entry shall be through prominent entry lobbies or central courtyards facing the street; these entries and courtyards provide additional visual interest, orientation and a sense of invitation.
E.3.5.10	Entries should be prominent and visually distinctive from the rest of the façade with creative use of scale, materials, glazing, projecting or recessed forms, architectural details, color, and/or awnings.
E.3.5.11	Multiple entries at street level are encouraged where appropriate.
E.3.5.12	Ground floor residential units are encouraged to have their entrance from the street.
E.3.5.13	Stoops and entry steps from the street are encouraged for individual unit entries when compliant with applicable accessibility codes. Stoops associated with landscaping create inviting, usable, and visually attractive transitions from private spaces to the street.
E.3.5.14	Building entries are allowed to be recessed from the primary building façade.
Retail Frontage	
Standard E.3.5.15	Windows shall be recessed from the primary building façade a minimum of 6 inches.
Standard E.3.5.16	Retail frontage, whether ground floor or upper floor shall have a minimum 50% of the façade area transparent with clear vision glass, not heavily tinted or highly mirrored glass.
E.3.5.17	Storefront design should be consistent with the building's overall design and contribute to establishing a well defined ground floor for the facades along streets
E.3.5.18	The distinction between individual storefronts, entire building façade, and adjacent properties should be maintained.
E.3.5.19	Storefront elements (windows, entrances, and signage) should provide clarity and lend interest to facades.
E.3.5.20	Individual storefronts should have clearly defined bays. These bays should be no greater than 20 feet in length. Architectural elements, such as piers, recesses and projections help articulate bays.
E.3.5.21	All individual retail uses should have direct access from the public sidewalk. For larger retail tenants, entries should occur at lengths at a maximum at every 50 feet, consistent with the typical lot size in downtown.
E.3.5.22	Recessed doorways for retail uses should be a minimum of two feet in depth. Recessed doorways provide cover or shade, help identify the location of store entrances, provide a clear area for out-swinging doors and offer the opportunity for interesting paving patterns, signage and displays.
E.3.5.23	Storefronts should remain un-shuttered at night and provide clear views of interior spaces lit from within. If storefronts must be shuttered for security reasons, the shutters should be located on the inside of the store windows and allow for maximum visibility of the interior.
E.3.5.24	Storefronts should not be completely obscured with display cases that prevent customers and pedestrians from seeing inside.
E.3.5.25	Signage should not be attached to storefront windows.
E.3.6 Open Space	
Standard E.3.6.01	Residential developments or Mixed Use developments with residential use shall have a minimum of 100 square feet of open space per unit created as common open space or a minimum of 80 square feet of open space per unit created as private open space, where private open space shall have a minimum dimension of 6 feet by 6 feet. In case of a mix of private and common open space, such common open space shall be provided at a ratio equal to 1.25 square feet for each one square foot of private open space that is not provided.

TABLE 3-2 (Continued)
MENLO PARK EL CAMINO REAL AND DOWNTOWN SPECIFIC PLAN DRAFT
STANDARDS, GUIDELINES, AND POLICIES

Note: Unless listed as a Standard or a Policy, the numbers in the left column refer to Specific Plan Guidelines.

E.3 LAND USE DESIGNATIONS, ZONING DISTRICTS AND USE REGULATIONS (cont.)	
E.3.6 Open Space (cont.)	
Standard E.3.6.02	Residential open space (whether in common or private areas) and accessible open space above parking podiums up to 16 feet high shall count towards the minimum open space requirement for the development.
E.3.6.03	Private and/or common open spaces are encouraged in all developments as part of building modulation and articulation to enhance building façade.
E.3.6.04	Private development should provide accessible and usable common open space for building occupants and/or the general public.
E.3.6.05	For residential developments, private open space should be designed as an extension of the indoor living area, providing an area that is usable and has some degree of privacy.
E.3.6.06	Landscaping in setback areas should define and enhance pedestrian and open space areas. It should provide visual interest to streets and sidewalks, particularly where building façades are long.
E.3.6.07	Landscaping of private open spaces should be attractive, durable and drought-resistant.
E.3.7 Parking, Service and Utilities	
E.3.7.01	The location, number and width of parking and service entrances should be limited to minimize breaks in building design, sidewalk curb cuts and potential conflicts with streetscape elements.
E.3.7.02	In order to minimize curb cuts, shared entrances for both retail and residential use are encouraged. In shared entrance conditions, secure access for residential parking should be provided.
E.3.7.03	When feasible, service access and loading docks should be located on secondary streets or alleys and to the rear of the building.
E.3.7.04	The size and pattern of loading dock entrances and doors should be integrated with the overall building design.
E.3.7.05	Loading docks should be screened from public ways and adjacent properties to the greatest extent possible. In particular, buildings that directly adjoin residential properties should limit the potential for loading related impacts, such as noise. Where possible, loading docks should be internal to the building envelope and equipped with closable doors. For all locations, loading areas should be kept clean.
E.3.7.06	Surface parking should be visually attractive, address security and safety concerns, retain existing mature trees and incorporate canopy trees for shade. See Section D.5 for more compete guidelines regarding landscaping in parking areas.
Utilities	
E.3.7.07	All utilities in conjunction with new residential and commercial development should be placed underground.
E.3.7.08	Above ground meters, boxes and other utility equipment should be screened from public view through use of landscaping or by integrating into the overall building design.
Parking Garages	
Standard E.3.7.09	To promote the use of bicycles, secure bicycle parking shall be provided at the street level of public parking garages. Bicycle parking is also discussed in more detail in Section F.5 [of the Specific Plan] “Bicycle Storage Standards and Guidelines.”
E.3.7.10	Parking garages on downtown parking plazas should avoid monolithic massing by employing change in façade rhythm, materials and/or color.
E.3.7.11	To minimize or eliminate their visibility and impact from the street and other significant public spaces, parking garages should be underground, wrapped by other uses (i.e., parking podium within a development), and/or screened from view through architectural and/or landscape treatment.
E.3.7.12	Whether free-standing or incorporated into overall building design, garage facades should be designed with a modulated system of vertical openings and pilasters, with design attention to an overall building façade that fits comfortably and compatibly into the pattern, articulation, scale and massing of surrounding building character.
E.3.7.13	Shared parking is encouraged where feasible to minimize space needs, and is effectively codified through the plan’s off-street parking standards and allowance for shared parking studies.
E.3.6.14	A parking garage roof should be approached as a usable surface and an opportunity for sustainable strategies, such as installment of a green roof, solar panels or other measures that minimize the heat island effect.

TABLE 3-2 (Continued)
MENLO PARK EL CAMINO REAL AND DOWNTOWN SPECIFIC PLAN DRAFT
STANDARDS, GUIDELINES, AND POLICIES

Note: Unless listed as a Standard or a Policy, the numbers in the left column refer to Specific Plan Guidelines.

E.3 LAND USE DESIGNATIONS, ZONING DISTRICTS AND USE REGULATIONS (cont.)	
E.3.8 Sustainable Practices	
Standard E.3.8.01	Unless the Specific Plan area is explicitly exempted, all citywide sustainability codes or requirements shall apply.
E.3.8.02	Because green building standards are constantly evolving, the requirements in this section should be reviewed and updated on a regular basis of at least every two years.
E.3.8.03	LEED certification, per the applicable LEED rating system, at a silver level or higher, shall be required for the types of projects listed below. Such applicable LEED rating systems include The applicable LEED® versions of performance standards are: LEED® New Construction; LEED® Core and Shell; LEED® New Homes; LEED® Schools; and LEED® Commercial Interiors. LEED certification, at a silver lever or higher, shall be required for: • Newly constructed residential buildings of Group R (single-family, duplex and multi-family); • Newly constructed commercial buildings of Group B (occupancies including among others office, professional and service type transactions) and Group M (occupancies including among others display or sale of merchandise such as department stores, retail stores, wholesale stores, markets and sales rooms) that are 5,000 gross square feet or more; • New first-time build-outs of commercial interiors that are 20,000 gross square feet or more in buildings of Group B and M occupancies; and • Major alterations that are 20,000 gross square feet or more in existing buildings of Group B, M and R occupancies, where interior finishes are removed and significant upgrades to structural and mechanical, electrical and/or plumbing systems are proposed. All residential and/or mixed use developments of sufficient size to require LEED certification under the Specific Plan shall install one dedicated electric vehicle/plug-in hybrid electric vehicle recharging station for every 20 residential parking spaces provided. Per the Climate Action Plan the complying applicant could receive incentives, such as streamlined permit processing, fee discounts, or design templates.
E.3.8.04	The development of larger projects allows for more comprehensive sustainability planning and design, such as efficiency in water use, stormwater management, renewable energy sources and carbon reduction features. A larger development project is defined as one with two or more buildings on a lot one acre or larger in size. Such development projects should have sustainability requirements and GHG reduction targets that address neighborhood planning, in addition to the sustainability requirements for individual buildings (See Standard E.3.8.03 above). These should include being certified at a LEED-ND (neighborhood development), at a silver level or higher, and mandating a phased reduction of GHG emissions over a period of time as prescribed in the 2030 Challenge.
Building Design Guidelines	
E.3.8.05	Buildings should incorporate narrow floor plates to allow natural light deeper into the interior.
E.3.8.06	Buildings should reduce use of daytime artificial lighting through design elements, such as bigger wall openings, light shelves, clerestory lighting, skylights, and translucent wall materials.
E.3.8.07	Buildings should allow for flexibility to regulate the amount of direct sunlight into the interiors. Louvered wall openings or shading devices like *bris soleils* help control solar gain and check overheating. *Bris soleils*, which are permanent sun-shading elements, extend from the sun-facing façade of a building, in the form of horizontal or vertical projections depending on sun orientation, to cut out the sun's direct rays, help protect windows from excessive solar light and heat and reduce glare within.
E.3.8.08	Where appropriate, buildings should incorporate arcades, trellis and appropriate tree planting to screen and mitigate south and west sun exposure during summer. This guideline would not apply to downtown, the station area and the west side of El Camino Real where buildings have a narrower setback and street trees provide shade.
E.3.8.09	Operable windows are encouraged in new buildings for natural ventilation.
E.3.8.10	To maximize use of solar energy, buildings should consider integrating photovoltaic panels on roofs.
E.3.8.11	Inclusion of recycling centers in kitchen facilities of commercial and residential buildings shall be encouraged. The minimum size of recycling centers in commercial buildings should be 20 cubic feet (48 inches wide x 30 inches deep x 24 inches high) to provide for garbage and recyclable materials.
Stormwater and Wastewater Management Guidelines	
E.3.8.12	Buildings should incorporate intensive or extensive green roofs in their design. Green roofs harvest rain water that can be recycled for plant irrigation or for some domestic uses. Green roofs are also effective in cutting-back on the cooling load of the air-conditioning system of the building and reducing the heat island effect from the roof surface.
E.3.8.13	Projects should use porous material on driveways and parking lots to minimize stormwater run-off from paved surfaces.

TABLE 3-2 (Continued)
MENLO PARK EL CAMINO REAL AND DOWNTOWN SPECIFIC PLAN DRAFT
STANDARDS, GUIDELINES, AND POLICIES

Note: Unless listed as a Standard or a Policy, the numbers in the left column refer to Specific Plan Guidelines.

E.3 LAND USE DESIGNATIONS, ZONING DISTRICTS AND USE REGULATIONS (cont.)	
3.8.3 Sustainable Practices (cont.)	
Landscaping Guidelines	
E.3.8.4.14	Planting plans should support passive heating and cooling of buildings and outdoor spaces.
E.3.8.4.15	Regional native and drought resistant plant species are encouraged as planting material.
E.3.8.4.16	Provision of efficient irrigation system is recommended, consistent with the City's Municipal Code Chapter 12.44 "Water-Efficient Landscaping".
Lighting	
Standard E.3.8.4.17	Exterior lighting fixtures shall use fixtures with low cut-off angles, appropriately positioned, to minimize glare into dwelling units and light pollution into the night sky.
Standard E.3.8.4.18	Lighting in parking garages shall be screened and controlled so as not to disturb surrounding properties, but shall ensure adequate public security.
E.3.8.4.19	Energy-efficient and color-balanced outdoor lighting, at the lowest lighting levels possible, are encouraged to provide for safe pedestrian and auto circulation.
E.3.8.4.20	Improvements should use ENERGY STAR qualified fixtures to reduce a building's energy consumption.
E.3.8.4.21	Installation of high-efficiency lighting systems with advanced lighting control, including motion sensors tied to dimmable lighting controls or lighting controlled by timers set to turn off at the earliest practicable hour, are recommended.
Green Building Material Guidelines	
E.3.8.4.22	The reuse and recycle of construction and demolition materials is recommended. The use of demolition materials as a base course for a parking lot keeps materials out of landfills and reduces costs.
E.3.8.4.23	The use of products with identifiable recycled content, including post-industrial content with a preference for post-consumer content, are encouraged.
E.3.8.4.24	Building materials, components, and systems found locally or regionally should be used, thereby saving energy and resources in transportation.
E.3.8.4.25	A design with adequate space to facilitate recycling collection and to incorporate a solid waste management program, preventing waste generation, is recommended.
E.3.8.4.26	The use of material from renewable sources is encouraged.
F.5 BICYCLE STORAGE STANDARDS AND GUIDELINES	
Standard F.5.01	Outside downtown, new commercial development shall provide secure bicycle and storage facilities for long-term occupants (e.g., employees and residents) on-site.
Standard F.5.02	Outside downtown, new commercial and residential development shall provide bicycle parking spaces for longterm occupants and short-term visitors (e.g., employees and guests, respectively), per the requirements in Table F1.
Standard F.5.03	In downtown, new commercial and residential development shall provide secure bicycle storages facilities for long-term occupants and bicycle parking spaces for long-term occupants and short-term visitors, per the requirements in Table F1 and as follows: • Bicycle parking for the first 1.0 FAR can be accommodated in public facilities; and • Bicycle parking for additional FAR, up to the zoning district maximum, can be accommodated either/both on-site and/or in public facilities if the City has established an in-lieu off-site bicycle parking program and the required number of spaces is available; in-lieu fee may be required.
F.5.04	Visitor and customer bicycle racks should be positioned in areas with active visual surveillance and night lighting, and protected from damage from nearby vehicles.
F.5.05	Outside downtown, bicycle racks should be located within 50 feet of each building's main entries. For retail buildings or other buildings with multiple main entries, bicycle racks should be proportionally disbursed within 50 feet of business or other main entries.
PARKING DEMAND AND SUPPLY POLICIES	
Policy 1	City to set up system to monitor parking supply and demand, including the number of spaces that must be accommodated by those displaced by public amenity improvements.
Policy 2	For parcels that are not associated with private parking lots that are currently part of the P (Parking) district: a. Parking for the first 1.0 FAR can be accommodated in public parking plazas, consistent with current policy; no in-lieu fee required; and

TABLE 3-2 (Continued)
MENLO PARK EL CAMINO REAL AND DOWNTOWN SPECIFIC PLAN DRAFT
STANDARDS, GUIDELINES, AND POLICIES

Note: Unless listed as a Standard or a Policy, the numbers in the left column refer to Specific Plan Guidelines.

PARKING DEMAND AND SUPPLY POLICIES (cont.)	
Policy 2 (cont.)	b. Parking for additional FAR, up to the zoning district maximum, can be accommodated either/both: i. On-site; and/or ii. In public parking plazas if the required number of spaces is available; in-lieu fee required.
Policy 3	For parcels that are associated with private parking lots that are currently part of the P (Parking) district (see Figure F5 [of the Specific Plan]): a. If a P parcel is redeveloped, parking for the first 1.0 FAR can be satisfied by accommodating the parking provided by the P district parcel either/both: i. On-site (e.g. underground); and/or ii. In public parking plazas if the required number of spaces is available; in-lieu fee required. b. Parking for additional FAR, up to the zoning district maximum, can be accommodated either/both: i. On-site; and/or ii. In public parking plazas if the required number of spaces is available; in-lieu fee required.

TABLE 3-3
DEVELOPMENT STANDARDS

Area		Zoning District		Development Intensity			Building Heights	
				Land Use	FAR[1]	DU/Acre	Height Max	Façade Height Max
EL CAMINO REAL	El Camino Real North	ECR NW	El Camino Real North-West	Mixed Use/ Residential	1.10 (1.50)	25.0 (40.0)	38’	38’
		ECR NE-L	El Camino Real North-East-Low Density	Mixed Use	0.75 (1.10)	20.0 (30.0)	38’	30’
		ECR NE	El Camino Real North-East	Mixed Use	1.10 (1.50)	25.0 (40.0)	38’ (48’ public benefit bonus height)*	38’
		ECR NE-R	El Camino Real North-East-Residential Emphasis	Mixed Use/ Residential	1.10 (1.50)	32.0 (50.0)	38’ (48’ public benefit bonus height) *	38’
	El Camino Real South	ECR SW	El Camino Real South-West	Mixed Use and Mixed Use/ Residential	1.10 (1.50)	25.0 (40.0)	38’	30’
		ECR SE	El Camino Real South-East	Mixed Use and Mixed Use/ Residential	1.25 (1.75)	40.0 (60.0)	60	38’
Station		SA W	Station Area West	Retail/ Mixed Use and Main Street Overlay	2.00 (2.25)	50.0 (60.0)	48’	38’
		SA E	Station Area East	Retail/ Mixed Use and Main Street Overlay	1.35 (1.75)	50.0 (60.0)	60’ (Alma Street - 48’)	38’
Downtown		DA	Downtown Adjacent	Office/ Residential	0.85 (1.00)	18.5 (25.0)	38’	30’
		D	Downtown Santa Cruz Avenue	Retail/ Mixed Use and Main Street Overlay	2.00 (2.25)	25.0 (40.0)	38’	30’

Specific Plan limits the amount of general office allowed and the amount of medical office, based on community concerns, to the following:
Office, General—shall not exceed one half of the base FAR or public benefit bonus FAR
Office, Medical and Dental—shall not exceed one third of the base FAR or public benefit bonus FAR
FAR and DU/acre include both Base and Public Benefit Bonus standards, discussed in more detail in Section E.3.1 “Development Intensity” of the Specific Plan

* 48’ height limit is available only with the public benefit density bonus

SOURCE: Perkins + Will, 2010, 2012

CHAPTER 4
Environmental Setting, Impacts, and Mitigation Measures

This program-level EIR has been prepared in accordance with CEQA, as amended (Public Resources Code Section 21000, et seq.), and the CEQA Guidelines (California Code of Regulations Sections 15000 through 15378).

This chapter contains the analysis of the proposed project's potential effects to environmental topics considered under CEQA. This chapter describes the existing setting for each topic, the potential impacts that could result from the proposed project, relevant plans and policies that would minimize or avoid potential adverse environmental effects that could result from the proposed Plan, identifies mitigation measures necessary to reduce the potential impacts resulting from the proposed Plan, and describes any residual impacts remaining after implementation of the mitigation measures. The purpose of this program-level EIR is to deal with the effects of the proposed Plan as comprehensively as possible, understanding that project-level details are not available at this time. As allowed by CEQA Guidelines Section 15168, this program-level document can be used to simplify the environmental process for subsequent projects by focusing those analyses solely on new effects which are not considered in this document. Most newly proposed projects within the Specific Plan area will require discretionary architectural review, and the City will be required to determine if the environmental effects of the proposed project were covered in this EIR (CEQA Guidelines Section 15168(c)). Typically the City would use an initial study to determine whether an individual development proposal had potential impacts not analyzed in this program-level EIR. If the effects were not covered, further environmental review will be required. Environmental review is required even for future projects that would normally be categorically exempt if there is a reasonable possibility that a project would have a significant effect due to unusual circumstances.

The following provides an overview of the scope of the analysis included in this chapter, organization of the sections, and descriptions of the levels of significance used in the analysis.

Environmental Topics

The following Sections in this chapter analyze the environmental topics as listed below and presented in the Table of Contents at the front of this document:

4.1 Aesthetic Resources
4.2 Air Quality
4.3 Biological Resources
4.8 Hydrology and Water Quality
4.9 Land Use and Planning Policy
4.10 Noise

4.4 Cultural Resources
4.5 Geology, Soils, and Seismicity
4.6 Greenhouse Gases and Climate Change
4.7 Hazardous Materials and Hazards
4.11 Population and Housing
4.12 Public Services and Utilities
4.13 Transportation, Circulation, and Parking

Agricultural Resources and Mineral Resources were determined not to be directly relevant to the proposed project and are briefly discussed in Chapter 6, *Impact Overview and Growth-Inducing Impacts*, under Section 6.5, *Effects Found to be Less than Significant*.

Format of Environmental Topic Sections, Impact Statements, and Mitigation Measures

Each environmental topic section generally includes two main subsections:

- *Environmental Setting*, which includes baseline conditions, regulatory setting, Criteria of Significance; and
- *Impacts Analysis*, which identifies and discusses the potential impact and cites applicable mitigation measures that would, to the extent possible, reduce or eliminate adverse impacts identified in this chapter.

This EIR identifies all impacts with an abbreviated designation that corresponds to the environmental topic addressed (e.g., "HAZ" for hazardous materials). The topic designator is followed by a number that indicates the sequence in which the impact statement occurs within the section. For example, "Impact HAZ-1" is the first (i.e., "1") hazardous materials impact identified in the EIR. All impact statements are presented in bold text.

Similarly, each mitigation measure is numbered to correspond with the impact that it addresses. Where multiple mitigation measures address a single impact, each mitigation measure is numbered sequentially. For example, "Mitigation Measure HAZ-1" is the first mitigation identified to address the first hazardous materials impact (i.e., "HAZ"). All mitigation measure statements are presented in bold text.

Thresholds/Criteria of Significance

Under CEQA, a significant effect is determined as a substantial, or potentially substantial, adverse change in the environment (Public Resources Code Section 21068). Each *Impact Analysis* discussion in this chapter is prefaced by criteria of significance, which are the thresholds for determining whether an impact is significant.

The criteria of significance used in this EIR are from the CEQA Guidelines for determining the significance of environmental effects, including CEQA Guidelines Sections 15064, 15064.4, 15064.5, 15065, 15382, Appendix G, and City-adopted thresholds of significance.

Impact Classifications

The following level of significance classifications are used throughout the impact analysis in this EIR:

- **Less than Significant (LS) –** The impacts of the proposed project, either before or after implementation of feasible mitigation measures, do not reach or exceed the defined Threshold/Criteria of Significance. Generally, no mitigation measure is required for a LS impact.

- **Potentially Significant (S) and Significant and Unavoidable (SU)** – The impact of the proposed project reaches or exceeds the defined Threshold/Criteria of Significance. Mitigation measures are identified to reduce the impact to LS. When no feasible mitigation measure is available to reduce the S impact to LS, feasible mitigation measures are identified to reduce the S impact to the maximum feasible extent, and the residual significant impact is considered SU. Impacts are also classified as SU if a feasible mitigation measure is identified that would reduce the impact to LS, but the approval and/or implementation of the mitigation measure is not within the City of Menlo Park's sole control, in which case the analysis cannot presume implementation of the mitigation measure and the resulting LS impact.

- **No Impact (N)** – No noticeable adverse effect on the environment would occur.

Environmental Baseline

Overall, pursuant to Section 15125(a) of the CEQA Guidelines, this EIR measures the physical impacts of the proposed Plan against a "baseline" of physical environmental conditions at and near the proposed Plan area. The environmental "baseline" is the combined circumstances existing at the time the NOP for the EIR was published, which is December 2009.[1] In most cases, the baseline condition relevant to the environmental topic being analyzed is described within each environmental topic section in this chapter. In some cases (such as Section 4.1, Aesthetics Resources), discussion of the baseline condition is detailed or restated in the Impacts Analysis to provide the impact analysis in the most reader-friendly format and organization. The baseline also includes the policy and planning context in which the project is proposed. This is discussed in detail within Section 4.9, *Land Use and Planning Policy*, and identifies any inconsistencies between the proposed project and applicable, currently adopted plans and policies.

Cumulative Analysis

CEQA defines cumulative as "two or more individual effects which, when considered together, are considerable, or which can compound or increase other environmental impact." Section 15130 of the CEQA Guidelines requires that an EIR evaluate potential environmental impacts when the project's incremental effect is cumulatively considerable. "Cumulatively considerable" means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable

[1] Except as specified otherwise, any reference to "existing" conditions throughout this EIR refers to the baseline condition as of around December 2009.

future projects. (Section 15065) These impacts can result from a combination of the proposed project together with other projects causing related impacts. "The cumulative impact from several 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 reasonable foreseeable probable future projects." (Section 15355)

Section 15130 of the CEQA Guidelines permits two different methodologies for completion of the cumulative impact analysis:

- The 'list' approach permits the use of a list of past, present, and probable future projects producing related or cumulative impacts, including projects both within and outside the City; and

- The 'projections' approach allows the use of a summary of projections contained in an adopted plan or related planning document, such as a regional transportation plan, or in an EIR prepared for such a plan. The projections may be supplemented with additional information such as regional modeling.

Depending on the impact area, this EIR has used a combination of the list and projections methods as a conservative approach that tends to increase projected cumulative impacts. For cumulative impacts confined to the City limits, such as aesthetic impacts, the EIR has based the analysis of cumulative impacts on the list of projects in **Table 4-1** on the following page. This list includes all proposed projects for which the City had received a planning application or which were approved at the time the NOP was issued. For traffic and noise impacts, and air quality impacts related to vehicle miles traveled (VMT), the EIR has conservatively relied on a combination of the list approach (for those projects within the city that have the most direct impact on local streets) and the projections approach (primarily for projects outside the city). On surface streets, the EIR models traffic generated by the local projects as shown in **Table 4-1** and has also projected a one percent background growth factor, assuming that all traffic volumes increase by one percent per year compounded over 25 years, or 28.24 percent to represent traffic growth between 2010 and 2035. This projection of background traffic growth was based on the 2009 Regional Transportation Plan (RTP) prepared by the Metropolitan Transportation Commission.[2] For freeway segments, the EIR models traffic generated by the local projects as shown in **Table 4-1** and annual traffic growth rates developed by comparing 2030 and 2005 projections from the model prepared by the City/County Association of Governments (C/CAG).[3]

The Stanford University Medical Center Facilities Renewal and Replacement project (Palo Alto) was not analyzed separately because the EIR utilizes the projections approach for the cumulative impacts of projects located outside the City limits. However, the projections used in this EIR are consistent with the increased traffic projected in the Medical Center EIR. That EIR showed an

2 See Metropolitan Transportation Commission, *Transportation 2035 Plan for the San Francisco Bay Area*. This document is available to the public at http://www.mtc.ca.gov/planning/2035_plan/ and at the Menlo Park Planning Division, 701 Laurel Street, Menlo Park, California.

3 See City/County Association of Governments, *Congestion Management* Program *2009*. This document is available to the public at http://www.ccag.ca.gov/pdf/tac/2009/FINAL_SMC_2009_CMP.pdf and at the Menlo Park Planning Division, 701 Laurel Street, Menlo Park, California.

TABLE 4-1
LIST OF PROJECTS USED IN CUMULATIVE ANALYSIS

Project Name	Components
1283 Willow Road (Police/City Service Center)	Office (3,800 square feet) under construction Retail (5,096 square feet) under construction
110 Linfield Drive (Taylor Woodrow)	Residential (22 dwelling units) approved new construction Office (-17,500 square feet) replaced (not occupied during 2004 CSA counts)
297 Terminal Avenue (Habitat for Humanity)	Residential (22 dwelling units) proposed new construction
1460 El Camino Real	Residential (16 dwelling units) approved new construction Office (26,800 square feet) approved new construction Residential (-1 dwelling unit) replaced Commercial (-12,016 square feet) replaced
2122 Santa Cruz Avenue	Residential (7 dwelling units) approved new construction Convalescence Hospital (-80 beds) replaced
Derry, 580 Oak Grove	Residential (108 dwelling units) proposed new construction Commercial (24,925 square feet) proposed new construction Commercial (-21,290 square feet) replaced (partially occupied during 2004 CSA counts)
1300 El Camino Real	Commercial (110,065 square feet) proposed new construction Commercial (-28,584 square feet) replaced
1906 El Camino Real	Medical Office (9,825 square feet) approved new construction Restaurant (-5,742 square feet) replaced
1706 El Camino Real	Medical Office (10,166 square feet) proposed new construction Restaurant (-6,875 square feet) replaced
100-155 Constitution Drive & 100-190 Independence Drive	Office (694,669 square feet) proposed new construction Health Club (69,467 square feet) proposed new construction Restaurant (6,947 square feet) proposed new construction Retail (10,420 square feet) proposed new construction Hotel (230 rooms; 173,667 square feet) proposed new construction Office (-111,679 square feet) replaced R&D (-58,505 square feet) replaced
2550 Sand Hill Road	Office (23,011 square feet) under construction Convalescent Hospital replaced
389 El Camino Real	Residential (26 dwelling units) proposed new construction Residential (-4 dwelling units) replaced
Hamilton East	Residential (214 dwelling units) potential development Residential (-8 dwelling units) replaced Light Industrial (-55,861 square feet) replaced
General Motors Site	R&D (300,000 square feet) Willow Business Area coordinated traffic study
AMB Business Park	R&D (300,000 square feet) Willow Business Area coordinated traffic study
Menlo Business Park	R&D (145,000 square feet) Willow Business Area coordinated traffic study

NOTE: CSA = Menlo Park Circulation System Assessment

increase of five percent in traffic volumes on intersections in Menlo Park over a 13-year period (to 2025), less than the one percent per year background increase assumed in this EIR. This confirms that the EIR's analysis is conservative.

For the Redwood City Saltworks project, the proposal is still in a preliminary phase, and as such does not currently offer enough detail to conduct a cumulative impact analysis. In addition, the City utilized the projections approach for projects located outside the City. However, the Saltworks project will be required to perform its own analysis of the project and cumulative environmental impact of that development.

4.1 Aesthetic Resources

This section evaluates the potential effects of the proposed Specific Plan on aesthetic resources in the vicinity of the Plan area, including potential effects of shadows. This section also considers the proposed project's consistency with relevant visual resource-related policies.

4.1.1 Environmental Setting

The following summary describes the visual character of the built environment in the Plan area and the nearby vicinity. The visual character reflects the Plan area's existing buildings, street grids, and natural and manmade features. Photographs of the existing built environment at select locations as well as renderings of potential development allowed by the Specific Plan at the same locations are included in **Figures 4.1-1** through **4.1-4**.

Visual Character

The Plan area is located in a developed urban area, along El Camino Real between Watkins Avenue to the north and San Francisquito Creek to the south. In downtown, the Plan area includes Oak Grove Avenue, Santa Cruz Avenue and Menlo Avenue to University Drive to the west, and extends east to Alma Street. The general vicinity surrounding the Plan area contains medium- and low-density residential uses. In addition, the academic buildings, plazas, and recreational fields of the Menlo College campus are adjacent to El Camino Real at the north end of the Plan area, within the Town of Atherton. Immediately to the southeast of the train station, are the Menlo Park Civic Center and Burgess Park which are just outside the Plan area. Directly east of these public uses are office and research and development (R&D) uses. The City of Palo Alto and Stanford University are farther to the south along El Camino Real bordering the south end of the Plan area. Fremont Park, Nealon Park, and Holbrook-Palmer Park are also located within two blocks of the Plan area.

The following sections describe the visual character of distinct portions of the Specific Plan area including El Camino Real, Santa Cruz Avenue, Menlo/Ravenswood Avenues, and Oak Grove Avenue.

El Camino Real

Within the southern portion of the Plan area, El Camino Real is a six-lane arterial. The roadway becomes a four-lane arterial near downtown Menlo Park, and it exits the city as a five-lane arterial (three southbound lanes and two northbound lanes) north of Valparaiso Avenue. Sidewalk landscaping is intermittently present, and landscaping of the center median is more extensive closer to, and within, downtown. The properties along the roadway are fully urbanized and are characterized by a mix of commercial retail, hotel, service, and office buildings that vary in terms of age and architectural style. Some structures are built to the lot line, but in other locations, the street edge is ill-defined, with parking lots, driveways, and landscaping intervening between the buildings and the street. Most of the buildings are between one and three stories in height, although some office buildings are taller near Menlo/Ravenswood Avenues.

Existing Conditions

Sketch of Buildout of the Specific Plan

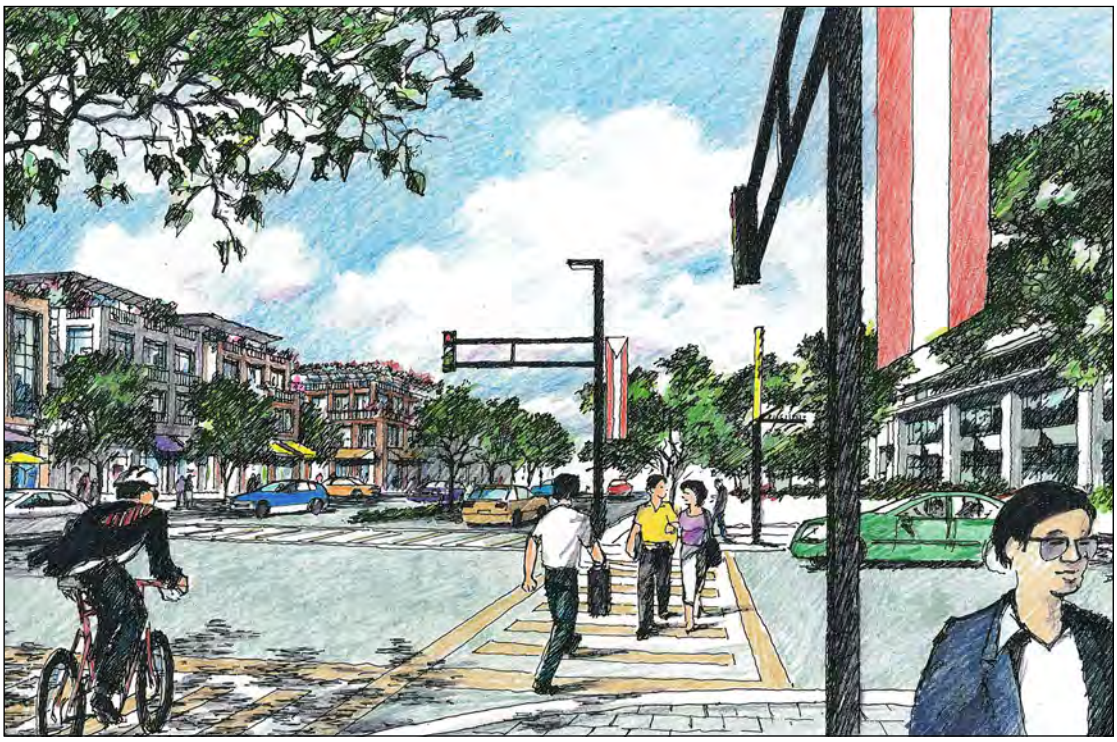
SOURCE: Perkins + Will; ESA

Menlo Park El Camino Real/Downtown Specific Plan EIR . 208581

Figure 4.1-1

El Camino Real at Patridge Avenue Looking North

Existing Conditions



Sketch of Buildout of the Specific Plan

SOURCE: Perkins + Will; ESA

Menlo Park El Camino Real/Downtown Specific Plan EIR . 208581

Figure 4.1-2

El Camino Real at Ravenswood Avenue Looking North

Existing Conditions

Sketch of Buildout of the Specific Plan

SOURCE: Perkins + Will; ESA

Menlo Park El Camino Real/Downtown Specific Plan EIR . 208581

Figure 4.1-3

Santa Cruz Avenue from El Camino Real Looking West

Existing Conditions

Sketch of Buildout of the Specific Plan

SOURCE: Perkins + Will; ESA

Menlo Park El Camino Real/Downtown Specific Plan EIR . 208581

Figure 4.1-4

Santa Cruz Avenue at Curtis Street Looking West

Several large parking lots associated with automotive service and sales uses (many of which are currently vacant) and large-format retail stores are present along the street. Other vacant parking lots associated with prior uses are also prevalent. Although cross streets intersect with El Camino Real in standard city grid pattern, the Caltrain right-of-way creates a physical barrier to east-west travel in the area between Menlo/Ravenswood Avenues and San Francisquito Creek.

In downtown Menlo Park, El Camino Real has two through-travel lanes in each direction, as well as left- and/or right-turn lanes, depending on the approach. The median includes decorative brick and is landscaped. The built form on surrounding properties is more consistently of one- and two-story buildings, typically standing at the lot line. These buildings house primarily retail shops, banks, and restaurants. Menlo Center, a three-story, 46-foot tall building that includes a plaza, retail, office, and restaurant spaces, is on the east side of El Camino Real just south of Santa Cruz Avenue. The Caltrain station is located east of Menlo Center.

North of downtown, median landscaping is sustained consistently to Valparaiso Avenue, and is less consistent but present from Valparaiso Avenue to the northern edge of the Plan area. The built form and uses are again more varied, and parking lots abut the street in several places. Directly to the west, a fence blocks the rear yards of a residential neighborhood near Menlo College, and another fence and vegetation screens the athletic fields of the school, all of which are in the Town of Atherton.

Santa Cruz Avenue

Santa Cruz Avenue is downtown's primary commercial thoroughfare, and primarily has two lanes, with parking on each side. At the University Drive and El Camino Real intersections, Santa Cruz Avenue briefly expands to four lanes. It extends from the train station in the east, where retail and office uses occupy two- to three-story buildings, to the west beyond the Specific Plan area. On the west side of El Camino Real is the main shopping district, characterized by one- and two-story buildings in a variety of architectural styles and constructed to the lot line. The small parcel sizes, typically 50 feet wide, create a pattern of small buildings and allow for a variety of façades. The sidewalks are landscaped, and both the sidewalks and crosswalks are paved in decorative brick. Some buildings include overhangs above the sidewalk, which darken the sidewalk and obscure shop windows, although they also provide protection to pedestrians from the sun and rain. Between Doyle Street and University Drive, a median planted with Liquidambar trees runs down the center of the roadway, and mature street trees provide shade. On one side of the street, parking is at a 45-degree angle, and on the other side, there is parallel parking, with the layout differing by block.

Public parking plazas for the uses along Santa Cruz Avenue and parallel streets are located behind the buildings. These lots include planted medians and street lamps, and many buildings provide a rear access directly from the lots into the retail spaces. In effect, these areas become secondary streets.

Menlo/Ravenswood Avenues and Oak Grove Avenue

Menlo/Ravenswood Avenues and Oak Grove Avenue are the other two primary cross streets in the Plan area. They provide access across the Caltrain right-of-way.

Ravenswood Avenue is an east-west two-lane arterial roadway, with the portion between Alma Street and El Camino Real expanding to additional lanes and being divided by a planted median with mature street trees. Three-story commercial buildings are set back from the street in this location, and they are obscured by mature trees. Crossing El Camino Real, the street becomes Menlo Avenue. A short center median extends from El Camino Real to Doyle Street. The built form here is varied, with some buildings set back from the lot line by parking lots, and others built to the lot line. Buildings are primarily two stories and contain a variety of retail and office uses. Heading west, a mix of two-story office buildings, two-story apartment buildings, and one-story, detached residential structures (many currently used for commercial uses) set back from the street by small yards and driveways line the south side of Menlo Avenue. On the north side are two-story commercial office and services buildings. A couple of private parking lots abut the street in some locations, and the public parking plazas described above under *Santa Cruz Avenue*, are accessed via cross streets, such as Crane Street or Evelyn Street.

Oak Grove Avenue is an east-west two-lane roadway with one parking lane in each direction on the east side of El Camino Real. The sidewalk is landscaped, and there is a mix of retail, service, residential and parking lot uses. The buildings are one to three stories tall. Across El Camino Real, heading west, buildings on the south side of Oak Grove Avenue are two-story tall retail, office, and service-related. Buildings on the north side of the street include one- and two-story tall offices and mixed use developments, some with underground parking, and detached, single-family dwellings set back from the roadway. As with Menlo Avenue, the public parking plazas are accessed via cross streets.

View Corridors and Scenic Vistas

A view corridor is an enclosed area of landscape, viewed as a single entity that includes the total field of vision visible from a specific point, or series of points along a linear transportation route. Public view corridors are areas in which views are available from publicly accessible viewpoints, such as from city streets. As described above, the four primary corridors within the Plan area are along El Camino Real, Santa Cruz Avenue, Oak Grove Avenue, and Menlo/Ravenswood Avenues. In addition, the Caltrain right-of-way and station provide a publicly accessible space from which passengers view the Plan area. View corridors are also present along cross streets, though they are often shorter or primarily outside of the Plan area. Furthermore, cross streets are staggered at Santa Cruz Avenue, limiting the view corridors in those locations. Views from nearby parks are similarly limited due to the topography and intervening buildings.

For purposes of analysis in this EIR, views from the Specific Plan area can be placed in one of three categories: short-range (views from public vantage points of locations to a distance of 0.25 mile); medium-range (views from public vantage points of locations to a distance of 0.25 mile to 0.50 mile); and long-range (views from public vantage points of locations at a distance greater than 0.50 mile).

Given that the Specific Plan area is predominately flat and urbanized, mid- and long-range views of distinctive features or scenic resources are limited, as are scenic vistas. This section will describe what views exist down these corridors from various locations in and around the Specific Plan area, as well as any distinctive landmarks or architectural features that are visible.

El Camino Real and the Caltrain Right-of-Way

Short-range views along El Camino Real are limited to the buildings, parking lots, and sidewalk landscaping along the thoroughfare, described above. Mid- and long-range views to both the north and south are limited due to the flat nature of the Specific Plan area, the street trees within the median and on the sidewalks, and the gradual curve of the street. Figures 4.1-1 and 4.1-2 show the built form and views along El Camino Real under existing conditions.

Views are similar along the Caltrain right-of-way, which provides riding passengers fleeting views of the Plan area except when trains stop at the station. (**Figure 4.1-5** shows views of and from the Caltrain station.) The Victorian architecture of the historic train station building, the oldest continually operating train station in California, is visible in the short-range views. (Please see Section 4.4, *Cultural Resources*, for further description of the station.) The historic train station building and its newer clock tower are distinctive built features and a focal point within the Plan area. Views from the historic train station building are limited due to the flat topography of the Plan area, intervening buildings, and street landscaping.

Santa Cruz Avenue

The Caltrain station is also visible in the short-range views from Santa Cruz Avenue. Other short-range views along the avenue are limited to the surrounding visual character of retail buildings and sidewalk and median landscaping, described above. Mid-range views along the avenue are limited due to the flat topography and mature street trees. At University Drive, partially obscured long-range views of the Santa Cruz Mountains are available looking to the west, although street trees farther west along the avenue primarily obscure such views. Figures 4.1-3 and 4.1-4 show built form and views along Santa Cruz Avenue under existing conditions.

Menlo/Ravenswood Avenues and Oak Grove Avenue

Similarly, the Caltrain station and historic station building are visible in the short-range views from Ravenswood Avenue and Oak Grove Avenue, but other short-range views along these corridors are limited to the surrounding visual character of retail buildings and sidewalk and median landscaping, described above. Mid-range views are limited due to site topography, but partially obscured long-range views of the Santa Cruz Mountains are available looking to the west. In contrast with views along Santa Cruz Avenue, these views are better closer to El Camino Real, and they become more obscured traveling west along Menlo/Ravenswood or Oak Grove Avenues due to the terminus of both streets at or near University Drive.

Caltrain Station Platform and View Corridor

Caltrain Station Building

SOURCE: Perkins & Will; ESA, 2009

Menlo Park El Camino Real/Downtown Specific Plan EIR . 208581

Figure 4.1-5

Caltrain Station Visual Character and Visual Corridor

4.1.2 Regulatory Setting

This section discusses goals and policies contained within the City of Menlo Park General Plan and Zoning Ordinance that are applicable to the Specific Plan area and apply broadly to aesthetics across the City.

Menlo Park General Plan

The General Plan guides development and use of land in the City. The central purpose of the General Plan, as stated in the document, "is to maintain Menlo Park's special character as a residential community that includes a broad range of residential, business, and employment opportunities and to provide for the change necessary to maintain a vital community." Several goals and policies of the General Plan apply broadly to aesthetics across the City. The Land Use Element and Open Space and Conservation Element goals and policies that directly relate to visual, design, scenic, and other aesthetic concerns of the Specific Plan area are presented below. The General Plan land use designations applicable to the Specific Plan area are discussed in Section 4.9, *Land Use and Planning Policy*, of this EIR.[1]

Land Use Element

Residential

Goal I-A: To maintain and improve the character and stability of Menlo Park's existing residential neighborhoods while providing for the development of a variety of housing types. The preservation of open space shall be encouraged.

- *Policy I-A-1*: New construction in existing neighborhoods shall be designed to emphasize the preservation and improvement of the stability and character of the individual neighborhood.
- *Policy I-A-2*: New residential developments shall be designed to be compatible with Menlo Park's residential character.
- *Policy I-A-3*: Quality design and usable open space shall be encouraged in the design of all new residential developments.

Commercial

Goal I-B: To strengthen downtown as a vital and competitive shopping area while encouraging the preservation and enhancement of downtown's historic atmosphere and character.

- *Policy I-B-l*: The downtown should include a complementary mix of stores and services in a quality design, adding natural amenities into the development pattern.
- *Policy I-B-2*: Parking which is sufficient to serve the retail needs of the downtown area and which is attractively designed to encourage retail patronage shall be provided.

[1] City of Menlo Park, *General Plan Policy Document*, adopted November 30 and December 1, 1994.

Goal I-E: To promote the development and retention of commercial uses which provide significant revenue to the City and/or goods or services needed by the community and which have low environmental and traffic impacts.

- *Policy I-E-4*: Any new or expanded office use must include provisions for adequate off-street parking, mitigating traffic impacts, and developing effective alternatives to auto commuting, must adhere to acceptable architectural standards, and must protect adjacent residential uses from adverse impacts.

Open Space

Goal I-G: To promote the preservation of open space lands for recreation, protection of natural resources, the production of managed resources, protection of health and safety, and/or the enhancement of scenic qualities.

- *Policy I-G-2*: The community should contain an ample supply of specialized open space in the form of squares, greens, and parks whose frequent use is encouraged through placement and design.

- *Policy I-G-3*: Public spaces should be designed to encourage the attention and presence of people at all hours of the day and appropriate hours of the night.

- *Policy I-G-10*: Extensive landscaping should be included in public and private development, including greater landscaping in large parking areas. Where appropriate, the City shall encourage placement of a portion of the required parking in landscape reserve until such time as the parking is needed. Plant material selection and landscape and irrigation design shall adhere to the City's Water Efficient Landscaping Ordinance.

- *Policy I-G-11*: Well-designed pedestrian facilities should be included in areas of intensive pedestrian activity.

Open Space and Conservation Element

Goal: 2: To encourage the enhancement of boulevards, plazas, and other open spaces in residential, commercial, and industrial neighborhoods.

- *Policy 2:* Include landscaping and plazas on public and private lands and well-designed pedestrian facilities in areas of intensive pedestrian activity. Require greater landscaping in extensive parking areas.

Menlo Park Zoning Ordinance

The City of Menlo Park Zoning Ordinance enforces the land uses designated in the General Plan. Chapter 16 of the City of Menlo Park Municipal Code sets forth the City's Zoning Ordinance, the stated purpose of which is "to preserve and extend the charm and beauty inherent to the residential character of the city; to regulate and limit the density of population; encourage the most appropriate use of land; to conserve land and stabilize the value of property; to provide adequate open space for light, air and fire protection; to lessen traffic congestion; to facilitate the provision of community facilities; to encourage tree and shrub planting; to encourage building construction of pleasing

design; to provide the economic and social advantages of a planned community." A map of existing zoning districts in the Specific Plan area and surrounding areas is shown in Section 4.9, *Land Use and Planning Policy*, Figure 4.9-1.

The following sections provide brief descriptions of the development regulations that currently serve to control building size and placement, thereby influencing the visual character of the area, for the zoning districts located within the Plan area. Additionally, regulations for the review of building design, fences and signage are provided.

Central Commercial District (C-3)

Within the Plan area, the properties bounded by University Drive, Menlo Avenue, El Camino Real, and Oak Grove Avenue and properties along Alma Street between Ravenswood and Oak Grove Avenues are primarily within the Central Commercial (C-3) district. In this district, the floor-area ratio (FAR)[2] of buildings may not exceed 1.0, although a FAR of up to 2.0 may be authorized by a use permit when required parking for the FAR above 1.0 is provided on site or nearby. The FAR of office uses is limited to 0.5 and residential densities to a maximum of 18.5 dwelling units per acre and residential FAR to a maximum of 1.0. The height of buildings shall not exceed 30 feet. There is no minimum lot area, land coverage, setback requirements, or landscaping requirements in the district. Other properties in this area are within the Parking (P) district, where the only permitted use is landscaped, off-street parking subject to approval of the City Engineer prior to development.

General Commercial District (Applicable to El Camino Real) (C-4 ECR)

The majority of the properties fronting El Camino Real within the Plan area are within the General Commercial district specific to properties on the thoroughfare (C-4 ECR). In this district, the FAR may not exceed 0.55, except by use permit (0.75 for general uses and 1.0 for automobile storage in conjunction with an automobile dealership). Office uses are limited to 0.4 and residential densities are limited to 18.5 dwelling units per acre. Maximum heights are 30 feet. Lot areas must be at least 10,000 square feet, but there are no minimum setbacks or land coverage requirements. Landscaping requirements range between five percent and ten percent of the lot area, depending on the size of the lot.

Planned Development Districts (P-D)

Select properties between El Camino Real, the Caltrain right-of-way, Middle Avenue and Encinal Avenue are within Planned Development (P-D) districts. The purpose of a P-D district is to encourage the consolidation of smaller parcels into larger parcels to provide benefits to the City which could not otherwise be obtained. Application of the P-D district requires rezoning of property and approval of development permits by the City Council. Property owners are required to submit detailed plans of proposed projects, including preliminary building plans detailing height, bulk, setbacks, and landscaping, as well as development schedules. It is intended that the

[2] Floor-area ratio is the ratio of total applicable floor area within a building to the size of the lot. That is, a two-story building that fully covers its lot would have a floor area ratio of 2.0.

project plans would consider the inclusion of specific controls to develop more usable open space, provide for efficient use of land, utilities and circulation systems, utilize creative and integrated design and allow for innovative and desired mixed use developments. FARs and residential densities are restricted to that of the pre-existing zoning.

General Commercial District, Conditional (Applicable to El Camino Real) [C-4 ECR(X)]

The Conditional Development District (X District) is a zoning district established for combining special regulations with one of the base districts. The X designation allows for variety in the application of development regulations with the exception of FAR and residential density, which must remain consistent with the base district with which the X designation is combined. Application of the X designation requires rezoning of the property and approval of a Conditional Development Permit by the City Council. Within the Plan area, the Safeway property is within the C-4 ECR(X) district.

Administrative and Professional District (C-1-A)

The property at the northwest corner of El Camino Real and Encinal Avenue (1600 El Camino Real) and the property at 530 Oak Grove Avenue are within the Administrative and Professional (C-1-A) district. In C-1-A districts, the maximum FAR is 0.4 and the maximum height of buildings is 35 feet. Lot areas must be 10,000 square feet, and setbacks must be 15 feet in the front, 10 feet in the rear, a minimum of five feet for the interior side and 10 feet at the corner side. Maximum land coverage is 40 percent.

Administrative, Professional, and Service District (C-1-B)

Several properties at the northwest corner of Santa Cruz Avenue and University Drive lie within the Administrative, Professional, and Service (C-1-B) district. The maximum FAR is 0.4 and maximum height of buildings is 35 feet. Lot areas must be 10,000 square feet, and setbacks must be 15 feet in the front, 10 feet in the rear, a minimum of five feet for the interior side and 10 feet at the corner side. Maximum land coverage is 40 percent.

Apartment District (R-3)

A few of the properties in the northern and southern portions of the project area are within the Apartment (R-3) district. The maximum FAR is 0.45 and the maximum residential density is dependent on the lot area but generally ranges between 12.4 and 18.5 units per acre. The maximum height is 35 feet. Lots must be at least 7,000 square feet in R-3 districts with minimum setbacks of 20 feet in the front and 15 feet in the rear. Minimum setbacks for interior sides are 10 feet and 15 feet for corner sides. Total lot coverage cannot exceed 30 percent and a minimum of 50 percent of the lot area is required to be landscaped.

Apartment-Office District (R-3-C)

Properties on the south side of Menlo Avenue are within an Apartment-Office (R-3-C) district. Residential uses are subject to R-3 district regulations, discussed above. Commercial office uses

are allowed subject to use permit approval and the C-1-A regulations, discussed above. Residential and commercial uses are not permitted on the same property.

Mixed-Use District (R-C)

Finally, properties on the north side of Oak Grove Avenue are within a Mixed-Use (R-C) district. The purpose of the R-C district is to provide for mixed office and residential developments that integrate the functional and physical elements of the development. Residential portions of projects are required to utilize the R-3 district controls (see above), except that, residential density is established at 18.5 units per acre as opposed to the range of densities in the R-3 district. Commercial uses are governed by C-1-A district controls (see above). The FAR is limited to 0.45 for residential uses, 0.4 for commercial uses, and 0.85 in total for mixed uses.

Architectural Control

With the exception of single-family dwellings, duplexes, and accessory buildings, any proposal for a new structure, addition to an existing structure or change to the exterior of a structure that requires a building permit requires that the Planning Commission conduct architectural control review with regard to the following findings:

(1) That the general appearance of the structures is in keeping with character of the neighborhood;

(2) That the development will not be detrimental to the harmonious and orderly growth of the city;

(3) That the development will not impair the desirability of investment or occupation in the neighborhood;

(4) That the development provides adequate parking as required in all applicable city ordinances and has made adequate provisions for access to such parking.

Limitations for Fences and Walls in the Plan Area

The Zoning Ordinance (Chapter 16.64) includes standards for fences in non-residential and residential areas. In non-residential areas, fences, walls, hedges and similar structures located between the building and front lot line are required to obtain approval by the Community Development Director based on the following factors:

(1) Structural stability;

(2) Aesthetics;

(3) General health, safety and welfare of the community; and

(4) Clear lines of sight for vehicular and pedestrian traffic or other safety factor.

In residential areas, fences, walls, hedges and similar structures are limited to a maximum height of four feet within the front-setback area, three feet within a line-of-sight triangular area on corner

properties, and seven feet in all other areas. The heights in residential areas may be exceeded subject to the granting of a use permit.[3]

Design Guidelines for Signs

The Zoning Ordinance and Sign and Awning Design Guidelines also provide regulations for the design of signs and awnings in residential and non-residential areas. The stated intent of the guidelines is to "encourage signage that helps maintain the positive image of the area enjoyed by the residents and businesses of Menlo Park. Every Menlo Park business is encouraged to post an attractive sign stating the name of the business. The sign should be at a scale appropriate to the pedestrian and vehicular streetscape and the nature of the business."[4] All new and modified signs require approval by the Director of Community Development or his/her designee.

4.1.3 Impacts and Mitigation Measures

Significance Criteria

Implementation of the Plan would be considered to have significant impacts on aesthetic resources if it would:

- Have a substantial adverse effect on a viewshed, scenic vista or view corridor;
- Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway;
- Substantially degrade the existing visual character or quality of the site and its surroundings;
- Create a new source of light and glare which would adversely affect day or nighttime views in the area; or
- Create new shadow in a manner that substantially affects, in an adverse manner, the use of outdoor recreation facilities, other public open spaces, historic buildings, or a substantial number of properties.

The first four significance criteria above are derived from Appendix G of the state CEQA Guidelines. In addition, the City has elected to consider the potential effects of shadow cast by taller buildings that could be developed pursuant to the Plan. The incorporation into the EIR of a significance criterion for shadow impacts is in recognition of the fact that commenters expressed concern about potential shadow impacts both at the public workshops on the Plan and in response to the Notice of Preparation of this EIR. Accordingly, this EIR considers a substantial adverse effect on the use of outdoor recreation facilities, other public open spaces, historic buildings, or a substantial number of properties to be a significant physical effect on the environment.

[3] City of Menlo Park, Municipal Code, Chapter 16: Zoning, available online: http://www.menlopark.org/departments/pln/zoneordn.pdf, accessed April 6, 2012, amended through December 7, 2010.

[4] City of Menlo Park, 2008. "Design Guidelines for Signs." Community Development Department, available online: http://www.menlopark.org/departments/pln/signdesgnguide.pdf, accessed March 22, 2010, published September 2008.

Impacts

Impact AES-1: Implementation of the Specific Plan would alter views along certain corridors, but these changes would not be substantially adverse and so would be less than significant. (Less than Significant)

The City of Menlo Park does not have any officially designated scenic views or vistas. However, view corridors would be affected by development pursuant to the Specific Plan.

Buildout pursuant to the Specific Plan would result in replacement of existing buildings and parking lots with larger and taller buildings along El Camino Real, the Caltrain right-of-way, Santa Cruz Avenue, Menlo/Ravenswood Avenues, and Oak Grove Avenue. However, the Specific Plan includes both design controls and requirements for wider sidewalks and open space that would, to some degree, compensate for the increased sizes and heights of buildings. Specifically, the Plan includes height limits for most building facades that would serve to reduce heights along street edges, and massing, modulation and bulk controls that would limit the size of upper floors and provide breaks between buildings. (See Impact AES-4, below.) Widened sidewalks would open up views for pedestrians by providing a wider field of vision. In addition, new and improved plazas and open spaces, such as the Burgess Park Linkage, Civic Plaza, Chestnut Paseo, and Santa Cruz Avenue Central Plaza, would provide pedestrians access to areas currently closed or dedicated to vehicles, thereby offering pedestrians broader views down specific corridors.

The Specific Plan community workshops included illustrations that show conceptual building massings pursuant to the Specific Plan at several locations along El Camino Real and Santa Cruz Avenue. The illustrations are included as Appendix H.3 Community Workshops of the Specific Plan. The taller building heights are superimposed on the existing buildings to provide a representation of the streetscape at buildout of the Plan, but are not the exact design or height of the buildings at buildout. As shown in the illustrations, the changes in building character would further define the edges of these view corridors and further limit short-range views (views from public vantage points of a location to a distance of 0.25 mile). Taller and larger buildings would partially obscure short-range views along El Camino Real, Santa Cruz Avenue, and other corridors to a greater extent than under existing conditions. These changes would not substantially obscure views of any scenic resources. For example, the existing view of the train station, which is a visual resource, from the Caltrain right-of-way would be maintained.

Although short-range views would be altered by buildout according to the Specific Plan, mid- and long-range views would not change substantially. As stated in the setting, above, due to the flat nature of the Plan area, street trees, and the gradual curve of El Camino Real, mid- and long-range views are already substantially obscured. Therefore, taller or larger buildings that could be constructed pursuant to the Specific Plan, as well as additional landscaping, would not be visible in mid- and long-range views. Similarly, mid- and long-range views from wider sidewalks and plazas constructed pursuant to the Plan would remain limited by the flat topography and urbanized nature of the area. Long-range views of the Santa Cruz Mountains from Santa Cruz Avenue, Menlo Avenue, and Oak Grove Avenue would remain partially obscured by street trees.

In general, therefore, future views along the various view corridors in the Plan area would be of a more densely built urban environment, but no scenic views or vistas would be obscured. These changes to existing view corridors would not be substantially adverse, and the impact would be less than significant.

Mitigation: None required.

Impact AES-2: Implementation of the Menlo Park El Camino Real/Downtown Specific Plan would not result in substantial adverse impacts to scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within state scenic highways. (Less than Significant)

There are no scenic highways in or near the Plan area.[5] Similarly, there are no rock outcroppings in the plan area. As stated above, the Menlo Park Caltrain Station is a visual resource within the Plan area. Potential shadow impacts to this building, as well as other historic architectural resources in the Specific Plan area, are discussed under Impact AES-4 (shadow) and determined to be less than significant. (Other impacts to historic architectural resources are discussed in Section 4.4, *Cultural Resources*, of this EIR.) Impacts to views of the Santa Cruz Mountains, which are visual resources partially visible from portions of the Plan area, are addressed under Impact AES-1, above, and are considered less than significant.

Mature trees are primarily located within the public right-of-ways, including streets, sidewalks, and other public areas, and along the perimeter of private properties due to the urban context and fully developed character of the Plan area. The Specific Plan includes provisions for the retention of existing mature trees to the extent possible (Standard D.2.01, and Design Guidelines D.2.30, D.2.45, D.3.22, and D.5.17). Additionally, a "green and shaded Downtown and Station Area" is a key unifying concept (Section D.1 of the Specific Plan) with numerous design guidelines providing for more trees and landscaping along sidewalks, in plazas and other public spaces (Design Guidelines D.2.04, D.2.21, D.2.26, D.2.40, D.2.49, D.2.54, D.3.06, D.3.09, D.3.16, D.3.25, D.4.05, D.4.11, D.4.14, D.5.03, D.5.04, D.5.18, and D.6.06). With the combination of the standards and design guidelines' emphasis on retention and enhancement of trees in the Specific Plan area and the location of many existing trees within public areas and on the perimeter of properties, implementation of the Specific Plan would result in the planting of more trees than currently exist.

While no projects have been identified that would remove trees, it is possible that future construction could result in tree loss. As discussed in Section 4.3, *Biological Resources*, of this EIR, Menlo Park Municipal Code Chapter 13.24 *Heritage Trees* establishes regulations for the protection of heritage trees. Violations of the code can be remedied by fine, stop-work order, and development moratorium. The City code would also allow for the submittal of a permit to remove or substantially prune a protected tree, subject to the approval of the Director of Public Works. Approvals/denials can be appealed to the Environmental Quality Commission and again to the City Council.

[5] California Department of Transportation (Caltrans). *Officially Designated Scenic Highways: San Mateo County*. Available online: http://www.dot.ca.gov/hq/LandArch/scenic_highways/smateo.htm. Accessed January 20, 2010.

Associated guidelines ("Heritage Tree Replacement Procedures") require the planting of replacement trees at a 1:1 basis for residential projects and 2:1 for commercial projects to mitigate the impact of heritage tree removal. Additionally, the City Building Division provides "Tree Protection Specification" measures to further ensure the protection of heritage trees during construction activity. These measures include but are not limited to fencing of protected trees and providing a tree protection zone during construction, or using a tree wrap where appropriate and prohibiting spillage of materials below the tree canopy, damaging roots or branches of trees without prior authorization. The Municipal Code and guidelines apply to both public and private projects.

Compliance with these existing code requirements, guidelines, and Tree Protection Specification measures, coupled with the additional tree planting resulting from implementation of the Specific Plan, would not result in a substantial loss of trees, thereby having a less than significant impact on scenic resources.

Mitigation: None required.

Impact AES-3: Consistent with the objectives of the Specific Plan, implementation of the Plan would change the visual character of the Plan area, but would not substantially degrade the existing visual character or quality of the Plan area and its surroundings. (Less than Significant)

The overarching objective of the Specific Plan is to preserve and enhance community life, character and vitality through public space improvements, mixed use infill projects sensitive to the small-town character of Menlo Park and improved connections across El Camino Real. This objective is derived from the Phase 1 Vision Plan goals and embodied in the five guiding principles of the Specific Plan: (1) enhance public space; (2) generate vibrancy; (3) sustain Menlo Park's village character; (4) enhance connectivity; and (5) promote healthy living and sustainability. The Specific Plan acknowledges the need to address the community's desire for a more active and vibrant downtown, station area and El Camino Real corridor with mixed use infill projects, new community public spaces and new connections while also modulating the design of the new development to be sensitive to the existing small-town character.

The community workshops were well attended with over 100 participants at each workshop and were a critical component in determining the objectives of the Specific Plan. Throughout the workshops, participants evaluated and provided feedback on different development scenarios that used varying types of design controls. The workshops are described below as they specifically relate to the discussion of visual character. Detailed summaries of the workshops as well as the presentation graphics are included in Appendix H.3 of the Specific Plan.

The purpose of the first workshop was to have the community reconfirm the Phase 1 Vision Plan goals, understand the existing conditions and constraints, and consider the primary issues and tradeoffs associated with future changes in the Plan area. Recurring themes that emerged from the workshop included (1) support for creating more vibrancy in the downtown through a mix of

uses, extended hours, and active uses adjacent to public open spaces, (2) support for up to three-story building heights on Santa Cruz Avenue and up to five-story building heights on El Camino Real with appropriate design and massing controls, (3) a desire for more usable open space, and (4) a desire for improved connectivity for all modes of travel.

The purpose of the second workshop was to use the key concepts of connectivity, vibrancy, public space and character derived from the first workshop to discuss and identify preferred elements to be incorporated into an emerging plan. Recurring themes for the downtown and station areas included (1) having a balanced mix of uses with more development near the train station, (2) improving parks, plazas and other public spaces, (3) using the public parking plazas for infill development, (4) improving parking and consideration of parking structures, (5) support for three-story building heights in the downtown subject to appropriate design controls to be sensitive to the village fabric, and (6) support for widening sidewalks on Santa Cruz Avenue and incorporating bicycle facilities. Recurring themes for El Camino Real included (1) support for mixed use development, (2) support for building heights of up to five stories on the east side of El Camino Real and up to three stories on the west side of El Camino Real subject to appropriate design controls, and (3) support for improving east-west crossings and connections.

The purpose of the third workshop was to present an emerging plan to the community developed from the first two workshops, receive feedback and have the community help decide on revisions to the plan. The community showed strong support for the diversity of proposed public spaces, proposed building character and massing controls, and proposed enhancements to east-west pedestrian and bicycle connectivity. Majority support was also expressed for up to five-story heights on El Camino Real and the proposed distribution and type of parking downtown.

Overall, through the community workshops, a visual character for the Specific Plan area was defined in terms of both the built environment which includes building heights, massing and design, and the public open spaces such as parks, plazas, sidewalks and roadways. The following analysis of visual character impacts determines how the Specific Plan would affect the visual experience of the Plan area. Although perception of visual character is somewhat subjective, the analysis describes to what extent the visual character would be changed, and whether this change would result in a built form or public open space that would degrade what exists under current conditions.

Built Environment

There are several elements that create the visual character of a building, including the height, massing controls, location and intensity (Floor Area Ratio or FAR). Although all of these elements play a role in building design and character, it is often the architectural design elements that provide the visual experience. As such, the discussion below focuses on height, massing controls and the location of the building relative to public vantage points as the primary drivers of the visual experience. Although intensity is an important element of buildings, it is not necessarily a defining visual element as is height and massing. The discussion below addresses height, massing controls and location on a property as maximums that would be allowed by the Specific Plan, although individual buildings would vary in how the elements are applied within a larger design framework. Figures 4.1-1 through 4.1-4 include photographs of the built

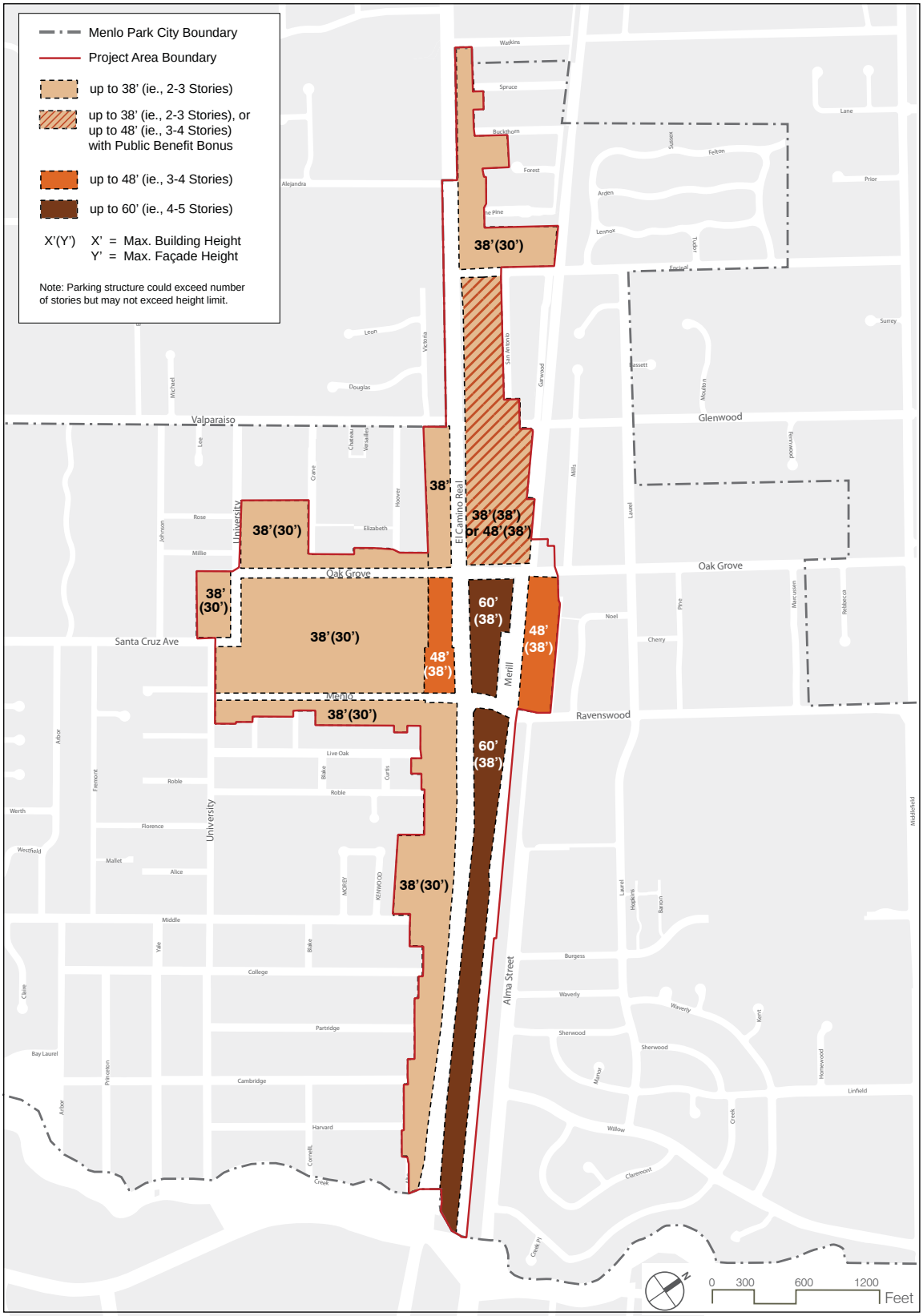
environment at select locations, as well as renderings of potential development that could be allowed by the Specific Plan at the same locations.

The existing built environment of the Specific Plan area is primarily comprised of one-and two-story buildings. Although buildings with the same number of stories can have different heights, the discussion uses 14 feet as the height of existing one-story buildings and 29 feet as the height of existing two-story buildings, consistent with commonly found heights in the Specific Plan area. Taller buildings of between three- and four-stories also exist in the area, primarily along El Camino Real. Although some buildings include massing variation, the majority of existing buildings do not have upper level setbacks or other massing differentiation. Buildings, especially in the downtown area, but also along much of El Camino Real are built close to the sidewalks and these sidewalks tend to be narrow at between five and 10 feet.

The Specific Plan allows for taller buildings than currently exists, but also includes massing and design controls to moderate the degree of visual change between existing and new buildings and provide for articulation to enhance the visual interest of buildings. The Plan supports three new height limits for the area: 38 feet for the downtown area, north El Camino Real and south El Camino Real on the west side of the street, 48 feet for the western and easternmost (along Alma Street) portions of the station area, and 60 feet for the central portion of the station area and south El Camino Real on the east side of the street. Additionally, up to 48 feet of height may be allowed in the northeastern portion of El Camino Real, between Oak Grove and Encinal Avenues subject to the provision of public benefit. **Figure 4.1.6** depicts the proposed maximum building heights. The maximum heights are moderated in most areas by the inclusion of 45-degree building profiles above façade heights of 30 feet for 38-foot heights, 38 feet for 48- and 60-foot heights on all sides facing a public right-of-way or public open space and, in some cases, also on the rear of buildings. Massing controls that restrict upper story façade lengths above 38 feet in height to 175 feet in length along a public right-of-way or public open space are also required in the station area and southeast side of El Camino Real, where the tallest heights would be allowed, and on the northeast side of El Camino Real between Encinal and Oak Grove Avenues with the public benefit bonus height of 48 feet.

Additional design controls include setbacks, building breaks and façade modulation requirements. Setback requirements enable widened sidewalks, provide adequate space for plazas and landscaped open spaces, and ensure buildings fit well within the context of their specific location. The Specific Plan also allows for projections into required setbacks for architectural interest such as balconies, bay windows, canopies and signs.

Building breaks, in the form of both breaks that extend through the entire height of a building and deep recesses, also provide for street edge modulation, variety and visual interest and help to avoid long, continuous facades along streets, especially along El Camino Real and Alma Street given the potential for larger buildings on larger parcels of land. Building breaks are required for sections of El Camino Real north and south of the downtown and along Alma Street. Building breaks are not required for the station area, except along Alma Street, and downtown where a tight rhythm of buildings is important for compatibility with existing patterns of development and to enhance vitality and the pedestrian experience.



SOURCE: Perkins + Will, 2012

Menlo Park El Camino Real/Downtown Specific Plan EIR . 208581

Figure 4.1-6
Proposed Building Heights Map

Similar to building breaks, façade modulation requirements are used to avoid long stretches of continuous façade length and to provide visual interest. The Plan requires modulation based on the building façade length. Minor façade modulation is required every 50 feet and major façade modulation every 100 feet of façade length along public right-of-ways and public open spaces. Minor façade modulations are required to be a minimum two-foot deep by five-foot wide recess or a minimum two-foot setback of the building plane from the primary façade. Major modulations are required to be a minimum six-foot deep by 20-foot wide recess or a minimum six-foot setback in the building plane from the primary building façade for the height of the building and should include a height modulation and major change in fenestration, pattern, material and/or color change.

Downtown

Within the downtown area, along Santa Cruz and Oak Grove Avenues, approximately half of the buildings are of one-story heights and half of two-story heights. Along Santa Cruz Avenue, one-story heights are concentrated between Chestnut and Crane Streets on the north side of Santa Cruz Avenue and between Crane and Evelyn Streets on the south side of Santa Cruz Avenue. Two-story heights are concentrated between El Camino Real and Chestnut Street on the north side of Santa Cruz Avenue. Along Oak Grove Avenue, one-story heights are concentrated primarily between El Camino Real and Chestnut Street on the south side of Oak Grove Avenue. There is no particular concentration of two-story and taller heights, but they are found throughout the length of Oak Grove Avenue. Along Menlo Avenue there are a higher percentage of two-story heights at approximately 72 percent of the buildings.

The Specific Plan could result in taller buildings than currently exists in the downtown area. With 38 feet of height, buildings could be developed with three stories. However, in practical terms, a third floor cannot be accommodated in the eight feet remaining between the 30-foot façade height and 38-foot maximum height. As a result, three-story tall buildings would likely have a lower façade height of approximately 25 feet to accommodate the required upper level 45 degree profile requirement and a third floor. But even with a façade height of the full 30 feet, the façade of the buildings would be generally the same height as existing two-story buildings, providing for a cohesive street edge. An upper level profile requirement would reduce the visibility and perceived height of the third floor from the ground level perspective. Although the added height would be a change in the visual character of the downtown, the change would not introduce a substantial new height not already experienced in the downtown. The community's support for three-story heights with design controls such as upper level profiles was confirmed through the community workshops.

The Specific Plan also includes requirements for ground floor setbacks that are consistent with the existing patterns. In the downtown, no setbacks from the sidewalk edge are required within the downtown core in order to help emphasize the existing pattern that serves to create a strong street edge. The Plan also includes the widening of sidewalks in the downtown core to provide for a minimum 12-foot pedestrian zone and five-foot furnishing zone along Santa Cruz Avenue. The wider sidewalks would serve to balance the taller building heights and help create activity for added vitality, a key goal and community desire expressed through the community workshops. The Specific Plan also includes allowed encroachments for canopies, awnings and other

projections and standards and guidelines related to façade modulation, building ground floor, entry and frontage treatments (Standards and Guidelines E.3.5.01 through E.3.5.25). The allowed encroachments, standards and guidelines for façade modulation and frontage treatments serve to reinforce the current storefront patterns and provide added visual interest. Similar approaches would be taken in the areas along the north side of Oak Grove Avenue and south side of Menlo Avenue, although greater setbacks would be required of 10 to 20 feet along the north side of Oak Grove Avenue and five to 20 feet along Menlo Avenue in order to accommodate sidewalks with minimum widths of 11 feet. The proposed setbacks would be consistent with existing patterns in these areas.

Although any development on the public parking plazas would be required to adhere to the same height and massing provisions as established for the Downtown district (38-foot maximum height and 30-foot façade height), the plazas have distinct setback requirements. Any development of the plazas would be required to maintain minimum 25-foot setbacks on all sides directly abutting private property to provide services and emergency access. At the community workshops, support was expressed for infill development on plazas located to the north of El Camino Real and for addressing parking needs. The Plan has responded by retaining surface parking south of Santa Cruz Avenue and proposing two parking garages on a choice of Plazas 1, 2 and 3. Although the development of the plazas would represent a change, it would not be inconsistent with the built urban form of the downtown area nor would it adversely affect the visual character given that the plazas are buffered from street views on all sides for plaza 1, on the south side for Plaza 2, and on the north, south and east for plaza 3. In addition, the Specific Plan contains a guideline that parking garages should avoid monolithic massing by employing change in façade rhythm, materials and/or color (E.3.7.09) and that garage facades be designed with design attention to an overall building façade that fits comfortably and compatibly into the pattern, articulation, scale and massing of surrounding building character (E.3.7.11). Any garage project will be required to receive Architectural Control approval, at which these and similar guidelines and height and massing standards will be fully evaluated.

Station Area

The station area has a varied visual character due to the range of existing building heights and the inclusion of Menlo Center plaza and parking and open space areas adjacent to the train station. The west edge of the station area, located along the west side of El Camino Real, is developed with one-story tall buildings in the block between Santa Cruz and Oak Grove Avenues and two-story tall buildings in the block between Santa Cruz and Menlo Avenues resulting in a character similar to downtown. The area located between El Camino Real and the railroad right-of-way has two three-story tall buildings, Menlo Center at 46 feet and Menlo Square at approximately 45 feet inclusive of roof screening and approximately 50 feet at the top of the elevator tower. Other development includes an even split of one- and two-story buildings evenly located with no areas of concentration. Along Alma Street, existing one-story buildings predominate, with one two-story building. The station area also includes travel corridors of substantial width, including El Camino Real, Alma Street and the Caltrain right-of-way. The width of the travel corridors as well as the inclusion of the Menlo Center plaza and parking and open spaces adjacent to the train station result in the lack of a strong street edge.

The Specific Plan would allow for buildings up to 48 feet in height in the Station Area West (SA W) district and along Alma Street in the Station Area East (SAE) district, and up to 60 feet in height in the remainder of the SA E district with upper level building profiles and massing controls required above a maximum façade height of 38 feet. The proposed 48-foot height would accommodate buildings with up to three stories of commercial development or four stories if residential is included given the lower floor heights for residential development. The proposed 60-foot height would accommodate buildings up to four stories of commercial development or five stories if residential is included. The proposed heights are designed to implement the overall intent of the station area to create a focal point with a strong civic presence and important arrival point into Menlo Park by emphasizing a higher intensity of use consistent with the existing three-story tall buildings. The community's support for up to five-story heights with design controls such as upper level building profiles and massing controls was confirmed through the community workshops.

The Specific Plan also includes sidewalk requirements intended to support the Plan's goals for greater east-west connectivity. Beginning with the west edge of the station area, the Specific Plan recommends a 15-foot wide sidewalk along the north side of Santa Cruz Avenue consistent with the proposed wider sidewalks of downtown. The Plan further allows a setback of 35 feet by 10 feet at the northwest corner of El Camino Real and Santa Cruz Avenue in order to provide a small plaza with views from downtown to the train station. Moving toward the train station, the Plan proposes a new civic plaza at the east end of Santa Cruz Avenue that would connect the downtown and Menlo Center plaza with the train station and across to Alma Street. Along Alma Street, setbacks of between seven and 12 feet would be required in order to accommodate a minimum 15-foot wide sidewalk leading to two small plazas at the corners of Ravenswood Avenue and Alma Street. The Plan also addresses north-south pedestrian activity by recommending widening sidewalks to 15 feet along the east side of El Camino Real and 12 feet on the west side. With the exception of Alma Street and El Camino Real, no setbacks from street edge are required in the station area, consistent with the existing and proposed character of the downtown. Setbacks would be required along Alma Street of between seven and 12 feet and along El Camino Real of between five and eight feet to help accommodate the required sidewalk width.

The existing three-story tall buildings, plaza space and wide roadway and railroad right-of-ways establish a visual character in the station area that is different from the downtown. The Specific Plan builds on the existing visual character by allowing increased heights and additional plaza space while also including elements that better connect the station area to the downtown. The maximum façade height of 38 feet and other massing controls serve to reduce the perceived heights of the buildings from the ground floor perspective, resulting in new buildings that would be compatible with the existing three-story tall buildings. Additionally, taller buildings serve to balance the width of the roadways and railroad right-of-way and create a stronger street edge, consistent with the downtown. The stronger street edges surrounding the enhanced pedestrian facilities and plazas support the greater intensity of use and vibrancy desired by the community as expressed at the workshops. Similar to downtown, the Plan includes allowed encroachments for canopies, awnings and other projections and standards and guidelines related to facade modulation, building ground floor, entry and frontage treatments (Standards and Guidelines E.3.5.01 through E.3.5.25) to enhance the visual interest of buildings. Additionally, building

breaks are required along Alma Street. Although the Specific Plan would result in a change to the visual character, the change supports the objectives of the Plan and would serve to better integrate the station area with downtown.

El Camino Real North and South of the Station Area

Along El Camino Real to the north of the station area, approximately 75 percent of the buildings are one-story in height. Other buildings are two stories in height with one three-story-tall residential building near the north border of the city. There is a concentration of one-story tall buildings on the east side of the street between Valparaiso/Glenwood Avenue and Oak Grove Avenue, however this area also contains one approved project and one pending project with heights up to 40 feet. The Specific Plan would allow for 38-foot heights, with façade heights of 30 feet on the east side of the street north of Encinal Avenue. The remainder of the area would be limited to 38 feet of height but would not have the façade height requirement. However, the area between Encinal and Oak Grove Avenues on the east side of El Camino Real would be allowed heights up to 48 feet subject to the provision of public benefit. The 48-foot heights would include a 38-foot façade height limit. The intent of this area is to gradually increase building heights from the northerly border of the city to the station area, where taller heights would be located in order to encourage greater activity near the downtown and transit center. The Specific Plan also requires setbacks sufficient to widen sidewalks along the east side of the street to 15 feet minimum and along the west side of the street to 12 feet minimum.

Along El Camino Real south of the Station Area, the east side of the street is developed with a three-story, 49-foot tall building and a four-story, 56-foot tall building near Ravenswood Avenue. The center of this segment is comprised of one-story buildings and surface parking lots before being capped on the southern end by the 45-foot tall Stanford Park hotel. Moreover, the area constitutes a relatively narrow strip of land that is heavily developed with automobile-oriented commercial uses, many of which are vacant and do not offer high-quality aesthetic character at present. Along the west side of the street, approximately 72 percent of the buildings are one-story in height, with a concentration of one-story buildings between Menlo/Ravenswood Avenues and Middle Avenue. The Specific Plan would allow for 60-foot heights with upper level building profiles above a maximum façade height of 38 feet along the east side of the street, and heights of 38 feet with upper level 45-degree building profiles above a façade height of 30 feet on the west side of the street. Requirements for upper floor façade lengths would also be required on the east side of El Camino Real. Similar to north of the Station Area, setbacks would be required sufficient to widen sidewalks to 15 feet minimum along the east side and 12 feet minimum on the west side of the street.

Similar to the downtown and station area, the added height would be a change from the visual character of the existing buildings, but would not result in adverse visual impacts. The increased heights help to meet the objectives of the Specific Plan for increased use of underutilized properties, most specifically along the east side of the street. Heights of up to five stories were supported by the community through the community workshops and seen as an appropriate way to generate additional vibrancy and encourage infill development. The change to a 38-foot height (or 48-foot height with upper floor building profiles and with provision of public benefit) north of the station area and a change to a 38-foot height south of the station area on the west side of the street would

not introduce a substantial new height not already experienced in these areas from existing two- and three-story buildings. For the area south of the station on the east side of the street, the proposed 60-foot height limit would be consistent with an existing building in the area and therefore would not introduce a height to the area not already in existence. The proposed 38-foot façade height would be compatible with other existing buildings. Additionally, the 60-foot height is concentrated in a commercial corridor separated from residential uses by the approximately 100-foot width of El Camino Real and 200-foot combined width of the railroad right-of-way and Alma Street. The effect along El Camino Real itself would be limited by the width of the street, which would serve to decrease the perception of the increased height, since taller buildings would appear relatively less so in the context of the expansive pavement in the area. The visual perception of the proposed heights would be reduced with use of the various massing controls above the façade maximum heights. Additionally, the Plan includes allowed encroachments for canopies, awnings and other projections and standards and guidelines related to building breaks, façade modulation, building ground floor, entry and frontage treatments (Standards and Guidelines E.3.5.01 through E.3.5.25) to enhance the visual interest of buildings. Development pursuant to the Specific Plan along El Camino Real north and south of the Station Area would not introduce height not already found in the Specific Plan area, would allow for infill development of underutilized parcels within development standards that would require varied massing for visual interest, setbacks to encourage a stronger street edge and balance to the width of El Camino Real and railroad right-of-ways thereby not resulting in an adverse impact, but potentially a beneficial impact.

Public Open Space

Public open space is generally comprised of parks, plazas and streetscapes. Although several parks are located close to the Plan area, including Fremont Park, Burgess Park, Nealon Park, and Holbrook-Palmer Park, there are no parks currently located within the boundaries of the Plan area. Similarly, there are limited plazas, with the most notable being the plazas associated with Menlo Center and the train station. The most prevalent form of public open space is the streetscape. Streetscape character is created by features such as landscaping, sidewalk design and street furniture and amenities. Within the downtown, sidewalks tend to be fairly narrow at approximately seven feet. Along Santa Cruz Avenue, street furnishings are designed to serve pedestrians, but in some cases also create constraints by reducing the effective area for circulation and social interaction. Santa Cruz Avenue is identifiable by a tree-lined median, as well as varying types and sizes of trees planted irregularly in the sidewalks and planting areas. Other streets within the downtown, as well as the public parking plazas focus on function, whether for pedestrian access or parking. The El Camino Real streetscape includes narrow sidewalks of between five and 10 feet, narrowing in places down to a size that places pedestrians close to the street edge, making it an uncomfortable pedestrian experience. In addition, several intersections have been compromised by infrastructural elements that further restrict pedestrian access. Landscaping varies in design, quality and maturity with some areas such as between Roble and Ravenswood Avenues having mature street trees, and other areas having less or immature landscaping.

The Specific Plan establishes a network of new public open spaces linked by landscaped streets to address key objectives of the Specific Plan for the enhancement of public spaces and connectivity.

Through the community workshops, the public supported a diversity of public spaces and the enhancement of east-west pedestrian and bicycle connectivity. Within the downtown, sidewalks would be widened and improved along Santa Cruz Avenue and a new south parking plaza pedestrian link added, as well as new public spaces, including pocket parks, the Chestnut Street connector, Santa Cruz Avenue Central Plaza, the Chestnut Street Paseo, and use of two of the public parking plazas for occasional special events.

Within the station area, the sidewalk improvements in the downtown would be carried through to the station area and enhanced with a new Civic Plaza at the train station. The Civic Plaza would be a destination and gathering place for travelers and visitors to Menlo Park and downtown. Specific Plan Standards D.3.01 and D.3.02 and Guidelines D.3.03 through D.3.11 would promote the plaza's design to ensure it is visually linked to downtown and to areas to the east. In addition, Guidelines D.3.012 through D.3.14 would seek to enhance the existing Menlo Center plaza to provide a greater visual connection between that plaza and surrounding streets and open spaces. The Alma Street Civic Walk would be created to link the Civic Center with the station area, as envisioned in Guidelines D.3.15 through D.3.22. At the southern end of the station area, the Ravenswood Gateway would be redesigned pursuant to Specific Plan Guidelines D.3.23 through D.3.28, which calls for a coordinated treatment with the Alma Street Walk, lighting, signage, and other pedestrian improvements. Combined, these new open spaces and design guidelines would announce the presence of the station area and strengthen its connection to both downtown and to surrounding neighborhoods.

The Plan's attention to pedestrian amenities would be continued along El Camino Real, with wider sidewalks, particularly along the east side of the street where sidewalks would be widened to 15 feet with a 10-foot minimum pedestrian zone and a minimum five-foot furnishing and landscaping zone outside of the Station Area. Within the Station Area, sidewalks would be 12 feet wide. Pursuant to Specific Plan Design Guidelines D.4.01 through D.4.05, sidewalks would incorporate design criteria and a coordinated set of streetscape improvements to encourage walking and pedestrian activity. Pursuant to Guidelines D.4.06 through D.4.11, special treatments for intersections, streetscape elements and amenities would be incorporated to further pedestrian comfort and safety. These sidewalk improvements would not result in a significant impact to visual character. To the contrary, they would create a continual visual theme along the El Camino Real corridor.

Development pursuant to the Specific Plan would also result in open spaces along the east side of El Camino Real, south of the Station Area. The Burgess Park Linkage would create a seating and green space area that would also incorporate a pedestrian and bicycle linkage between Middle Avenue and Alma Street. Such an extension would continue the Middle Avenue view corridor eastward and provide a new public open space where none currently exists, pursuant to Specific Plan Guidelines D.4.12 through D.4.17.

These improvements would not result in adverse effects on the character of the area. To the contrary, they would encourage pedestrian activity on the sidewalks and create new spaces for public enjoyment that would complement the existing mixed use nature of the area.

Conclusion

Through the community workshops, a visual character for the Specific Plan area was defined in terms of both the built environment which includes building heights, massing and design, and the public open spaces such as parks, plazas, sidewalks and roadways. The Specific Plan acknowledges the need to address the community's desire for a more active and vibrant downtown, station area and El Camino Real corridor with mixed use infill projects, new community public spaces and new connections while also modulating the design of the new development to be sensitive to the existing small-town character.

As referenced in Section 4.1.2, *Regulatory Setting* above, the Menlo Park General Plan guides development and use of land in the City. Although the General Plan will be modified to incorporate the Specific Plan, the Plan is generally consistent with the existing goals and policies of the General Plan and in some cases will further those goals and policies. The Plan itself includes a discussion of the relationship between the General Plan and Specific Plan (Table G1 of the Specific Plan – El Camino Real/Downtown Specific Plan/City of Menlo Park General Plan Consistency Analysis).

Related to visual character, the General Plan includes goals and policies related to residential development, commercial development and open spaces. Regarding residential development, the General Plan encourages the quality and compatibility of new development with existing residential neighborhoods. The Specific Plan includes massing and design controls such as façade heights, upper level building profiles, and rear setbacks of between 10 and 20 feet where new development would abut existing residential development to ensure that infill development will be compatible with existing residential uses. Regarding commercial development, the General Plan encourages the strengthening of downtown as a vital and competitive shopping area with a mix of uses and services while preserving the historic character and ensuring sufficient parking provided in an attractively designed manner. The Specific Plan would require massing controls in the downtown area to ensure that new development is compatible with existing development. Additionally, design guidelines are incorporated in the Specific Plan to mimic historic patterns of narrow storefronts with facades that help to activate the street. The Plan also provides for a diversity of parking options that would provide sufficient parking for existing and future uses. Regarding open spaces, the General Plan encourages the provision of ample and diverse public open spaces and pedestrian facilities, and the provision of extensive landscaping in public and private developments. The Specific Plan adds significant new public spaces and enhances the pedestrian environment by creating wider sidewalks and new east-west connections. Additionally, open space in private developments is required by the Specific Plan. Although no private open space is required in the downtown area in order to maintain the strong street edge that currently exists, a minimum of 20 percent is required in areas adjacent to the downtown and a minimum of 30 percent is required in all remaining areas.

The Specific Plan would allow for changes in the built environment and public open spaces that would alter the visual character of the area. With reference to the built environment, although increased heights and intensities would be allowed, massing controls including façade height, upper level building profiles and massing limitations would lessen the visual effect of the

increased heights while also creating a more defined street edge. The tallest buildings at 60 feet in height would be located within existing commercial corridors, furthest from existing single-family residential neighborhoods, and along street and railroad right-of-ways that provide substantial buffers due to the width of those right-of-ways. Rear setbacks are also required throughout the Plan area to provide further buffers between new development and existing neighborhoods. The Specific Plan includes encroachments for canopies, awnings and other projections and standards and guidelines related to building breaks, façade modulation, building ground floor, entry and frontage treatments for commercial development that reinforces existing storefront patterns in the Plan area and provides visual interest.

The Specific Plan would add to the number and diversity of public open spaces and improve connections between the downtown, station area, El Camino Real, and other areas of the city. Also, pursuant to Specific Plan Guidelines D.5.01 through D.5.14, a consistent and coordinate streetscape would be developed.

The changes to the Plan area would occur within the context of the existing urban environment and would continue to appear as a combination of an auto-oriented commercial corridor along El Camino Real and a more intimate, smaller-scale downtown village along Santa Cruz Avenue and surrounding streets. The Plan would not introduce new heights not already found in the Plan area and would not affect natural, undeveloped areas. With the increase in public open spaces and wider sidewalks, more consistent landscaping and streetscape treatments, massing controls and detailed building design standards and guidelines, the Plan would ensure that visual character impacts are less than significant.

Mitigation: None required.

Impact AES-4: Implementation of the Specific Plan would not result in shading of outdoor recreation facilities, other public open spaces, historic buildings, or a substantial number of properties to an extent that would substantially affect, in an adverse manner, their use. (Less than Significant)

A shadow analysis of the proposed project was prepared to determine the extent of new shadows that would be cast in the project area by a conceptual composition of buildings constructed on opportunity sites identified in the Specific Plan and in accordance with Specific Plan height, bulk, and urban design controls.[6] It also includes shadow cast by existing buildings. Shadow was evaluated for three times per day, at 9:00 a.m., noon, and 3:00 p.m., during the spring and fall equinoxes, when the sun is at its midpoint and shadows are midway through their progression

[6] A copy of the shadow study figures is included as Appendix B of this document. The shadow study figures are shown for March, June and December. The March figures represent the spring and fall equinoxes as the shadows are the same during these times of the year. The June figures represent the summer solstice and the December figures represent the winter solstice.

between extremes; the summer solstice, when the sun is at its highest and shadows are shortest; and the winter solstice, when the sun is at its lowest and shadows are longest.[7] The times and dates selected allow for analysis of a representative range of shadow impacts throughout the year. Although not every development parcel was simulated to maximum buildout (i.e., maximum height and bulk permitted), the shadow analysis provides a basis for informed analysis of impacts of possible development scenarios.

In developed Peninsula downtowns and arterial corridors, shade and shadows are common, both from existing buildings as well as trees. Although shadows can have adverse impacts in some situations, many types of active spaces (for example: small parks, restaurant outdoor seating areas, and shopping corridors covered by awnings) experience shadow yet remain vibrant and well-used. In fact, such areas may be improved by shadows during certain times, for example during warmer weather when direct sunlight can be uncomfortable for extended periods of time. The following sections discuss the potential shadow impacts on the use of public outdoor recreation facilities and other public open spaces, including sidewalks, on historic buildings, and on a substantial number of other properties. The discussion references the number of building stories to represent building heights. Although buildings with the same number of stories can have different heights as well as design features that create variation in shadows, the discussion uses 14 feet as the height of existing one-story buildings and 29 feet as the height of existing two-story buildings, consistent with commonly found heights in the Specific Plan area. Potential maximum building heights outlined in the Specific Plan are included in the discussion and shown in Figure 4.1-6. Also, the discussion assumes a street orientation with El Camino Real running north-south and Santa Cruz Avenue running east-west for purposes of describing the shadow directions (northward, southward, eastward and westward).

In general, there are limited new shadow impacts, none of which have the potential to significantly affect in an adverse manner the use of outdoor recreational areas, public open spaces, historical resources, or substantial numbers of other properties. Given the built character of the Plan area, most new shadow tends to overlap existing shadow as opposed to creating shadow where none previously existed. Additionally, the orientation of the street grid is offset from north by about 35 degrees (i.e., Santa Cruz Avenue and streets parallel run northeast-southwest, and El Camino Real and streets parallel run northwest-southeast) limiting the shadow cast over public sidewalks and streets. Furthermore, the Specific Plan itself includes design requirements that reduce shadow impacts. Requirements include façade height limits, 45-degree building profiles at upper levels resulting in the setback of upper levels, and façade length maximums at upper levels that serve to limit the size of upper levels and the shadows cast by the buildings.

[7] For this analysis, Pacific Standard Time is used in December, and Pacific Daylight Time is used for March, June, and September.

Public Open Spaces

Downtown

Within and adjacent to the downtown, the existing outdoor recreation facilities and public open spaces include Fremont Park, the sidewalks to the extent they are used for pedestrian activities and outdoor dining, and the public parking plazas to the extent they are used for events such as the Farmer's Market. Fremont Park does not receive shadow from buildings within the Plan area under existing conditions, and also would not receive shadow under the Specific Plan due to its orientation southwest of the Plan area.

Under existing conditions, sidewalks receive varying degree of shadow from the primarily one- and two-story buildings currently located in the downtown area. In general, the longest shadows are cast northward in the mornings and eastward in the afternoons. Lesser shadows are cast southward in the afternoon and westward on spring, fall and summer mornings. More detail on the shadows from existing buildings is discussed below for specific times of the day.

In the mornings, northward shadows are longest in the winter, ranging from approximately 55 feet for a one-story building to 100 feet for a two-story building, shorter in the spring and fall at approximately 27 feet for a one-story building and 50 feet for a two-story building, and shortest in the summer at approximately 12 feet for a one-story building and 25 feet for a two-story building. Eastward shadows are cast in the winter and range from approximately 15 feet for a one-story building to 27 feet for a two-story building. Westward shadows in the spring and fall are approximately two feet for a one-story building and four feet for a two-story building and summer shadows are approximately six feet for a one-story building and 12 feet for a two-story building. No southward shadows are cast.

At noon, northward shadows are longest in the winter, ranging from approximately 15 feet for a one-story building to 30 feet for a two story building, shorter in the spring and fall at approximately seven feet for a one-story building and 15 feet for a two-story building, and shortest in the summer at approximately two feet for a one-story building and five feet for a two-story building. Eastward shadows are also longest in the winter, ranging from approximately 22 feet for a one-story building to 45 feet for a two-story building, shorter in the spring and fall at approximately 10 feet for a one-story building and 18 feet for a two-story building, and shortest in the summer at approximately three feet for a one-story building and five feet for a two-story building. No westward or southward shadows are cast.

In the afternoon, no northward or westward shadows are cast. Eastward shadows are longest in the winter and range from approximately 48 feet for a one-story building to 97 feet for a two story building. Eastward shadows are shorter in the spring and fall at approximately 18 feet for a one-story building and 35 feet for a two-story building, and shortest in the summer at approximately eight feet for a one-story building and 15 feet for a two-story building. Southward shadows are generally the same length at all times of the year and range from approximately eight feet for a one-story building to 13 feet for a two-story building.

The existing sidewalks in the downtown area are approximately seven feet in width. Given the shadows described above, existing one-story buildings shade much of the sidewalks. On the north side of Santa Cruz Avenue and parallel streets, sidewalks are shaded every afternoon. The south side of Santa Cruz Avenue and parallel streets experience shade every morning. The east side of the cross streets that run perpendicular to Santa Cruz Avenue are shaded on summer mornings by the approximately six to 12-foot shadows created by one- and two-story buildings and partially shaded on spring and fall mornings by two to four-foot shadows. The west side of the cross streets are shaded on winter mornings and every afternoon.

The Specific Plan would allow for increased heights of 38 feet compared to the currently allowed maximum heights of 30 feet within the area zoned C-3 (Central Commercial District) and 35 feet for areas north of Oak Grove Avenue, west of University Drive and south of Menlo Avenue. To help lessen the effects of the increased height, the new height limit would include a requirement for massing controls with a 45-degree upper level building profile, requiring upper levels be setback above the 30-foot façade height. In the central commercial area, the façade height would be equal to the current maximum height and in the areas adjacent to the commercial center the façade height would be lower than the currently allowed maximum height. The proposed 38-foot height limit would accommodate up to three-story tall buildings. However, as discussed in Impact AES-3, a third floor cannot be accommodated in the eight feet remaining between the 30-foot façade height and 38-foot maximum height. As a result, three-story tall buildings would likely have a lower façade height of approximately 25 feet to accommodate a third floor. A two-story building would be able to use the full 30-foot maximum façade height. Due to the street grid orientation and given the required 45-degree upper level building profile, the shadows that would be cast by three-story tall buildings would be approximately double the height of existing one-story buildings but generally equivalent to existing two-story buildings. Shadows would most often overlap existing shadow and would not create additional shadow on sidewalks than occurs under existing conditions. In addition to allowing an increased building height, the Specific Plan includes guidelines for wider sidewalks along Santa Cruz Avenue (Guidelines D.2.08 through D.2.12) and Chestnut and Crane Streets in the areas leading to the proposed pocket parks (Guideline D.2.53). Where feasible, sidewalks along Santa Cruz Avenue could be widened to include a building frontage zone, 12-foot wide pedestrian zone and five-foot wide furnishing zone. Sidewalks along Chestnut and Crane Streets could be widened to create an eight-foot wide pedestrian zone. As sidewalks are widened, more of the sidewalk would be exposed to sun than under existing conditions. For example, along Santa Cruz Avenue more of the sidewalk would be exposed to sun during the noontime in the spring, summer and fall where shadows would range from approximately two to seven feet from an existing one-story building and five to 15 feet for a taller building.

Potential new garages on the public parking plazas would cast new northward shadows in the mornings of approximately 25 feet in the summer, 52 feet in the spring and fall, and 112 feet in the winter. The shadows would reduce throughout the day such that no shadow would be cast by mid afternoon. Eastward shadows would be cast primarily from noon through the afternoon, with maximum shadows of approximately 15 feet in the summer40 feet in the spring and fall, and 110 feet in the winter. There would be southward shadows of approximately 13 feet in mid afternoon and westward shadows of between four and 12 feet on summer, spring and fall

mornings. Parking plazas 1 and 3 are surrounded primarily by other buildings. Parking plaza 2 borders existing buildings to the south and public streets on the remaining sides. Any structured parking would also be separated from the existing buildings by a minimum setback of 25 feet in order to accommodate circulation needs and provide an interface with the existing buildings. Given that the possible shadow that would be created by the development of structured parking would replace existing surface parking lots and new shadow would therefore be cast largely on spaces currently used for automobile parking and adjacent buildings, the new shadows would not substantially impact the use of the area for its primary purpose of parking. The impact of the development of structured parking on the pocket parks is discussed below.

Public parking plazas to the south of Santa Cruz Avenue would not experience new shadow to the extent that there would be reduced use of the plazas as a result of taller development on existing building sites. This is because most surrounding existing properties that have the potential to cast northward shadow on the plazas are currently developed at two-story building heights and, as discussed above, if redeveloped with three-story tall buildings with upper level 45-degree building profiles, would cast shadow generally equivalent to the existing two-story tall buildings.

The Specific Plan would permit a proposed market place that would border Chestnut Street, adjacent to public parking plazas 6 and 7. The market place building is envisioned in the Specific Plan as being a small-scale open air or enclosed area. At most, the market place would be one story in height, casting eastward shadows onto parking plaza 7 in the afternoon of between 18 and 48 feet with the longest shadows occurring in winter. The new shadows would not reduce the desirability of the plazas for their primary use as parking areas. Westward shadows would be cast on parking plaza 6, the site of the Farmer's Market, of between two and six feet in the mornings. The small degree of shadow that would be cast would not impact the functionality of the Farmer's Market.

The Specific Plan proposes new public open spaces including the Santa Cruz Avenue Central Plaza, Chestnut Street Paseo and market place, south parking plaza pedestrian link, flex space parking plazas 5 and 6, and pocket parks. The flex space parking plazas are discussed above in reference to the parking plazas south of Santa Cruz Avenue.

The Santa Cruz Avenue Central Plaza is adjacent to existing two-story-height buildings to the south and one-story-height buildings to the north. As noted earlier in the discussion, there would be a generally equivalent shadow with the replacement of two-story-height buildings with three-story tall buildings with upper level 45-degree building profiles, but shadows would modestly increase in the afternoons from approximately eight feet to 13 feet if one-story-height buildings were replaced with three-story tall buildings with upper level 45-degree building profiles. The modest increase in afternoon shadows would not substantially affect or preclude the use of the plaza and would provide additional shade on warm afternoons. The Specific Plan recognizes the desirability of shading during the summer to make public spaces more inviting.

The Chestnut Street Paseo and market place is adjacent to an existing two-story-height building to the east and a partial two-story height building to the west of Chestnut Street. Under the existing conditions, Chestnut Street is partially shaded in the afternoon in spring, fall, and

summer and in the mornings in the winter. The street is fully shaded during winter afternoons. A change from a two-story building height to a three-story building height with upper level 45-degree building profiles would not create additional shadow impacts given that the shadows would be generally equivalent and the fact that the street is completely shaded during winter afternoons under existing conditions.

The south parking plaza pedestrian link is adjacent to both one-story- and two-story-height buildings, with the majority of the one-story-height buildings in the blocks between Crane Street and University Drive. As discussed earlier, the shadow from three-story tall buildings with upper level 45-degree building profiles would be generally equivalent to the existing two-story height buildings. However, shadows would increase from approximately eight feet to 13 feet in the afternoons if the one-story-height buildings were to be replaced with three-story tall buildings with upper level setbacks. Given that the pedestrian sidewalks would be shaded under existing conditions, the increase in shadow is not a significant new constraint on the transitory use of the proposed pathway.

Two new pocket parks are also proposed in the Specific Plan along Chestnut and Crane Streets. Both pocket parks would be developed on sites with existing surface parking. Under existing conditions, both pocket parks would receive shade in the mornings up through early afternoon, with the amount of shade decreasing throughout the day, from adjacent two-story-height buildings. At its maximum, the amount of shade cast north varies from approximately 25 feet in the summer to over 100 feet in the winter. Specific to the Crane Street park, it would also receive shadow cast south in the afternoons of about 13 feet in length. As discussed earlier, new three-story tall development would cast generally equivalent shadows to the existing two-story-height buildings. However, both pocket parks would also be located adjacent to sites currently used for surface parking and on which structured parking with a maximum height of 38 feet, a façade height of 30 feet and required 45-degree building profiles may be considered. The Crane Street pocket park would be located east of public parking plaza 3. If the plaza were to be developed with structured parking, the park would receive shadow cast eastward of approximately 65 feet on winter afternoons, depending on the exact distance of the park in relation to the development. The Chestnut Street pocket park would be located to the east of public parking plaza 2. If the plaza were to be developed with structured parking, the park would receive additional shade cast eastward during the spring and fall of approximately 18 feet at noon extending to approximately 40 feet in the late afternoon, in summer of approximately 15 feet during late afternoons, and in winter of approximately 27 feet in the mornings extending throughout the day to approximately 110 feet by late afternoon. Although the proposed parks are partially shaded in the mornings under existing conditions, potentially taller structures adjacent to each park would introduce shade in the afternoon. Both the existing and potential new shadow would be greatest in the winter, shading a majority of the parks. The inclusion of the proposed pocket parks helps to address one of the key objectives of the Specific Plan which is to provide plaza and park spaces. The Plan further defines the character of the pocket parks as being green and shaded with landscaping and seating areas. The partial shading of the parks throughout the year would provide opportunities for both shady and sunny areas of the park, consistent with the objectives of the Specific Plan and would not adversely impact the use of the parks as places for respite and gathering.

Station Area

Within the station area, the Specific Plan allows heights of 48 feet on the west side of El Camino Real and along Alma Street and up to 60 feet in the central station area, with required upper level 45-degree building profiles above a façade maximum height of 38 feet. A height of 48 feet generally allows for three stories of commercial development or four stories if residential is included due to the lower ceiling heights in residential development and 60 feet generally allows for four stories of commercial development or five stories if residential is included.

Within the station area, the existing outdoor recreation facilities and public open spaces include Menlo Center Plaza and the sidewalks to the extent they are used for pedestrian activities and outdoor dining. The Plan also proposes improvements to outdoor public spaces including a Civic Plaza, Alma Street Civic Walk and Ravenswood Gateway. Shadow impacts on both existing and proposed public spaces are discussed in this section.

Under existing conditions, Menlo Center Plaza receives very little shadow, peaking with westward shadows of approximately 18 feet in the mornings during the summer from Menlo Center itself. Given the age of Menlo Center at approximately 20 years old, it is not anticipated that the site would be redeveloped in the short- or-mid-term. The only other development envisioned in the Specific Plan that would have the potential to create shadow on Menlo Center Plaza would be a maximum height building directly across El Camino Real from the plaza which would cast eastward shadow of approximately 125 feet on winter afternoons, resulting in a partial shading on the edge of the plaza nearest El Camino Real. The shadow would not reach the plaza during other times of the year. In that sun would still reach the portions of the plaza on winter afternoons near the buildings, where outdoor seating is located, the additional shading would not adversely impact the usability of the plaza.

The Specific Plan proposes a new public plaza, Civic Plaza, to the northeast of the existing Menlo Center Plaza, at the eastern end of Santa Cruz Avenue. This location to the northeast places the plaza out of much of the range of the northward shadows cast by the Menlo Center buildings. The plaza would, however, receive some shadow from taller south-facing buildings. The redevelopment of the existing one-story-height buildings with four- to five-story-height buildings would create additionally shadow, increasing from approximately eight feet in the afternoons to approximately 18 feet in the winter, 22 feet in the spring and fall and 27 feet in the summer. The inclusion of the proposed plaza helps to address key objectives of the Specific Plan to provide plaza space, activate the train station area, and improve pedestrian and bicycle connections. The partial shading of the plaza would provide opportunities for both shady and sunny areas and would not substantially affect or preclude use of the plaza as a transit and gathering center for the city. The Specific Plan recognizes the desirability of shading during the summer to make public spaces more inviting.

The primary sidewalks in the station area that receive shadow under existing conditions are along El Camino Real, Alma Street, Merrill Street and short segments of Santa Cruz Avenue, Menlo/Ravenswood Avenues, and Oak Grove Avenue. With the exception of Menlo Center at approximately 46 feet in height, El Camino Real within the station area is primarily developed

with one-story-height buildings and a few two-story-height buildings. El Camino Real receives shadow primarily from buildings on the west side of the street where existing one-story-height buildings create eastward afternoon shadows ranging from eight feet in the summer to 18 feet in the spring and fall and 48 feet in the winter. Two-story heights create shadows generally double that of the one-story heights. The development of three- to four-story heights would increase afternoon eastward shadows to approximately 20 feet in the summer, 47 feet in the spring and fall and 125 feet in the winter. Winter mornings would also be shaded eastward approximately 15 feet by a one-story height building and 27 feet for a two-story or taller height building. Westward shadows occur only in spring, summer and fall mornings and generally range from two feet for a one-story height building to four feet for a taller building in the spring and fall and from approximately six to 12 feet in the summer. Given the width of the existing sidewalks at approximately seven feet, sidewalks are shaded throughout the year in the afternoon and on winter mornings on the west side of El Camino Real from the existing one-story buildings. The additional shade cast by taller buildings would not create further shading of these sidewalks than exists under current conditions. Westward shadows are limited to spring, fall and summer mornings and would increase with taller buildings. However, the shadows are fairly limited in length and would recede by noon. Sidewalks on the east side of El Camino Real may also receive some added shadow on winter afternoons from new taller buildings on the west side of El Camino Real. However, the sidewalks on the east side of El Camino Real would continue to receive partial to full sun on winter mornings, and from noon through the afternoon throughout the year.

Alma Street is similarly developed with mostly one-story buildings and one two-story building. Because of Alma Street's adjacency to the railroad right-of-way, there are no eastward shadows cast on Alma Street. Similar to El Camino Real, westward cast shadows are limited to shadows in spring, fall and summer mornings. As discussed above, these are generally shorter shadows of less than four feet in the spring and fall for one- and two-story heights and ranging from 6 feet for a one-story height to 12 feet for a two-story height in the summer. A three- to four-story height building would have similar shadows that range from approximately four feet in the spring and fall and 13 feet in the summer. The Specific Plan includes a proposed public improvement identified as the Alma Street Civic Walk. The improvement would increase the sidewalk along Alma Street to a minimum 15-foot width, thereby enhancing pedestrian circulation between the downtown, station area and Civic Center. The Specific Plan further calls for the walk to be tree-lined to create ample shade. The increased shadow from taller buildings would be consistent with the proposed character of the Alma Street Civic Walk and yet allow for sun on a portion of the sidewalk for most of the year. A second improvement identified in the Specific Plan is the Ravenswood Gateway which is connected to the Alma Street Civic Walk. The Gateway is intended to create a sense of gateway to both the Civic Center and downtown and, as such, spans Ravenswood Avenue with two small plazas on each side of the street. The Gateway is bordered by the tall one-story height of the Library to the south and a one-story tall building to the north. If the one-story tall building were to be replaced with a three- to-four-story tall building, southward afternoon shadows would increase from approximately eight feet to between 17 feet in the winter and 22 feet in the summer. The increase in afternoon shadow would not affect the intended use of the plazas as a pedestrian crossing and civic gateway.

The east side of Merrill Street is adjacent to the train station area and its associated parking and as a result the sidewalks experience minimal to no westbound shading under existing conditions. The intent of the Specific Plan is to preserve and highlight the train station area (Standard D.3.01) therefore no change would be expected in the existing westbound shadows. The west side of Merrill Street is lined by Menlo Center to the south of Santa Cruz Avenue and one- and two-story buildings to the north of Santa Cruz Avenue. Existing eastbound shadow fully shades the sidewalk on afternoons and on winter mornings. Development of taller buildings within the station area would increase shadows but would still retain sun on spring, summer and fall mornings, similar to existing conditions. The Specific Plan proposes improvements to the Merrill Street sidewalks to enhance the connection to Oak Grove Avenue (Guideline D.3.11).

Santa Cruz Avenue, Menlo/Ravenswood Avenues and Oak Grove Avenue are primarily lined with one- and two-story-height buildings within the station area. The one exception is a three-story height residential complex on Oak Grove Avenue east of El Camino Real. Existing shadow is similar to the downtown with the longest northward shadows ranging from approximately 12 to 55 feet for a one-story height to between 25 and 100 feet for a two-story height occurring on winter, spring and fall mornings and southward shadows ranging from eight to 13 feet in the afternoons. Under existing conditions, the sidewalks receive sun at noontime during the summer, but otherwise are generally shaded given the width of sidewalks at approximately seven feet. Proposed taller buildings would lengthen shadows, including shading more of the sidewalk at noontime in the summer. However, north-facing sidewalks would continue to receive sun in the afternoon year round and south facing sidewalks would continue to receive sun in the mornings.

El Camino Real North and South of Downtown[8]

The Specific Plan proposes distinct height and design regulations for different segments of El Camino Real depending on the surrounding land use context. North of Oak Grove Avenue, the Plan proposes a height limit of 38 feet although there are different requirements for upper stories along this segment. Additionally, some areas allow for a height of up to 48 feet with the provision of public benefit. These areas are specifically identified below. The portion of El Camino Real north of Encinal Avenue includes upper floor 45-degree building profiles above a façade height maximum of 30 feet in recognition of the location of the segment adjacent to primarily one- and two-story height single-family residences to the east. Existing buildings in this segment are a mix of one-story and two-story heights, with one three-story tall residential building. Similar to the downtown area, shadows cast by new three-story tall buildings with upper floor 45-degree building profiles would be generally the same length as shadows cast by existing two-story tall buildings. However, there would be additional shadow generally equivalent to the existing two-story heights in cases where existing one-story buildings are replaced by three-story tall buildings with upper level 45-degree building profiles. Public open spaces in this segment are the sidewalks, used mainly for pedestrian activities. The existing sidewalks are five to 10 feet in width and would be expanded to 15 feet in width under the Specific Plan. Westward shadows cast

[8] Existing heights along El Camino Real are limited to a maximum of 30 feet. However, certain areas along El Camino Real have greater existing height limits established by Planned Development (PD) zoning. Existing height limits are as follows: PD-1 is 56 feet, PD-2 is 49 feet, PD-4 is 46 feet, PD-6 is 33 feet (residential component), and PD-8 is 40 feet. The PD-6 and PD-8 have not yet been constructed.

toward the sidewalk are fairly limited, occurring on spring, fall and summer mornings. The spring and fall shadows would increase from approximately two feet to four feet and summer shadows from approximately six feet to 12 feet. Under both existing and proposed conditions, the sidewalks would receive full to partial sun in the afternoons and most mornings. The most substantial shade would be experienced on summer mornings, but even this shadow is limited in duration, ending by noon. Given the limited amount of shadow cast westward, the use of the sidewalks for pedestrian activities would not be substantially limited.

Between Encinal Avenue and Oak Grove Avenue, the character of the surrounding properties changes to primarily two-story tall multiple-family residential uses. In response to this change, the Specific Plan does not require the upper level 45-degree building profiles for the 38-foot heights as in the segment to the north. However, properties along the east side of El Camino Real in this area are allowed increased heights up to 48 feet subject to the provision of public benefit. Heights above 38 feet would be required to apply the 45-degree building profile. This represents a gradual increase in building heights from the northerly border of the city to the station area, where taller heights would be located in order to encourage greater activity near the downtown and transit center. Existing heights within the segment are a mix of one-story and two-story buildings. There are also two approved projects and one pending project within this segment that have not yet begun construction but would have heights of between 38 and 40 feet, generally compatible with the Specific Plan. As with the segment to the north, the public spaces are comprised of the sidewalks. Also similar to the segment to the north, westward shadows cast toward the sidewalks from buildings on the east side of El Camino Real are limited for both existing buildings and proposed taller development. Both the existing sidewalks and proposed wider sidewalks would receive either full or partial sun for most of the year. Eastward shadows cast on sidewalks from buildings located on the west side of El Camino Real would occur primarily from noon through the afternoon, with maximum shadows from one-story heights of approximately eight feet in summer, 18 feet in spring and fall and 48 feet in winter. Shadows from two-story heights would be approximately double those of one-story tall buildings. Shadows cast from three-story-height buildings with no upper floor 45-degree building profiles would be approximately 20 feet in the summer, 47 feet in the spring and fall, and 125 feet in the winter. Under existing conditions, sidewalks are fully shaded from one- and two-story heights. New shadow from taller buildings would overlap existing shadow and extend further into the street. Given the approximately 100-foot width of El Camino Real, and with the exception of winter afternoons, shadows from taller buildings would not fully cross El Camino Real. Winter afternoon shadows may shade sidewalks located on the east side of El Camino Real. However, the sidewalks on the east side of El Camino Real would continue to receive partial to full sun on winter mornings, and from noon through the afternoon throughout the year.

The segments of El Camino Real to the south of the station area are treated differently on the west and east sides of the street. Along the west side, the Specific Plan recognizes the primarily residential nature of the adjacent properties, and therefore proposes height and design controls similar to the most northerly segment of El Camino Real. Heights are limited to 38 feet with a 45-degree building profile above a façade height of 30 feet. Existing buildings have a mix of one- and two-story heights. Impacts on the sidewalks from existing one-story height buildings would

occur primarily from noon throughout the afternoon and range from approximately 10 feet at noon to 18 feet in the afternoon in the spring and fall, from approximately three feet at noon to eight feet in the afternoon in the summer and from 15 feet in the morning to 48 feet in the afternoon in the winter. The heights of two-story tall buildings are approximately double that of the one-story height buildings. The introduction of new three-story height buildings with upper level 45-degree building profiles would increase the shading on the sidewalks in areas where one-story buildings would be replaced. As noted previously, shadows for two- and three-story heights with upper level 45-degree building profiles are similar. Given the width of the existing sidewalks at five to 10 feet, the sidewalks are fully shaded in the afternoons under existing conditions. The Specific Plan proposes widening of the sidewalks to a minimum of 12 feet south of Live Oak Avenue however sidewalks would still be shaded similar to existing conditions. The Plan acknowledges the benefits of shading in the summer to enhance the pedestrian experience. The sidewalks receive sun on spring, summer and fall mornings under existing conditions and would continue to receive sun if properties were to be redeveloped with taller buildings.

On the east side of El Camino Real, south of the station area, the Specific Plan allows for heights of 60 feet with 45-degree building profiles above a façade maximum height of 38 feet, similar to the station area. Existing buildings include three- and four-story buildings up to 56 feet in height at the northern and southern ends of the segment, with one-story heights and surface parking lots in the middle of the segment. Existing sidewalks are between five and 10 feet in width, although the Specific Plan proposes minimum widths of 15 feet. The greatest change in shadows would occur in the area of the segment dominated by one-story-height buildings and surface parking lots. However, due to the limited nature of westward shadows in general, the additional shading from four- to five-story height buildings with upper floor 45-degree building profiles at a maximum façade height of 38 feet would not substantially limit use of the sidewalks for pedestrian activities or outdoor dining. Shadows occur in the mornings in the spring, summer and fall, receding by noon. The morning shadows would increase from approximately two feet to six feet in the spring and fall and from approximately four feet to 13 feet in the summer with the development of taller building. The sidewalks would continue to receive sun in the afternoons and partial sun most mornings. The Specific Plan also includes a design guideline (D.4.05) for the incorporation of street trees in sidewalks to provide additional shading for pedestrians.

Within this segment of El Camino Real, the Specific Plan envisions a new open space plaza with pedestrian and bicycle linkage to Burgess Park to the east. The Plan would require the plaza to be a minimum of 120 feet in width. Shadows cast northward and southward from new development that would border the plaza would have the potential to create shadow on the plaza. The Specific Plan would require the 45-degree building profile on the sides of buildings that front on the plaza, thereby limiting the length of shadows. The longest northward shadows would occur in the mornings with shadows of approximately 60 feet in the spring and fall, 30 feet in the summer and approximately 140 feet in the winter. The shadows would reduce substantially by noon to approximately 20 feet in the spring and fall, seven feet in the summer and 40 feet in the winter and would fully recede by the afternoon. Southward shadows occur in the late afternoon with lengths of approximately 19 feet in the spring and fall, 22 feet in the summer, and 17 feet in the

winter. Given the minimum width of the plaza at 120 feet, the plaza would have partial sun at all times of the year with the exception of winter mornings.

The Specific Plan also requires additional breaks in the building massing at Roble, Middle, Partridge and Harvard Avenues as well as additional breaks north and south of Middle Avenue. The breaks at Roble, Partridge and Harvard Avenues are required to be 60 feet in width. Other breaks may be provided as deep recesses of a minimum of 60 feet in width and 40 feet in depth. The narrower breaks would experience full shade on spring, fall and winter mornings, but have partial to full sun at other times. The Specific Plan defines the character of the plazas and building breaks as areas providing shade and seating for small informal gatherings. Guideline D.4.14 include the provision of green space and shaded areas. The partial shading that would occur at most times of the year would be consistent with the character as defined by the Specific Plan and would provide access to both sun and shade for plaza users.

Historic Resources

As discussed in Section 4.4, *Cultural Resources*, several buildings in and immediately outside the Plan area are considered historic or potentially historic resources for the purposes of CEQA because they are: (1) a resource determined by the State Historic Resources Commission to be eligible for the California Register of Historical Resources (including all properties on the National Register); (2) a resource included in a local register of historical resources, as defined in Public Resources Code (PRC) Section 5020.1(k); (3) a resource identified as significant in a historical resource survey meeting the requirements of PRC Section 5024.1(g); or (4) any object, building, structure, site, area, place, or manuscript that the City determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California, provided the lead agency's determination is supported by substantial evidence in light of the whole record. Generally, a resource shall be considered to be historically significant if it meets the criteria for listing on the California Register. Buildings constructed pursuant to the controls of the Specific Plan could cast shadow on some of these historic resources at certain times of the year. New shadow on historic buildings is considered here to determine whether that shadow could detract from important characteristics that qualify one or more buildings as historical resources.

Downtown

Historic resources within the downtown area are located along El Camino Real and include Doughty's Meat Market/Kate Taylor Interiors at 1162 El Camino Real, Martin J. McCarthy Groceries at 1170 El Camino Real, K.L. Plumbing/Guy Plumbing at 1265 El Camino Real, and the Park Theater at 1275 El Camino Real. Doughty's Meat Market/Kate Taylor Interiors and Martin J. McCarthy Groceries are located on the east side of El Camino Real. The facades of the buildings experience relatively short westward shadows of less than four feet on spring and fall mornings and less than 12 feet on summer mornings as a result of the buildings themselves. This condition would not change as a result of the Specific Plan. However, the area across El Camino Real would allow for taller buildings with 48 feet in height and upper level 45-degree building profiles above a façade height of 38 feet. New taller development on the west side of El Camino

Real could create winter afternoon shadows of up to 125 feet which would have the potential to reach the facades of the historic buildings. Even with the winter shadows, the buildings would retain sunlight on their principal facades during the midday hours throughout the year and on afternoons with the exception of winter afternoons. The winter afternoon shadow that could be created with taller buildings would be similar to conditions in which some shadow typically falls on historic buildings in the afternoon. Therefore, character-defining features of these historic buildings would not be substantially altered, and the impact would be less than significant.

K.L. Plumbing/Guy Plumbing and the Park Theater are located on the west side of El Camino Real. Both buildings are at least of a two-story height, with the Park Theater having additional height for its decorative center feature. The buildings themselves create eastward shadows in the afternoons that range from 15 feet to over 100 feet, with the shortest shadows in the summer and the longest shadows in the winter. The buildings also experience shadow on winter mornings of approximately 27 feet. This condition would not change as a result of the Specific Plan. Westward shadows from taller buildings across El Camino Real would not reach the facades of the historic buildings. Although the building facades are currently shaded in the afternoons and on winter mornings, the buildings would retain the sun they currently experience on spring, summer and fall mornings. Since there would be no additional shading as a result of the Specific Plan, the impact would be less than significant.

Station Area

Historic resources in the station area include the Menlo Park Caltrain Station at 1100 Merrill Street and the potentially historic American Trust Company building at 1090 El Camino Real and the building at 1145 Merrill Street. The Caltrain station building is located to the east of existing two-story buildings along Merrill Street and to the west of one-story buildings along Alma Street. The buildings along Merrill Street cast eastward afternoon shadows that range from approximately 15 to 97 feet with the shortest shadows in the summer and the longest shadows in the winter. The existing buildings also cast winter morning shadows of approximately 27 feet. With approximately 70 feet of distance between the buildings located on Merrill Street and the Caltrain station building, the station receives eastward winter afternoon shadow under existing conditions. Under the Specific Plan, the buildings along Merrill Street would be allowed a height of 60 feet with upper level setbacks above a façade maximum height of 38 feet. The increased height would result in winter afternoon shadows of approximately 125 feet, shading more of the station building. However, the station would continue to receive sun at all other times of the year, similar to existing conditions. The one-story buildings along Alma Street cast westward shadows on spring, fall and summer mornings of less than six feet which would not reach the Caltrain station building. If the area along Alma Street were redeveloped with taller buildings as allowed in the Specific Plan, the shadows would increase to a maximum of approximately 13 feet on summer mornings, but would still not reach the Caltrain station building. The development of taller buildings allowed by the Specific Plan would not result in new shadow at times when no shadow is experienced. Since the station currently experiences winter afternoon shadow, the increased length of the shadow would have a limited impact on the defining features of the building, therefore would be less than significant.

The building at 1090 El Camino Real is a two-story building located to the northwest of Menlo Center. The building is currently partially shaded by northward morning shadows that range from approximately 35 feet in the summer to 70 feet at other times of the year. The majority of the shadow falls to the rear of the building given its location northwesterly of Menlo Center. Existing buildings located to the north, across Santa Cruz Avenue and to the west across El Camino Real are one- and two-stories in height and do not create shadows that reach the building. If properties in the surrounding areas were redeveloped with buildings to the maximum allowed height of 60 feet with upper level 45-degree building profiles above a 38-foot façade height, eastward shadows would increase similar to the buildings adjacent to the Caltrain station building, resulting in winter afternoon shadows of approximately 125 feet that could potentially shade a portion of the front façade of the building. This would be the only additional shadow and would be for a short duration on winter afternoons, with limited impact on the defining features of the building. The impact would be less than significant.

The building located at 1145 Merrill Street is a tall two-story building located on the west side of Merrill Street, across the street from the train station and associated parking areas and as a result experiences no westbound shading under existing conditions. As noted previously, the intent of the Specific Plan is to preserve and highlight the train station area (Standard D.3.01) therefore no change would be expected in the existing westbound shadows. The buildings themselves create eastward shadows in the afternoons that range from 15 feet to near 100 feet, with the shortest shadows in the summer and the longest shadows in the winter. The buildings also experience shadow on winter mornings of between approximately 27 feet. This condition would not change as a result of the Specific Plan. Although the building facade is currently shaded in the afternoons and on winter mornings, the building would retain the sun it currently experience on spring, summer and fall mornings. Since there would be no additional shading as a result of the Specific Plan, the impact would be less than significant.

El Camino Real North and South of Downtown

Identified historic resources along El Camino Real are focused south of the downtown and include the Oasis at 241 El Camino Real and the John Duff House at 849 El Camino Real. The Guild Theater at 949 El Camino Real and Menlo Clock Works at 961 El Camino Real were also identified in the City's 1990 historic buildings survey as potentially historic, although the State Office of Historic Preservation did not agree with this designation (see Chapter 4-4, Cultural Resources).

All of the historic or possibly historic buildings are located on the west side of El Camino Real and therefore are impacted primarily by eastward shadows. Because all of the buildings are either two-stories in height or taller than average one-story buildings, the facades of the buildings are shaded in the afternoons by the buildings themselves. Although new development across El Camino Real could have heights of up to 60 feet with upper floor 45-degree building profiles at a façade height of 38 feet, the westward shadows created by the taller buildings would not extend across El Camino Real. The Specific Plan would not result in new shadow on the facades of the buildings; therefore, the impact is less than significant.

Other Areas

There are historic buildings outside of the Specific Plan area but within proximity to the Plan area. These include the Barron-Latham-Hopkins Gate Lodge at 555 Ravenswood Avenue, the Bright Eagle Mansion at 1040 Noel Drive, the Church of the Nativity at 210 Oak Grove Avenue, the Holy Trinity Episcopal Church/Russian Orthodox Church at 1220 Crane Street, and Portola's Journey's End, at the intersection of East Creek Drive and Alma Street. The Barron-Latham-Hopkins Gate Lodge, Bright Eagle Mansion, and Church of the Nativity would not experience any shadow impacts due to the distance from the Plan area.

The Nativity of the Holy Virgin Church (Holy Trinity Episcopal/Russian Orthodox Church) is located directly behind properties that front on Oak Grove Avenue and across the street from properties that front on Crane Street. The Oak Grove Avenue and Crane Street properties are within the Specific Plan area and would be allowed heights of 38 feet with an upper level 45-degree building profile above 30 feet on facades fronting a public right-of-way. The existing buildings in this area are developed with two-story height buildings of approximately 30 feet and one three-story building at 718 Oak Grove Avenue, which is 35 feet tall. Northbound shadows from buildings fronting on Oak Grove Avenue would be approximately 10 feet greater than existing shadows on spring and fall mornings and approximately 20 feet longer on winter mornings. Eastbound shadows from buildings fronting on Crane Street would be approximately 10 feet longer on spring and fall afternoons and winter mornings and approximately 15 feet longer on winter afternoons. Given the street right-of-way on Crane Street and minimum rear setback requirement of 10 feet for new buildings on Oak Grove Avenue, the Church would not experience substantial new shadow.

Portola's Journey's End is located east of the railroad right-of-way near the southern boundary of the city. The Stanford Park hotel is located west of the monument, within the Specific Plan area. Although the hotel site is not identified as an opportunity site in the Specific Plan, if buildings of up to 60 feet in height with rear building profiles above the façade height of 38 feet were developed on the site, shadows would decrease from approximately 145 feet to 125 feet.

Adjacent Properties

As new development occurs, existing properties both within and outside the Specific Plan area could receive new shadow. Since the longest shadows occur northward and eastward, this discussion focuses on those two directions. Southward shadows are relatively short at between approximately eight and 15 feet in the afternoon for existing one- and two-story buildings. With the redevelopment of properties with 60-foot tall buildings, there would be a modest increase of shadows up to approximately 30 feet on summer afternoons. Along the southeast portion of El Camino Real where building profiles above 38 feet would apply to the rear of buildings, the shadow would be reduced to approximately 22 feet. At other times of the year or with shorter buildings, shadows would be less than 20 feet in length. Westward shadows are even more limited at less than six feet for a one-story-height building and at between 12 and 18 feet for a two-story-height or taller building on summer mornings. Given the relatively modest increases in shadows from taller buildings and buffers between buildings created by street and railroad right-of-ways and required setbacks, southward or westward shadows would not create an impact on a substantial number of properties.

Downtown

Within the downtown area, potential shadow impacts to adjacent properties would most likely come from the development of new buildings where no building exists under current conditions, such as new garages on the public parking plazas. This is in part because the development of new garages to the maximum height allowed in the Specific Plan of 38 feet with upper level 45-degree building profiles at a maximum façade height of 30 feet would create shadow generally equivalent to existing two-story-height buildings, with the new shadow overlapping existing shadow. Development on the public parking plazas would cast northward shadows of approximately 25 feet on summer mornings, 52 feet on spring and fall mornings and 112 feet on winter mornings. At all times of the year, shadows would substantially recede by noon and fully recede by the afternoon. Eastward shadows would occur in the afternoons and range from approximately 15 feet in the summer, to 40 feet in the spring and fall, and 110 feet in the winter. Shadows of approximately 25 feet would also fall on winter mornings. The reach of the shadows toward adjacent properties would be further reduced by the minimum 25-foot setbacks for the structures on plazas 1, 2 and 3 and the street right-of-way on plaza 2. Although properties directly north of the new developments would receive shadow on spring, fall and winter mornings, the short duration of the shadow would not be expected to impact the commercial function of the properties. Eastward shadows have an even more limited impact since they are shorter and would fall on surface parking areas and a very limited number of commercial properties. The impact of shadows on public open spaces from the development of garages on the parking plazas is discussed above, in the section on *Public Open Spaces.*

Station Area

With the exception of Menlo Center, the Specific Plan envisions the majority of the Station Area as an opportunity site for new development. The development of buildings up to 48 feet in height with upper level 45-degree building profiles at the 38-foot façade heights along the west side of El Camino Real and along Alma Street would cast shadows similar to the shadows in the downtown area. Northward morning shadows would range from approximately 30 feet in the summer, to 60 feet in the spring and fall, and 140 feet in the winter, fully receding by the afternoon. Eastward afternoon shadows would range from approximately 20 feet in the summer, to 47 feet in the spring and fall and 125 feet in the winter. As in the downtown area, the shadows would be of short duration and would not be expected to impact the commercial functions of the properties within the Station Area. Menlo Center would not be impacted by the extended shadows with the exception of minimal shading on the plaza near the street on winter afternoons.

Properties to the east of the Alma Street opportunity sites are developed with two-story tall residential buildings. The majority of Alma Street is currently developed with one-story buildings which cast eastward afternoon shadows of approximately seven feet in the summer, 17 feet in the spring and fall, and 40 feet in the winter. One existing two-story tall building would cast shadows that are approximately double the length of the one-story shadows. These shadows would increase with redevelopment of the properties along Alma Street. Taller buildings would cast eastward shadows in the afternoon of approximately 20 feet in the summer, 45 feet in the spring and fall and 145 feet in the winter. These are shorter than other eastward shadows due to the more exaggerated angle of Alma Street. The adjacent residential properties are further buffered from the shadows by

the required 10-foot setback on the Specific Plan properties, 15- to 20-foot setbacks on the adjacent residential properties and the 20-foot Alma Lane right-of-way which runs between the two. This 45 to 50-foot buffer zone results in the adjacent properties only experiencing shadow of relatively short duration on winter afternoons. The adjacent properties would not receive additional shadow at other times of the year; therefore, the impact would be less than significant.

El Camino Real North and South of Downtown

For the most northerly segment of El Camino Real, north of Encinal Avenue, development requirements include a 38-foot height limit with 45-degree building profiles above a 30-foot maximum façade height in recognition of the segment's location adjacent to single-family residential development. Remaining segments of north El Camino Real do not include the 45-degree building profile requirement since the character of the adjacent land uses changes to primarily two-story tall multiple family development. Additionally, along the east side of El Camino Real between Encinal and Oak Grove Avenues, heights up to 48 feet with the inclusion of the 45-degree building profile may be considered subject to the provision of public benefit. Eastward shadows for 38-foot tall buildings without an upper level building profile would extend approximately 20 feet on summer afternoons, 47 feet on spring and fall afternoons, and 125 feet on winter afternoons. Where the 30-foot façade height and building profile would apply to the rear of properties, the shadows would be approximately 15 feet on summer afternoons, 35 feet on spring and fall afternoons and 97 feet on winter afternoons. Where 48-foot tall buildings are developed, shadows would be similar to 38-foot tall buildings with no façade height or building profile requirement on summer, spring and fall afternoons but up to 145 feet on winter afternoons. The potential impact of the shadows is lessened by the inclusion of setbacks for redeveloped properties. In the most northerly segment, rear setbacks of 20 feet and interior side setbacks of between 10 and 25 feet are required. In other segments, setbacks range from seven to 25 feet depending on the location and design of individual projects. Additionally, the segments on the east side of El Camino Real between Oak Grove and Encinal Avenues are further separated from adjacent development by street right-of-way. The required setbacks and street right-of ways coupled with setbacks on adjacent residential properties would result in no added shadow on adjacent properties on summer afternoons. Adjacent properties would receive some added shadow on spring, fall and winter afternoons, but the shadows would be of short duration. Westward shadows from 38-foot buildings without upper level building profiles would be less than 15 feet on summer mornings and therefore would not cast shadow onto adjacent properties given the required 20-foot rear setbacks included in the Plan.

South of downtown, properties along the east side of El Camino Real are allowed heights of 60 feet with upper level 45-degree building profiles above a façade height of 38 feet for all sides facing a public right-of-way or public open space and the rear sides. The railroad right-of-way and Alma Street are located directly to the east of the Plan area, with the Civic Center/Burgess Park and multiple-family residential developments beyond. Eastward shadows would extend approximately 20 feet on summer afternoons, 47 feet on spring and fall afternoons and 125 feet on winter afternoons. There would also be winter morning shadow of approximately 27 feet. The railroad and street right-of-ways as well as the required setbacks would limit the amount of shadow received. The Alma Street right-of-way increases as one moves south from Ravenswood Avenue, with a

width of 36 feet near Ravenswood Avenue increasing to approximately 100 feet along the residential portion of Alma Street. The railroad right-of-way also increases with approximately 80 feet of width near Ravenswood Avenue to 100 feet as it approaches the residential portion of the street. As such, approximately 10 feet of shadow would fall on the Civic Center near Ravenswood on winter afternoons. However, the portion of the Civic Center that would receive the shadow is primarily used for circulation and parking. As one moves south toward the playing fields, there would be no shadow. The Civic Center would retain the opportunity for sun at all times of the year. Given the approximately 200 feet of right-of-way, no shadow would reach the residential properties. The properties along the west side of El Camino Real would be allowed maximum heights of 38 feet with upper level building profiles. As noted earlier, westward shadows are limited to less than 12 feet on summer mornings and therefore would not cast shadow onto adjacent properties given the 20-foot rear setback required by the Specific Plan.

Conclusion

The Specific Plan area generally experiences the longest shadows cast northward in the mornings and eastward in the afternoons. Shorter shadows are cast southward in the afternoon and westward on spring, fall and summer mornings. The shadows from the existing primarily one- and two-story height buildings in the Plan area currently partially or fully shade many of the existing public open spaces, sidewalks and historic buildings. Shadows cast by new development envisioned in the Specific Plan would follow the same patterns as existing shadows and most often would overlap the existing shadows.

The Specific Plan includes height limitations and design controls that help to limit the creation of new shadow. Within the downtown area and for portions of El Camino Real, heights are limited to a maximum of 38 feet with upper level 45-degree building profiles required above façade heights of 30 feet. This restriction results in shadows generally equivalent to existing two-story-height buildings. In areas where taller heights are allowed, such as the Station Area and along the southeast segment of El Camino Real, adjacent parking areas, streets and the railroad right-of-way help to provide distance that buffers adjacent land uses from shadow impacts. The shadows that have the greatest potential for reaching other properties generally are for short duration during winter afternoons. This is a time of day when longer shadows are often experienced and are not unexpected.

Given the general orientation of the Specific Plan area and design controls included in the Specific Plan, new shadow as a result of the Plan would not substantially alter the pattern of shading that exists under current conditions, nor would it extend shadows to the extent that the shadow would limit use of public open spaces, adversely impact a substantial number of properties, or diminish the defining characteristics of historic buildings. Additionally, the Specific Plan includes design guidelines that emphasize the need for completing the city's canopy of shaded sidewalks and public open spaces to enhance usability and enjoyment of the spaces. Therefore, shadow impacts of the proposed Specific Plan would be less than significant.

Mitigation: None required.

Impact AES-5: Construction of new buildings and street lighting within the Specific Plan area could increase light and glare, but these changes would not be substantially adverse. (Less than Significant)

Construction of new buildings within the Plan area could result in projects both larger and taller than existing buildings. These new buildings would include exterior and interior lighting. In addition, the Specific Plan includes several guidelines that promote additional lighting for pedestrian safety, decorative purposes, and integration of nighttime character. These include Guidelines D.2.03, D.2.07, D.2.40, D.2.48, D.2.54, D.3.07, D.3.17, D.3.26, D.4.11, D.5.01, D.5.16, and D.5.19.

Nighttime Lighting and Glare. Although lighting would generally be similar to existing lighting in downtown Menlo Park, this lighting could increase levels of nighttime light and glare that could adversely affect nighttime views in the Plan area. The Specific Plan recommends the following guidelines, which would help minimize the potential effect of nighttime light and glare:

- Energy-efficient and color-balanced outdoor lighting, at the lowest lighting levels possible, are encouraged to provide for safe pedestrian and auto circulation. (E.3.8.19)

- Improvements should use ENERGY STAR qualified fixtures to reduce a building's energy consumption. (E.3.8.20)

- Installation of high-efficiency lighting systems with advanced lighting control, including motion sensors tied to dimmable lighting controls, are recommended. (E.3.8.21)

The Specific Plan includes the following regulatory standards that new development would be *required* to adhere to, and that would ensure any nighttime light and glare impacts would be a less-than-significant level.

- Lighting in parking garages shall be screened and controlled so as not to disturb surrounding properties, but shall ensure adequate public security. (Standard E.3.8.18)

- Exterior lighting fixtures shall use fixtures with low cut-off angles, appropriately positioned, to minimize glare into dwelling units and light pollution into the night sky. (Standard E.3.8.17)

Daytime Glare. Daytime glare is caused by light reflections from building material such as reflective glass and polished surfaces, and pavement. During daytime hours, the amount of glare depends on the intensity and direction of sunlight. Glare can create hazards to motorists and nuisances for pedestrians and other viewers. The Specific Plan places an emphasis on building features that would lessen the use of exterior surfaces that would create daytime glare beyond what is present from existing buildings, as listed below.

- Buildings should allow for flexibility to regulate the amount of direct sunlight into the interiors. Louvered wall openings or shading devices like bris soleils help control solar gain and check overheating. Bris soleils, which are permanent sun-shading elements, extend from the sun-facing facade of a building, in the form of horizontal or vertical projections depending on sun orientation, to cut out the sun's direct rays, help protect windows from excessive solar light and heat and reduce glare within (Guideline E.3.8.07).

- Where appropriate, buildings should incorporate arcades, trellis and appropriate tree planting to screen and mitigate south and west sun exposure during summer. This guideline would not apply to downtown, the station area and the west side of El Camino Real where buildings have a narrower setback and street trees provide shade (Guideline E.3.8.08).

The Specific Plan also calls for the shading of sidewalks and other public open spaces through the retention of existing trees, which would also contribute to reducing glare effects (Standard D.2.01and Guidelines D.2.30, D.2.45D.3.22, and D.5.17) and use of new tree and landscaping planting (Guidelines D.2.04, D.2.21, D.2.26, D.2.40, D.2.49, D.2.54, D.3.06, D.3.09, D.3.16, D.3.25, D.4.05, D.4.11, D.4.14, D.5.03, D.5.04, D.5.18, and D.6.06). These guidelines not only help protect the interior of buildings from direct sun impacts, but also serve to reduce the potential for daytime glare from buildings.

The Specific Plan includes the following regulatory standard that new development would be *required* to adhere to, and that would ensure any daytime glare impacts would be less than significant.

- Ground floor commercial buildings shall have a minimum of 50% transparency (i.e., clear-glass windows) for retail uses, office uses and lobbies to enhance the visual experience from the sidewalk and street. Heavily tinted or mirrored glass shall not be permitted (Standard E.3.5.02)

- Retail frontage, whether ground floor or upper floor shall have a minimum 50 percent of the façade area transparent with clear vision glass, not heavily tinted or highly mirrored glass. (E.3.5.16)

Chapter 4.3 Biological Resources of this EIR addresses potential impacts to migratory and breeding special-status birds through building collisions with regard to reflective windows.

Mitigation: None required.

Cumulative Impacts

Impact AES-6: Implementation of the Menlo Park El Camino Real/Downtown Specific Plan, in combination with other past, present, and reasonably foreseeable future plans and projects, would not result in cumulatively considerable impacts to aesthetic resources. (Less than Significant)

Geographic Scope

The cumulative aesthetic analysis encompasses all known past, present, and reasonably foreseeable projects within the vicinity of the Plan area in which changes to the built form and visual character could contribute to cumulative aesthetic impacts. The geographic scope would include all properties within viewable distance of the Plan area, as well as areas within the existing view corridors to the east toward the Santa Cruz Mountains. Past projects are classified as projects already existing in the built environment. Present projects are classified as projects

that are approved, under construction, or being tenanted. Future projects are classified as projects and plans in development or pending approval, described in Table 4-1, above.

Analysis

No new projects would be located directly within the Santa Cruz Avenue, Menlo Avenue, or Oak Grove Avenue view corridors toward the Santa Cruz Mountains to the extent that they would contribute to a change in views. In addition, cumulative projects are not located on designated state scenic highways and do not contain scenic resources. As stated under Impact AES-1, above, due to the flat topography, urbanized nature, and gentle curve of El Camino Real, mid- and long-range views are not available along the corridor. Short-range views could slightly change with construction of the cumulative projects within the Plan Area, including 1906 El Camino Real, 1706 El Camino Real, 1460 El Camino Real, 1300 El Camino Real, 580 Oak Grove Avenue, and 389 El Camino Real. These cumulative projects, in combination with other projects built pursuant to the Specific Plan, would further define the El Camino Real view corridor, as well as the Oak Grove Avenue view corridor. Views along the corridors would be of a more densely built urban environment, but no scenic views or vistas would be obscured. The cumulative impact to views would be less than significant.

Regarding visual character, the development of these cumulative projects would be substantially consistent with the building characteristics as outlined by the Specific Plan. Additionally, all of the projects would replace vacant or underutilized properties, one of the key objectives of the Specific Plan. The approved projects at 1906 and 1706 El Camino Real are two-story office buildings of approximately 30 feet in height inclusive of roof screening. The building at 1906 El Camino Real includes a recessed second floor and sun shading features, although both buildings have varying forms of articulation. Both buildings also include sidewalks and landscaping strips along street frontages. Both buildings are designed to be consistent with the City's existing General Plan and Zoning Ordinance. The buildings are located within the area of the Specific Plan that would allow for 38-foot heights with upper level 45-degree building profiles above a 30-foot façade height, therefore are consistent with the heights allowed by the Specific Plan. Although both projects provide sidewalks and landscaping strips, the sidewalks would be of less width than would be required by the Specific Plan. Setbacks adjacent to the abutting residential properties would be a minimum of 65 feet, far exceeding the 20-foot requirement of the Specific Plan.

The approved project at 1460 El Camino Real is a mixed use development that includes commercial and residential components. The project is consistent with the City's General Plan and Zoning Ordinance, making use of a Planned Development Permit to modify the development standards as allowed by the Zoning Ordinance. The project is designed as a two-story development with a height of 38 feet for the commercial portion and 33 feet for the residential portion. The commercial portion of the project insets the second floor into the roofline and both the commercial and residential portions of the project provide architectural articulation. The buildings also include sidewalks and landscaping along street frontages. The project is located in an area of the Specific Plan that would allow for 38-foot heights with no upper level building profiles (or up to 48 feet with massing controls and the provision of public benefit) or other massing controls, therefore the heights of the

buildings would be consistent with the Specific Plan. Although the project provides sidewalks and landscaping adjacent to the building along El Camino Real, the sidewalks would be of less width than would be required by the Specific Plan.

The approved project at 1300 El Camino Real is a commercial mixed use project that is consistent with the City's General Plan and Zoning Ordinance, making use of a Planned Development Permit to modify the development standards as allowed by the Zoning Ordinance. The project has a height of 40 feet and includes an upper level setback as well as architectural articulation. The project includes sidewalks and landscaping along street frontages. Similar to the 1460 El Camino Real project, it is located in an area of the Specific Plan that would allow for 38-foot heights with no upper level building profiles (or up to 48 feet with massing controls and provision of public benefit) or other massing controls. The project as approved would be slightly taller than the base height allowed by the Specific Plan, but not significantly taller. Although the project provides sidewalks and landscaping adjacent to the building along El Camino Real, the sidewalks would be of less width than would be required by the Specific Plan.

The pending project at 580 Oak Grove Avenue is a 40-foot-tall, three-story mixed use development with residential and commercial components. The project would be consistent with the General Plan as it was previously amended for the project, but would require recession of the previous General Plan amendment and adoption of new General Plan and Zoning Ordinance amendments and a Planned Development Permit for final approval. As currently proposed, the project includes upper level setbacks along Oak Grove Avenue as well as sidewalks and trees. This project is also located in the area of the Specific Plan that would allow for 38-foot heights with no upper level building profiles (or up to 48 feet with massing controls and provision of public benefit) or other massing controls. As proposed, the project would be slightly taller than the base height allowed by the Specific Plan, but not significantly taller. Although the project provides sidewalks and landscaping adjacent to the building along Oak Grove Avenue, the sidewalks would be of less width than would be required by the Specific Plan.

The final project is a residential project located at 389 El Camino Real. The project is currently under review and its final design is not approved. The project is located in an area of the Specific Plan that would allow for 38-foot heights with upper level massing controls above a façade height of 30 feet. It is the intent of the project to conform to the City's General Plan and Zoning Ordinance, while making use of the State Density Bonus law which serves to allow for waivers from development standards to accommodate the higher number of affordable units allowed under the law. The initial design of the project would be compatible with the overall heights allowed by the Specific Plan but would not be consistent with requirements for massing, setbacks and sidewalk widths. As noted, the project is currently being reviewed and therefore, may be consistent with the Specific Plan as the project progresses through the approval process with the City.

The approved and pending developments are generally compatible with the intent and standards of the key design elements of the Specific Plan, if not fully consistent with all of its regulations and design guidelines. Although the projects would result in a more visually dense urban

environment, the projects would support the Specific Plan's objectives related to the creation of more vibrancy through the infill of vacant and underutilized properties, more intensity of use near the downtown and transit center, and the creation of a stronger street edge to balance the width of El Camino Real while providing protections for abutting residential uses. Therefore, in combination with the Specific Plan, these projects would not result in cumulatively considerable impacts to view corridors, scenic resources, shadowing, visual character, or glare and lighting.

Mitigation: None required.

4.2 Air Quality

Air quality is a function of both the rate and location of pollutant emissions under the influence of meteorological conditions and topographic features that influence pollutant movement and dispersal. Atmospheric conditions such as wind speed, wind direction, atmospheric stability, and air temperature gradients interact with the physical features of the landscape to determine the movement and dispersal of air pollutants, which affects air quality.

4.2.1 Environmental Setting

Regional Topography, Meteorology, and Climate

The potential for high pollutant concentrations to develop at a given location depends upon the quantity of pollutants emitted into the atmosphere in the surrounding area or upwind, and the ability of the atmosphere to disperse the air pollutants. The atmospheric pollution potential, as the term is used in this EIR, is independent of the location of emission sources and is instead a function of factors such as topography and meteorology.

The El Camino Real/Downtown Specific Plan is located in the City of Menlo Park in San Mateo County, California, which falls within the boundaries of the San Francisco Bay Area Air Basin (Basin). The Basin encompasses the nine-county regions including all of Alameda, Contra Costa, Santa Clara, San Francisco, San Mateo, Marin and Napa counties, and the southern portions of Solano and Sonoma counties. Within the Basin, 11 subregions have been defined based on their unique climatology and topography.

The Plan area is located in the southeastern portion of the Peninsula subregion. This subregion stretches from San Jose to the Golden Gate and is bounded by the Pacific Ocean to the west and by the San Francisco Bay to the east. The prevailing winds for most of this area are from the west. The air pollution potential is highest along the southeastern portion of the Peninsula near the Plan area. This is largely because this area is protected from high winds and fog of the marine layer. Major sources of air pollution in this subregion include a number of industrial sources and traffic congestion on major roadways and freeways.[1]

Temperatures have a narrow range due to the proximity of the moderating marine area; maximum summer temperatures average in the high-70's, with lows in the mid-50's. Winter highs are in the mid-50's to the low-60's, with lows in the high-30's to the low-40's.[2]

[1] Bay Area Air Quality Management District (BAAQMD), Ambient Air Quality Standards and Bay Area Attainment, http://hank.baaqmd.gov/pln/air_quality/ambient_air_quality.htm, accessed August 10, 2010.

[2] Based on historical weather data from the Western Regional Climate Center (WRCC) for the adjacent community of Palo Alto because WRCC does not have data for Menlo Park. Western Regional Climate Center (WRCC), Monthly Climate Summary for Palo Alto, http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca6646, accessed August 10, 2010.

Existing Air Quality

The Bay Area Air Quality Management District (BAAQMD) is the regional agency with jurisdiction over the nine-county region located in the Basin. BAAQMD operates a regional monitoring network that measures the ambient concentrations of criteria pollutants. Existing levels of air quality in the Plan area can generally be inferred from ambient air quality measurements conducted by BAAQMD at its closest station, which is the Redwood City Station.

Background ambient concentrations of pollutants are determined by pollutant emissions in a given area as well as wind patterns and meteorological conditions for that area. As a result, background concentrations can vary among different locations within an area. However, areas located close together and exposed to similar wind conditions can be expected to have similar background pollutant concentrations. **Table 4.2-1** shows a five-year (2005 – 2009) summary of monitoring data collected at the Redwood City monitoring station. The criteria air pollutants are described in more detail in Section, 4.2.2, *Regulatory Setting*, below. The data are compared with the California Ambient Air Quality Standards and the National Ambient Air Quality Standards that are currently applicable.

As shown in the table below, the state one- and eight-hour and the national eight-hour ozone standards have not been exceeded at the Redwood City monitoring station since 2005. However, the State 24-hour PM_{10} standard and national $PM_{2.5}$ 24-hour standard were both exceeded a number of times between 2005 and 2009.

Sensitive Receptors

For the purposes of air quality and public health and safety, sensitive receptors are generally defined as land uses with population concentrations that would be particularly susceptible to disturbance from dust and air pollutant concentrations, or other disruptions associated with project construction and/or operation. The reasons for greater than average sensitivity include pre-existing health problems, proximity to emissions sources, or duration of exposure to air pollutants. Schools, hospitals, and convalescent homes are considered relatively sensitive to poor air quality because children, elderly people, and the infirm are more susceptible to respiratory distress and other air quality-related health problems than the general public. Residential areas are considered sensitive to poor air quality because people usually stay home for extended periods of time, with associated greater exposure to ambient air quality. Recreational uses are sometimes considered sensitive due to the greater exposure to ambient air quality conditions because vigorous exercise associated with recreation places a high demand on the human respiratory system. On the other hand, the amount of time that individuals spend in parks and other recreation areas tends to be much less than the time spent at home, and so exposure duration and frequency to pollutants is correspondingly less substantial. Sensitive receptors in the plan area include residential uses. Nearby sensitive receptors include the residential neighborhoods north, south, and west of downtown, and east of the Caltrain station and Alma Street. Four city parks, Fremont Park, Nealon Park, Burgess Park (Civic Center) and Holbrook Palmer Park are within two blocks of the Plan area.

TABLE 4.2-1
AIR QUALITY DATA SUMMARY (2005–2009) FOR THE PLAN AREA

Pollutant	Standard	Monitoring Data by Year				
		2005	2006	2007	2008	2009
Ozone						
Highest One-Hour Average (ppm)	0.09	0.084	0.085	0.077	0.082	0.087
Days over State Standard		0	0	0	0	0
Highest Eight-Hour Average (ppm)		0.061	0.063	0.069	0.069	0.063
Days over State Standard	0.070	0	0	0	0	0
Days over National Standard	0.075	0	0	0	0	0
Respirable Particulate Matter (PM_{10})						
Highest 24-Hour Average ($\mu g/m^3$)[a]	50	80.8	69.9	55.8	41.0	NA
Estimated Days over State Standard[b]		**10.2**	**10.2**	**6.0**	NA	NA
Estimated Days over National Standard[b]	150	0	0	0	NA	NA
Annual Average		20.9	19.8	19.6	NA	NA
Exceed State Standard?	20	**Yes**	No	No	NA	NA
Fine Particulate Matter ($PM_{2.5}$)						
Highest 24-Hour Average ($\mu g/m^3$)[c]	35	30.9	75.3	45.4	27.9	31.7
Estimated Days over National Standard[b]		0	**2.6**	**2.9**	0	0
Annual Average	12	8.8	9.6	8.3	9.1	8.7
Exceed State Standard?		No	No	No	No	No

NOTES: ppm = parts per million; $\mu g/m^3$ = micrograms per cubic meter; NA = insufficient data to determine the value
Bold face indicates exceedance.

[a] Statistics shown represent State statistics and are based on California approved samplers. These may differ from national statistics which are based on different samplers.
[b] Measurements are usually collected every six days. Estimated days over the standard represent the estimated number of days the standard would have been exceeded if measurements were collected every day.
[c] Statistics shown represent national statistics and are based on samplers using federal reference or equivalent methods. National statistics are presented for $PM_{2.5}$ rather than State statistics as there is no 24-hour State $PM_{2.5}$ standard.

SOURCE: CARB, 2009.

4.2.2 Regulatory Setting

Air quality within the Basin is addressed through the efforts of various federal, State, and local government agencies. These agencies work jointly, as well as individually, to improve air quality through legislation, regulations, planning, policy-making, education, and a variety of programs. The air pollutants of concern and agencies primarily responsible for improving the air quality within the Basin and the pertinent regulations are discussed below.

Criteria Air Pollutants

Regulation of air pollution is achieved through both national and State ambient air quality standards and emission limits for individual sources of air pollutants. As required by the federal Clean Air Act (CAA), the U.S. Environmental Protection Agency (EPA) has identified criteria pollutants and has established national ambient air quality standards to protect public health and

welfare. National standards have been established for ozone, carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter (PM_{10} and $PM_{2.5}$), and lead. These pollutants are called "criteria" air pollutants because standards have been established for each of them to meet specific public health and welfare criteria.[3]

To protect human health and the environment, the EPA has set "primary" and "secondary" maximum ambient thresholds for each of the criteria pollutants. Primary thresholds were set to protect human health, particularly sensitive receptors such as children, the elderly, and individuals suffering from chronic lung conditions such as asthma and emphysema. Secondary standards were set to protect the natural environment and prevent further deterioration of animals, crops, vegetation, and buildings.

The national standards are defined as the maximum acceptable concentration that may be reached, but not exceeded more than once per year. California has adopted more stringent ambient air quality standards for most of the criteria air pollutants. **Table 4.2-2** presents both sets of ambient air quality standards (i.e., national and State) and the Basin's attainment status for each standard.

California has also established State ambient air quality standards for sulfates, hydrogen sulfide, and vinyl chloride. Sulfates, the fully oxidized ionic form of sulfur, are formed when sulfur dioxide (SO_2) is oxidized in the atmosphere. Hydrogen sulfide is formed during bacterial decomposition of sulfur-containing substances and can be present in sewer gas and some natural gas. Hydrogen sulfide can also be emitted as a result of geothermal energy exploitation. Most vinyl chloride is associated with production of polyvinyl chloride (PVC) plastic and vinyl products; it has also been detected near landfills, sewage plants and hazardous waste sites due to microbial breakdown of chlorinated solvents. The Specific Plan would not include any activities that would result in direct emissions of sulfates, hydrogen sulfide and/or vinyl chloride, nor does the area contain existing emitters of these compounds, and thus, there is no further mention of these pollutants in this EIR.

As shown in Table 4.2-2, the nine-county Bay Area Basin is currently classified as non-attainment for the one-hour State ozone standard as well as non-attainment for the federal and State eight-hour standards.[4] Additionally, the Basin is classified as non-attainment for State 24-hour and annual arithmetic mean PM_{10} standards as well as the State annual arithmetic mean and the national 24-hour $PM_{2.5}$ standards. The Basin is unclassified or classified as attainment for all other pollutants standards (BAAQMD, 2010).[5]

[3] U.S. Environmental Protection Agency (EPA), 2008. Regulatory Impact Analysis: Control of Emissions of Air Pollution from Locomotive and Marin Compression Ignition Engines Less than 30 Liters Per Cylinder – Table 3-82 – Control Case PM2.5 Emissions for Locomotives, March 2008.

[4] As explained below in the discussion of applicable regulations, areas designated non-attainment for a pollutant generally must prepare an air quality plan to demonstrate a means of achieving attainment status.

[5] "Unclassified" status means that data for a pollutant are incomplete and do not support a designation of attainment or non-attainment status. Bay Area Air Quality Management District (BAAQMD), Ambient Air Quality Standards and Bay Area Attainment, http://hank.baaqmd.gov/pln/air_quality/ambient_air_quality.htm, accessed August 10, 2010.

TABLE 4.2-2
AMBIENT AIR QUALITY STANDARDS AND BAY AREA ATTAINMENT STATUS

Pollutant	Averaging Time	State Standard		National Standard	
		Concentration	Attainment Status	Concentration	Attainment Status
Ozone	One Hour	0.09 ppm	Non-attainment	–	–
	Eight Hour	0.07 ppm	Non-attainment	0.075 ppm	Non-Attainment
Carbon Monoxide	One Hour	20 ppm	Attainment	35 ppm	Attainment
	Eight Hour	9.0 ppm	Attainment	9 ppm	Attainment
Nitrogen Dioxide	One Hour	0.18 ppm	Attainment	0.1 ppm	Unclassified
	Annual	0.030 ppm	Not applicable	0.053 ppm	Attainment
Sulfur Dioxide	One Hour	0.25 ppm	Attainment	–	–
	24 Hour	0.04 ppm	Attainment	0.14 ppm	Attainment
	Annual	–	–	0.03 ppm	Attainment
Respirable Particulate Matter (PM_{10})	24 Hour	50 µg/m^3	Non-Attainment	150 µg/m^3	Unclassified
	Annual	20 µg/m^3	Non-Attainment	–	–
Fine Particulate Matter ($PM_{2.5}$)	24 Hour	–	–	35 µg/m^3	Non-Attainment
	Annual	12 µg/m^3	Non-Attainment	15 µg/m^3	Attainment
Lead	Monthly	1.5 µg/m^3	Attainment	–	–
	Quarterly	–	–	1.5 µg/m^3	Attainment

NOTES: ppm = parts per million, µg/m^3 = micrograms per cubic meter; dash (–) indicates no standard for that jurisdiction.

SOURCE: BAAQMD, 2010.

Ozone

Ozone is a respiratory irritant and an oxidant that increases susceptibility to respiratory infections and that can cause substantial damage to vegetation and other materials. Ozone is not emitted directly into the atmosphere, but is a secondary air pollutant produced in the atmosphere through a complex series of photochemical reactions involving reactive organic gases (ROG) and nitrogen oxides (NOx). ROG and NOx are known as precursor compounds for ozone. Significant ozone production generally requires ozone precursors to be present in a stable atmosphere with strong sunlight for approximately three hours. Ozone concentrations tend to be higher in the late spring, summer, and fall, when the long sunny days combine with regional subsidence inversions to create conditions conducive to the formation and accumulation of secondary photochemical compounds, like ozone.

Carbon Monoxide (CO)

CO is a non-reactive pollutant that is a product of incomplete combustion and is mostly associated with motor vehicle traffic. High CO concentrations 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. When inhaled at high concentrations, CO combines with hemoglobin in the blood and reduces the oxygen-carrying capacity of the blood. This results in reduced oxygen reaching

the brain, heart, and other body tissues. This condition is especially critical for people with cardiovascular diseases, chronic lung disease, or anemia.

Nitrogen Dioxide (NO_2)

NO_2 is an air quality pollutant of concern because it acts as a respiratory irritant. NO_2 is a major component of the group of gaseous nitrogen compounds commonly referred to as oxides of nitrogen (NOx). NOx is a precursor to ozone formation and is produced by fuel combustion in motor vehicles, industrial stationary sources (such as industrial activities), ships, aircraft, and rail transit. Typically, NOx emitted from fuel combustion is in the form of nitric oxide (NO) and nitrogen dioxide (NO_2). NO is often converted to NO_2 when it reacts with ozone or undergoes photochemical reactions in the atmosphere.

Particulate Matter

PM_{10} and $PM_{2.5}$ represent fractions of particulate matter that can be inhaled into air passages and the lungs and can cause adverse health effects. Particulate matter in the atmosphere results from many kinds of dust- and fume-producing industrial and agricultural operations, fuel combustion, and atmospheric photochemical reactions. Some sources of particulate matter, such as demolition and construction activities, are more local in nature, while others, such as vehicular traffic, have a more regional effect. Very small particles of certain substances (e.g., sulfates and nitrates) can cause lung damage directly, or can contain adsorbed gases (e.g., chlorides or ammonium) that may be injurious to health. According to a recent study by California Air Resources Board (CARB), exposure to $PM_{2.5}$ from 2004 through 2006 can be associated with an average of approximately 18,000 premature annual deaths statewide. Particulates can also damage materials and reduce visibility.[6]

Other Criteria Pollutants

Sulfur dioxide (SO_2) is a combustion product of sulfur or sulfur-containing fuels such as coal. SO_2 is also a precursor to the formation of atmospheric sulfate and particulate matter (both PM_{10} and $PM_{2.5}$) and contributes to potential atmospheric sulfuric acid formation that could precipitate downwind as acid rain. Lead has a range of adverse neurotoxin health effects, and was formerly released into the atmosphere primarily via leaded gasoline. The phase-out of leaded gasoline in California resulted in decreasing levels of atmospheric lead, substantially reducing its health effects.

Toxic Air Contaminants

Toxic air contaminants are air pollutants that may lead to serious illness or increased mortality, even when present in relatively low concentrations. Potential human health effects of toxic air contaminants include birth defects, neurological damage, cancer, and death. There are hundreds of different types of toxic air contaminants with varying degrees of toxicity. Individual toxic air contaminants vary greatly in the health risk they present; at a given level of exposure, one toxic air contaminant may pose a hazard that is many times greater than another.

6 California Air Resources Board (CARB), Methodology for Estimating Premature Deaths Associated with Long-Term Exposure to Fine Airborne Particulate Matter in California, page 39, October 24, 2008.

Toxic air contaminants do not have ambient air quality standards, but are regulated by the BAAQMD using a risk-based approach. This approach uses a health risk assessment to determine what sources and pollutants to control as well as the degree of control. A health risk assessment is an analysis in which human health exposure to toxic substances is estimated, and considered together with information regarding the toxic potency of the substances, to provide quantitative estimates of health risks.[7]

In addition to monitoring criteria pollutants, both the BAAQMD and the Air Resources Board (ARB) operate toxic air contaminant monitoring networks in the San Francisco Bay Area. These stations measure 10 to 15 toxic air contaminants, depending on the specific station. The toxic air contaminants selected for monitoring are those that have traditionally been found in the highest concentrations in ambient air, and therefore tend to produce the most significant risk. The BAAQMD operates an ambient toxic air contaminant monitoring station in Redwood City.

Diesel Particulate Matter

The State Air Resources Board identified diesel particulate matter (DPM) as a toxic air contaminant in 1998, primarily based on evidence demonstrating cancer effects in humans.[8] The exhaust from diesel engines includes hundreds of different gaseous and particulate components, many of which are toxic. Mobile sources such as trucks and buses are among the primary sources of diesel emissions, and concentrations of DPM are higher near heavily traveled highways. The estimated cancer risk from exposure to diesel exhaust is much higher than the risk associated with any other toxic air pollutant routinely measured in the region. ARB estimated the average Bay Area cancer risk from diesel particulate, based on a population-weighted average ambient diesel particulate concentration, at about 480 in one million, as of 2000. The risk from diesel particulate matter declined from 750 in one million in 1990 to 570 in one million in 1995; by 2000, ARB estimated the average statewide cancer risk from DPM at 540 in one million.[9,10]

Recent air pollution studies have shown an association between respiratory and other non-cancer health effects and proximity to high traffic roadways. The ARB community health risk assessments and regulatory programs have produced air quality information about certain types of facilities for consideration by local authorities when siting new residences, schools, day care centers, parks and playgrounds, and medical facilities (i.e., sensitive land uses). Sensitive land

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7 In general, a health risk assessment is required if the BAAQMD concludes that projected emissions of a specific air toxic compound from a proposed new or modified source suggest a potential public health risk, then the applicant is subject to a health risk assessment for the source in question. Such an assessment generally evaluates chronic, long-term effects, calculating the increased risk of cancer as a result of exposure to one or more TACs.

8 California Air Resources Board, Fact Sheet, "The Toxic Air Contaminant Identification Process: Toxic Air Contaminant Emissions from Diesel-fueled Engines." October 1998. Available on the internet at: http://www.arb.ca.gov/toxics/dieseltac/factsht1.pdf. This document is also available for review at the Planning Department, 1650 Mission Street, Suite 400, in Case File No. 2006.1524E.

9 California Air Resources Board, *California Almanac of Emissions and Air Quality - 2009 Edition*, Table 5-44 and p. 5-44. Available on the internet at: http://www.arb.ca.gov/aqd/almanac/almanac09/pdf/chap509.pdf. Viewed October 24, 2009.

10 This calculated cancer risk values from ambient air exposure in the Bay Area can be compared against the lifetime probability of being diagnosed with cancer in the United States, from all causes, which is more than 40 percent (based on a sampling of 17 regions nationwide), or greater than 400,000 in one million, according to the National Cancer Institute.

uses deserve special attention because children, pregnant women, the elderly, and those with existing health problems are especially vulnerable to the non-cancer effects of air pollution. There is also substantial evidence that children are more sensitive to cancer-causing chemicals.[11]

In 2000, the ARB approved a comprehensive Diesel Risk Reduction Plan to reduce diesel emissions from both new and existing diesel-fueled vehicles and engines. As part of the Plan, the ARB in 2008 approved a new regulation for existing heavy-duty diesel vehicles that will require retrofitting and replacement of vehicles (or their engines) over time such that by 2023, all vehicles must have a 2010 model year engine or equivalent. The regulation is anticipated to result in an 80 percent decrease in statewide diesel health risk in 2020 from the 2000 risk.[12] Additional regulations apply to new trucks and to diesel fuel. With new controls and fuel requirements, 60 trucks built in 2007 would have the same soot exhaust emissions as one truck built in 1988.[13] Despite these reductions, the ARB recommends that proximity to sources of DPM emissions be considered in the siting of new sensitive land uses (e.g., residences, schools, daycare centers, playgrounds, or medical facilities). The ARB notes that these recommendations are advisory and should not be interpreted as defined "buffer zones," and that local agencies must balance other considerations, including housing and transportation needs, the benefits of urban infill, community economic development priorities, and other quality of life issues. With careful evaluation of exposure, health risks, and affirmative steps to reduce risk where necessary, ARB's position is that infill development, mixed use, higher density, transit-oriented development, and other concepts that benefit regional air quality can be compatible with protecting the health of individuals at the neighborhood level.[14]

Applicable Regulations

Federal

The EPA is responsible for implementing the programs established under the federal Clean Air Act, such as establishing and reviewing the national ambient air quality standards and judging the adequacy of State Implementation Plans, but has delegated the authority to implement many of the federal programs to the states while retaining an oversight role to ensure that the programs continue to be implemented.

State

The California Air Resources Board (CARB) is responsible for establishing and reviewing the State standards, compiling the California State Implementation Plan and securing approval of that plan from the EPA, conducting research and planning, and identifying toxic air contaminants

11 California Air Resources Board, *Air Quality and Land Use Handbook: A Community Health Perspective,* April 2005. Available on the internet at: http://www.arb.ca.gov/ch/handbook.pdf.

12 California Air Resources Board, "Overview of Truck and Bus Regulation Reducing Emissions from Existing Diesel Vehicles," fact sheet, February 25, 2009; and "Facts About Truck and Bus Regulation Emissions Reductions and Health Benefits," fact sheet, February 25, 2009. available on the internet at: http://www.arb.ca.gov/msprog/onrdiesel/documents.htm. Reviewed October 24, 2009.

13 Pollution Engineering, *New Diesel Fuel Rules Start*, website accessed on October 30, 2006: http://www.pollutioneng.com/CDA/.

14 California Air Resources Board, *Air Quality and Land Use Handbook*; see footnote 11.

(TACs). CARB also regulates mobile sources of emissions in California, such as construction equipment, trucks, and automobiles, and oversees the activities of California's air quality management districts, which are organized at the county or regional level. County or regional air quality management districts are primarily responsible for regulating stationary sources at industrial and commercial facilities within their geographic areas and for preparing the air quality plans that are required under the federal Clean Air Act and California Clean Air Act.

Local

Bay Area Air Quality Management District (BAAQMD)

BAAQMD is the regional agency with jurisdiction over the nine-county region located in the Basin. The Association of Bay Area Governments (ABAG) and the Metropolitan Transportation Commission (MTC), county transportation agencies, cities and counties, and various non-governmental organizations also join in the efforts to improve air quality through a variety of programs. These programs include the adoption of regulations and policies, as well as implementation of extensive education and public outreach programs.

BAAQMD is responsible for bringing and/or maintaining air quality in the Basin within federal and State air quality standards. Specifically, BAAQMD has the responsibility to monitor ambient air pollutant levels throughout the Basin and to develop and implement strategies to attain the applicable federal and State standards.

In 1999, BAAQMD adopted its *CEQA Guidelines – Assessing the Air Quality Impacts of Projects and Plans,* as a guidance document to provide lead government agencies, consultants, and project proponents with uniform procedures for assessing air quality impacts and preparing the air quality sections of environmental documents for projects subject to CEQA. These BAAQMD Guidelines were revised and updated in June 2010, as the *BAAQMD CEQA Air Quality Guidelines*.

The 2010 *BAAQMD CEQA Air Quality Guidelines* is an advisory document and local jurisdictions are not required to utilize the methodology outlined therein.[15] The document describes the criteria that BAAQMD uses when reviewing and commenting on the adequacy of environmental documents. It recommends thresholds for use in determining whether projects would have significant adverse environmental impacts, identifies methodologies for predicting project emissions and impacts, and identifies measures that can be used to avoid or reduce air quality impacts. In practice, most local agencies rely on the *BAAQMD CEQA Air Quality Guidelines* when assessing the significance of air quality impacts.

In January 2012, after the public review period for the Specific Plan Draft EIR, the Alameda Superior Court issued a ruling in a lawsuit filed by the California Building Industry Association (CBIA) challenging BAAQMD's CEQA thresholds of significance. The court ruled that the adoption of the thresholds was a project under CEQA, and itself required environmental review. This EIR retains use of the BAAQMD thresholds as a conservative estimation of the Plan's

[15] Bay Area Air Quality Management District (BAAQMD), *California Environmental Quality Act (CEQA) Air Quality Guidelines,* June 2010; http://www.baaqmd.gov/~/media/Files/Planning%20and%20Research/CEQA/BAAQMD%20CEQA%20Guidelines_June%202010.ashx; accessed August 14, 2010.

Greenhouse Gas (GHG) impacts and as thresholds that are based on substantial evidence. Air quality plans developed to meet federal requirements are referred to as State implementation Plans. The federal Clean Air Act and the California Clean Air Act require plans to be developed for areas designated as non-attainment (with the exception of areas designated as non-attainment for the State particulate matter standards plans for which are not required by California Code of Regulations). In March 2010, BAAQMD published the draft *Bay Area 2010 Clean Air Plan*, which replaces the existing *Bay Area 2005 Ozone Strategy*; the 2010 Plan was adopted in September 2010. This plan includes ozone control measures and also considers the impacts of these control measures on particulate matter (PM), air toxics, and Greenhouse Gas Emissions (GHGs) in a single, integrated plan.

The *2010 Clean Air Plan* explains how the Basin will achieve compliance with the State one-hour air quality standard for ozone as expeditiously as practicable and how the region will reduce transport of ozone and ozone precursors to neighboring air basins. The Strategy also discusses related air quality issues of interest including the BAAQMD's public involvement process, climate change, fine particulate matter, BAAQMD's Community Air Risk Evaluation program, local benefits of ozone control measures, the environmental review process, national ozone standards, and photochemical modeling.

4.2.3 Impacts and Mitigation Measures

Significance Criteria

Implementation of the Specific Plan would be considered to have significant air quality impacts if it would:

- Conflict with or obstruct implementation of the applicable air quality plan(s);
- 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 non-attainment under an applicable federal or State ambient air quality standard;
- Expose sensitive receptors to substantial pollutant concentrations; or
- Create objectionable odors affecting a substantial number of people.

Approach to Analysis

As discussed previously, BAAQMD in June 2010 adopted its revised *CEQA Air Quality Guidelines* (BAAQMD Guidelines). The BAAQMD Guidelines recommend that the assessment of operational air quality impacts associated with local plans, including specific plans, evaluate whether the plan in question is consistent with the most recently adopted air quality plan for the Bay Area. The Guidelines include the following two metrics for determining significance of criteria pollutant emissions impacts from local plans: (1) consistency with the so-called "control measures" contained

in the current regional air quality plan; and (2) the projected rate of increase in vehicle miles traveled or vehicle trips would be less than or equal to projected population increase.

With respect to potential toxic air contaminants (TACs), the BAAQMD recommends that overlay zones be established around existing and proposed land uses that emit TACs. These overlay zones should be included in proposed plan policies, land use maps, and implementing ordinances. Given that the Specific Plan would locate new residents within 500 feet of existing sources of toxic air contaminants, including diesel particulate matter from Caltrain diesel-powered engines and truck traffic on major arterials such as El Camino Real, and also within 500 feet of existing sources of $PM_{2.5}$ from high-volume roadways, the Plan would not provide the recommended overlay zones. Therefore, for the purpose of this analysis, impacts associated with toxic air contaminants were evaluated using the quantitative thresholds developed for assessing project-level impacts as described in the BAAQMD Guidelines for project-specific impacts. According to these thresholds, exposure to toxic air contaminants and $PM_{2.5}$ would be considered significant if:

1. Probability of contracting cancer for the Maximally Exposed Individual (MEI)[16] from an individual source exceeds 10 in one million;

2. Cumulative probability of contracting cancer for the MEI from all sources within 1,000 feet exceeds 100 in one million;

3. Acute or chronic non-cancer hazard indices for the MEI from all sources within 1,000 feet exceeds 1.0;

4. Annual average ambient $PM_{2.5}$ concentrations from an individual source exceeds 0.3 micrograms per cubic meter at the MEI;

5. Cumulative annual average ambient $PM_{2.5}$ concentrations from all sources within 1,000 feet exceed 0.8 micrograms per cubic meter at the MEI.

For odors, a plan must identify the location of existing and planned odor sources in the plan area. The plan must also include policies to reduce potential odor impacts in the plan area. Typical odor sources of concern include wastewater treatment plants, sanitary landfills, transfer stations, composting facilities, petroleum refineries, asphalt batch plants, chemical manufacturing facilities, fiberglass manufacturing facilities, auto body shops, rendering plants, and coffee roasting facilities. Given that the Specific Plan would not permit these types of facilities and would not locate sensitive receptors within close proximity to these types of facilities outside the Plan area, it can be assumed that no odor impact would occur. Therefore, impacts related to odor are not discussed further in this EIR.

[16] MEI is the Maximally Exposed Individual, which represents the worst-case risk estimate based on a theoretical person continuously exposed for 70 years at the point of highest compound concentration in air.

Impacts

Impact AIR-1: Implementation of the Specific Plan would result in increased long-term emissions of criteria pollutants associated with construction activities that could contribute substantially to an air quality violation. (Significant)

Implementation of the Specific Plan would allow for development of approximately 330,000 square feet of retail and commercial development, 680 residential units, and 380 hotel rooms over a 30-year timeframe. Furthermore, the Specific Plan would include infrastructure improvements such as sidewalk improvements and new bicycle and pedestrian connections. Such development would require demolition and removal of existing structures, grading, and site preparation and construction of new structures. Emissions generated during construction activities would include exhaust emissions from heavy duty construction equipment, trucks used to haul construction materials to and from sites, worker vehicle emissions, as well as fugitive dust emissions associated with earth disturbing activities.

The BAAQMD Guidelines do not include a threshold of significance for evaluating construction related impacts at the Plan level. Instead, subsequent individual development projects in the Plan area would be required to meet thresholds of significance for criteria pollutant emissions associated with construction equipment exhaust. The project-specific construction thresholds are 54 lbs per day of reactive organic gases, nitrogen oxides, and $PM_{2.5}$ (exhaust only) and 82 pounds per day for PM_{10} (exhaust only). The BAAQMD Guidelines also contain health-based standards for exposure to toxic air contaminants that are the same as those for project operations, described above on page 4.2-11.

BAAQMD has proposed screening thresholds that would allow most of the projects constructed under the Specific Plan to be deemed to have less-than-significant construction emissions without a detailed air quality analysis. Examples of projects that would be considered less than significant under BAAQMD's screening approach are presented in **Table 4.2-3** below. In addition to the project size requirements shown in Table 4.2-3, projects would also be required to include all "Basic Construction Mitigation Measures" as defined in the BAAQMD proposed guidelines. It is noted that the proposed screening thresholds do not consider effects of demolition of existing structures or projects for which construction schedules call for overlapping construction phases (e.g., paving and building construction occurring simultaneously) that could result in greater emissions than assumed by default assumptions used by the so-called URBan EMISsions (URBEMIS) air quality model. Therefore, some subsequent development projects, including some that do not exceed the screening thresholds presented in Table 4.2-3, would require a detailed air quality analysis that demonstrates compliance with applicable guidelines at the time of development.

Given that detailed construction information, such as construction techniques and scheduling, that would be utilized for each individual development project is not currently known, estimation of emissions from individual development projects would be too speculative to warrant evaluation. However, implementation of Mitigation Measure AIR-1a would require implementation of standard fugitive dust control measures in order to ensure that impacts from fugitive dust would be less than significant.

TABLE 4.2-3
BAAQMD ADOPTED CONSTRUCTION RELATED CRITERIA AIR POLLUTANT AND OZONE PRECURSOR SCREELING LEVEL SIZES

Land use Type	Construction-Related Screening Size
Single Family	114 dwelling units
Apartment, low-rise; Apartment, mid-rise; Condo/townhouse, general; Congregate care facility	240 dwelling units
Apartment, high rise	249 dwelling units
Condo/townhouse, high-rise	252 dwelling units
Mobile home park; Retirement community	114 dwelling units
Elementary school	277,000 square feet or 3904 students
Junior high school	277,000 square feet or 3261 students
High school; Junior college; University/College	277,000 square feet or 3012 students
Day-care center; Library; Place of worship; Racquet club; Racquetball/ health; Quality restaurant; High turnover restaurant; Fast food restaurant; Free standing discount store; Discount club; Regional shopping center; Electronic superstore; Home improvement store; Strip mall; Hardware/ paint store; Supermarket; Convenience market; Bank; General office building; Office park; Government office building; Pharmacy/drugstore; Medical office building	277,000 square feet
City park	67 acres
Hotel; Motel	554 rooms
Hospital	277,000 square feet or 337 beds
Warehouse	259,000 square feet or 11 acres
General light industry	259,000 square feet, 11 acres or 540 employees
General heavy industry	259,000 square feet or 11 acres
Industrial park	259,000 square feet, 11 acres or 577 employees
Manufacturing	259,000 square feet

SOURCE: BAAQMD, 2010.

Due to the uncertainty in construction activities that would result from implementation of the Specific Plan, it is conceivable that one or more of the subsequent development projects under the Specific Plan could trigger project level significant construction exhaust emissions impacts under the 2010 BAAQMD Guidelines significance thresholds for construction exhaust. Therefore, impacts associated with construction equipment exhaust emissions that would result under implementation of the Specific Plan are considered significant.

Nonetheless, implementation of Mitigation Measure AIR-1b would ensure that construction exhaust emissions would be reduced to the maximum extent feasible. It should be noted that the identification of this program level potentially significant impact does not preclude the finding of future less-than-significant impacts for subsequent projects that comply with BAAQMD screening criteria or meet applicable thresholds of significance.

Mitigation Measure AIR-1a: During construction of individual projects under the Specific Plan, project applicants shall require the construction contractor(s) to implement the following measures required as part of Bay Area Air Quality Management District's (BAAQMD) basic dust control procedures required for construction sites. For projects for which construction emissions exceed one or more of the applicable BAAQMD thresholds, additional measures shall be required as indicated in the list following the Basic Controls.

Basic Controls that Apply to All Construction Sites

1. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.

2. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.

3. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.

4. All vehicle speeds on unpaved roads shall be limited to 15 mph.

5. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.

6. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.

7. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.

8. Post a publicly visible sign with the telephone number and person to contact at the Lead Agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The BAAQMD's phone number shall also be visible to ensure compliance with applicable regulations.

Additional Measures for Development Projects that Exceed Significance Criteria

1. All exposed surfaces shall be watered at a frequency adequate to maintain minimum soil moisture of 12 percent. Moisture content can be verified by lab samples or moisture probe.

2. All excavation, grading, and/or demolition activities shall be suspended when average wind speeds exceed 20 mph.

3. Wind breaks (e.g., trees, fences) shall be installed on the windward side(s) of actively disturbed areas of construction. Wind breaks should have at maximum 50 percent air porosity.

4. Vegetative ground cover (e.g., fast-germinating native grass seed) shall be planted in disturbed areas as soon as possible and watered appropriately until vegetation is established.

5. The simultaneous occurrence of excavation, grading, and ground-disturbing construction activities on the same area at any one time shall be limited. Activities shall be phased to reduce the amount of disturbed surfaces at any one time.

6. All trucks and equipment, including their tires, shall be washed off prior to leaving the site.

7. Site accesses to a distance of 100 feet from the paved road shall be treated with a 6- to 12-inch compacted layer of wood chips, mulch, or gravel.

8. Sandbags or other erosion control measures shall be installed to prevent silt runoff to public roadways from sites with a slope greater than one percent.

9. Minimizing the idling time of diesel powered construction equipment to two minutes.

10. The project shall develop a plan demonstrating that the off-road equipment (more than 50 horsepower) to be used in the construction project (i.e., owned, leased, and subcontractor vehicles) would achieve a project wide fleet-average 20 percent nitrogen oxides reduction and 45 percent particulate matter reduction compared to the most recent ARB fleet average. Acceptable options for reducing emissions include the use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, add-on devices such as particulate filters, and/or other options as such become available.

11. Use low volatile organic compound (VOC) (i.e., reactive organic gases) coatings beyond the local requirements (i.e., Regulation 8, Rule 3: Architectural Coatings).

12. Requiring that all construction equipment, diesel trucks, and generators be equipped with Best Available Control Technology for emission reductions of nitrogen oxides and particulate matter.

13. Requiring all contractors use equipment that meets the California Air Resources Board's most recent certification standard for off-road heavy duty diesel engines.

Mitigation Measure AIR-1b: Each applicant for development projects to be implemented under the Specific Plan for projects that exceed the BAAQMD screening criteria shall develop an Exhaust Emissions Control Plan outlining how construction exhaust emissions will be controlled during construction activities. These plans shall be submitted to the City for review and approval and shall be distributed to all employees and construction contractors prior to commencement of construction activities. The plan shall describe all feasible control measures that will be implemented during construction activities. Feasible control measures may include, but not be limited to, those identified in Mitigation Measure AIR-1a.

Even with mitigation, it is possible that one or more larger subsequent development projects would result in a significant, unavoidable impact with respect to emissions during construction. Therefore, for purposes of a conservative analysis, the impact is considered significant and unavoidable, with respect to criteria pollutant emissions from construction equipment exhaust.

Significance after Mitigation: Significant and Unavoidable.

Impact AIR-2: Implementation of the Specific Plan would result in increased long-term emissions of criteria pollutants from increased vehicle traffic and on-site area sources that would contribute substantially to an air quality violation. (Significant)

The most recently adopted air quality plan in the San Francisco Bay Area Air Basin is the *2010 Clean Air Plan*. The *2010 Clean Air Plan* is a roadmap showing how the San Francisco Bay Area will achieve compliance with the state one-hour ozone standard as expeditiously as practicable, and how the region will reduce transport of ozone and ozone precursors to neighboring air basins. The control strategy includes stationary-source control measures to be implemented through BAAQMD regulations; mobile-source control measures to be implemented through incentive programs and other activities; and transportation control measures to be implemented through transportation programs in cooperation with the MTC, local governments, transit agencies, and others. The *2010 Clean Air Plan* also represents the Bay Area's most recent triennial assessment of the region's strategy to attain the state one-hour ozone standard. In this, the *2010 Clean Air Plan* replaces the *2005 Ozone Strategy*. Under BAAQMD's methodology, a determination of consistency with the most recently adopted Clean Air Plan ("CAP"), currently the 2010 CAP, must demonstrate that a plan or project not exceed the population or vehicle miles traveled ("VMT") assumptions contained in the CAP and that the project or plan implements transportation control measures ("TCMs") as applicable.

Criterion 1: Population Growth and Vehicle Miles Traveled Consistency

For a project to be consistent with the CAP, BAAQMD requires that the projected increase in VMT associated with a proposed project be less than the projected population increase. Because project vehicle trips would be distributed not just to Menlo Park, percentage increases of VMT and population are compared on a countywide basis because available VMT estimates are inventories on a countywide basis, not a citywide basis.

The Metropolitan Transportation Commission (MTC) maintains an inventory of population VMT for the region and by county,[17] the latest version of which was published in 2008. The population estimates of the MTC cite a 2035 San Mateo county region-wide population of 861,600. As discussed in Section 4.11, *Population and Housing*, of this EIR, development under the Specific Plan would result in a population increase of approximately 1,537 persons. This represents a regional population increase of 0.18 percent.

According to the *El Camino Real/Downtown Specific Plan Transportation Impact Analysis* presented in Appendix E, the Specific Plan would increase daily VMT by approximately 90,000 miles per day. The MTC maintains an inventory of VMT for the region and by county.[18] For 2035, MTC data shows VMT for San Mateo County of 19,657,142 miles. The addition of

[17] http://www.mtc.ca.gov/planning/2035_plan/Supplementary/T2035-Travel_Forecast_Data_Summary.pdf
[18] http://www.mtc.ca.gov/planning/2035_plan/Supplementary/T2035-Travel_Forecast_Data_Summary.pdf

project-related VMT to the 2035 forecast results in a total increase of 0.46 percent in the VMT for the proposed Specific Plan.

Consequently, the rate of increase in VMT (0.46 percent) would be more than the rate of increase in population (0.18 percent) for the proposed Specific Plan and would be considered inconsistent with the population and VMT assumptions of the CAP.

Criterion 2: Plan consistency with Transportation Control Measures contained in the Clean Air Plan

Air pollutant emissions are a function of human activity. The 1988 California Clean Air Act, Section 40919(d) requires regions to implement "transportation control measures to substantially reduce the rate of increase in passenger vehicle trips and miles traveled."

The *Bay Area 2010 Clean Air Plan* (CAP) contains 59 control measures aimed at reducing air pollution in the Bay Area. Many (18) of these measures address stationary sources and will be implemented by BAAQMD using its permit authority and are therefore not suited to implementation through local planning efforts. Sixteen other measures are a draft list of measures for further study and are not yet identified as feasible for implementation under the 2010 CAP. The remaining 25 measures are identified in **Table 4.2-4**. This table identifies each Control Strategy and correlates it to specific elements of the Specific Plan or explains why the Strategy does not apply to the proposed Specific Plan. Therefore, the proposed Specific Plan would be consistent with the Control Strategies contained in the 2010 CAP for the San Francisco Bay Area Air Basin.

Table 4.2-4 shows that the proposed Specific Plan would not disrupt or hinder implementation of any CAP control measures. BAAQMD has identified examples of how a Plan may cause the disruption or delay of control measures, such as a project that may preclude an extension of a transit line or bike path or proposes excessive parking beyond parking requirements. Section F.6 of the Specific Plan calls for accommodation of new and improved bus rapid transit service and shuttle service. Section F.3 and F.4 of the Specific Plan provide for improved pedestrian and

bicycle facilities. Section F.9 of the Specific Plan addresses limiting parking demand in the Specific Plan area. The Specific Plan does not limit any transit extension. These elements of the Specific Plan demonstrate that control measure disruption or delay would not occur under the proposed Specific Plan.

> **Mitigation:** Mitigation Measure TR-2 of Section 4.13, *Transportation, Circulation and Parking*, identifies Transportation Demand Management (TDM) strategies to be implemented by individual project applicants, although the precise effectiveness of a TDM program cannot be guaranteed. As the transportation demand management strategies included in Mitigation Measure TR-2 represent the majority of available measures with which to reduce VMT, no further mitigation measures are available and this impact is considered to be significant and unavoidable.
>
> **Significance after Mitigation:** Significant and Unavoidable.

TABLE 4.2-4
CONTROL STRATEGIES OF THE 2010 CLEAN AIR PLAN

2010 CAP Control Strategy	Elements of the Proposed Project Consistent with the Strategy or Explanation of Non-applicability
Transportation Control Measures	
TCM A: Improve Transit Services	Section F.6 of the Specific Plan addresses how the Plan supports transit services including accommodation of bus rapid transit service and increasing shuttle service.
TCM B: Improve System Efficiency	Not Applicable: This measure addresses infrastructure improvements to increase operational efficiencies on freeways and transit service (such as common fare payment systems) and are geared toward regional transit agencies and CALTRANS and not local government.
TCM C: Encourage Sustainable Travel Behavior (i.e., voluntary employer-based trip reduction program)	Section F.10 of the Specific Plan requires all new developments to establish a Transportation Demand Management (TDM) program. Developers may choose from a menu of TDM strategies including subsidies for site users who use transit or alternative modes of transportation.
TCM D: Support Focused Growth (Bicycle and Pedestrian friendliness)	Alternative transportation modes are addressed in Sections F.3, F.4, and F.5 of the Specific Plan. These sections include such elements as sidewalk improvements and special crossing treatments to create a more pedestrian friendly network. Additionally, the Specific Plan establishes a comprehensive bicycle network and new bicycle parking standards for the area.
TCM E: Implement Pricing Strategies	Parking pricing strategies are addressed in Section F.9 of the Specific Plan and include possible implementation of a metered parking system.
Mobile Source Control Measures	
MSM A-1: Promote Clean Fuel Efficient Vehicles	Section F.10 of the Specific Plan identifies preferential parking for alternative fueled vehicles as one potential element of a TDM program that would be required of all new developments. Additionally, the Plan has been revised to include Mitigation Measure GHG-2a for providing charging stations for electric or hybrid vehicles in garages.
MSM A-2: Zero Emission Vehicles	Section F.10 of the Specific Plan identifies neighborhood electric vehicle programs to reduce the need to have a car or second car as one potential element of a TDM program that would be required of all new developments.
MSM A-3: Green Fleets	Not Applicable: Development of the Plan area would generally be retail, commercial or residential in nature and unlikely to accommodate a land use requiring a fleet of vehicles. However, a green fleet could be used by a developer as a TDM program required under Section F.10 of the Specific Plan.
MSM A-4: Replacement or Repair of High-emitting Vehicles	Not Applicable: This Strategy addresses vehicle buy-back programs implemented by BAAQMD.
MSM B-1: Fleet Modernization for Medium and Heavy-Duty Trucks	Not Applicable: This Strategy addresses incentive programs for truck modernization which are implemented by BAAQMD or CARB.
MSM B-2: Low NOx retrofits in Heavy-Duty Trucks	Not Applicable: This Strategy addresses cash incentives for retrofits which are implemented by BAAQMD or CARB.
MSM B-3: Efficient Drive Trains	Not Applicable: This Strategy addresses development and demonstration programs in partnership with CARB and the California Energy Commission.
MSM C-1: Construction and Farming Equipment	Not Applicable: This Strategy addresses cash incentives for retrofits which are implemented by BAAQMD or CARB.
MSM C-2: Lawn & Garden Equipment	Not Applicable: This Strategy addresses voluntary exchange programs implemented by BAAQMD.
MSM C-3: Recreational Vessels	Not Applicable: This Strategy addresses voluntary exchange programs implemented by BAAQMD.

TABLE 4.2-4 (Continued)
CONTROL STRATEGIES OF THE 2010 CLEAN AIR PLAN

2010 CAP Control Strategy	Elements of the Proposed Project Consistent with the Strategy or Explanation of Non-applicability
Land Use & Local Impact Measures	
LUM 1: Goods Movement	Not Applicable: The City of Menlo Park has a truck route map that promotes truck travel away from constrained routes and concentrated sensitive receptors.
LUM 2: Indirect Source Review Rule	Not Applicable: This Strategy addresses implementation of an indirect source Rule by BAAQMD.
LUM 3: Updated CEQA Guidelines	This Strategy addresses updating of the CEQA Guidelines by BAAQMD (adopted in June 2010 and applied in this analysis).
LUM 4: Land Use Guidance	This strategy addresses updating land use planning documents such as the proposed Specific Plan and demonstrating consistency with air quality protection guidance such as the new BAAQMD CEQA Guidelines that are applied in this analysis.
LUM 5: Reduce Health Risk in Impacted Communities	The Project area is generally developed with commercial, retail and residential uses and would not be considered to be an "impacted" community with regard to airborne health risk exposure. However, Caltrain operations through the Specific Plan area are a source of diesel particulate matter. Mitigation Measure AIR-5 discussed latter in this section addresses potential exposure to new residential developments potentially constructed under the Specific Plan.
LUM 6: Enhanced Air Quality Monitoring	Not Applicable: This Strategy addresses air quality monitoring that is the purview of BAAQMD and/or CARB.
Energy & Climate Measures	
ECM 1: Energy Efficiency	Section E.3.8.3 of the Specific Plan identifies sustainable building strategies to be incorporated into future development including LEED certification and guidelines addressing solar access, storm water and wastewater management, landscaping, lighting and green building materials.
ECM 2: Renewable Energy	See measure ECM-1 above.
ECM 3: Urban Heat Island Mitigation	As stated in Section E.5 of the Specific Plan: The downtown concept reinforces and enhances the overall tree canopy to provide shade and to mitigate for heat island effects.
ECM 4: Shade Tree Planting	The Specific Plan includes guidelines encouraging additional trees in the Plan area (Guidelines, D.2.04, D.2.40, D.2.49, D.2.54, D.3.06, D.3.09, D.3.16, D.3.25, D.4.05, D.4.11, D.4.14, D.5.03, D.5.04, D.5.18, and D.6.06.

SOURCE: Environmental Science Associates, 2010.

Impact AIR-3: Implementation of the Specific Plan would increase levels of project generated toxic air contaminants (TACs) which may lead to adverse health effects. (Less than Significant)

Implementation of the Specific Plan would increase vehicle trip generation, a percentage of which would include heavy duty truck traffic which is a major source of diesel particulate matter (DPM). DPM is a carcinogen of concern and also has chronic non-cancer effects on the respiratory system and can increase the frequency and intensity of asthma attacks.

The roadway segment with the greatest increase in average daily trips from implementation of the Specific Plan would be along El Camino Real. BAAQMD has generated screening tables to assess risks from DPM along major freeways and highways, which include El Camino Real.

The maximum existing incremental cancer risk from exposure to DPM concentrations along El Camino Real is calculated by BAAQMD to be 20 in one million[19] and is based on an assumed 2-way daily traffic volume of 49,000 vehicles per day. This risk is calculated for a distance of 100 feet from the edge of the roadway. The risk drops substantially with distance, to 0.69 per million at a distance of 200 feet. The proposed project would increase roadway volumes along this segment of El Camino Real by up to 401 vehicles per hour or approximately 4,000 vehicles per day. This represents an increase is mobile source emissions increase of approximately 8.2 percent with a commensurate increase in cancer risk from DPM of approximately 1.64 in one million. This is less than the BAAQMD significance criterion of 10 in one million; therefore project impacts would be less than significant along El Camino Real requiring no mitigation.

In addition to cancer risk, DPM has non-cancer chronic effects on the respiratory system. The non-cancer adverse health risk for chronic (long-term) exposure, is measured against a hazard index, which is defined as the ratio of the predicted incremental exposure concentration from emissions to a published reference exposure level (REL) that could cause adverse health effects as established by the Office of Environmental Health Hazard Assessment. Using the same method as for determination of cancer risk, the project related hazard index is estimated to be 0.011, which is well under the significance threshold of 1.0 and hazard index impacts along El Camino Real would be less than significant.

The health risks posed by Plan-generated traffic on other roadways in and near the Plan area would be less than that on El Camino Real, and thus would also be less than significant.

Mitigation: None required.

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[19] BAAQMD, Road and Highway Screening Tables, October 26, 2010, available at: http://www.baaqmd.gov/Divisions/Planning-and-Research/CEQA-GUIDELINES/Tools-and-Methodology.aspx

Impact AIR-4: Implementation of the Specific Plan would expose persons to increased levels of project generated $PM_{2.5}$ which may lead to adverse health effects. (Less than Significant)

Total $PM_{2.5}$ concentrations at the maximum exposed individual were modeled similarly to diesel particulate matter concentrations as discussed under Impact AIR-3; however, in addition to truck traffic, $PM_{2.5}$ emissions from light weight vehicles and from tire and brake wear were also included in these calculations. Based on modeling results, concentrations from Plan-generated traffic would be approximately 0.023 micrograms per cubic meter ($\mu g/m^3$) along El Camino Real. This is well below the BAAQMD draft threshold of 0.3 $\mu g/m^3$; therefore, impacts would be less than significant. $PM_{2.5}$ concentrations from Plan-generated traffic on other roadways would be lower, and would also be less than significant.

Mitigation: None required.

Impact AIR-5: Implementation of the Specific Plan would locate sensitive receptors in an area of elevated concentrations of toxic air contaminants associated with roadway traffic which may lead to considerable adverse health effects. (Potentially Significant)

The Specific Plan would locate new residential receptors near high volume roadways that would have a percentage of diesel truck traffic. The Specific Plan would also potentially locate new residential receptors near El Camino Real, which is a source of diesel particulate matter (DPM). BAAQMD has generated screening tables to assess risks from DPM along major freeways and highways, which include El Camino Real. The maximum existing incremental cancer risk from exposure to DPM concentrations along El Camino Real is calculated by BAAQMD to be 20 in one million[20] and is based on an assumed two-way daily traffic volume of 49,000 vehicles per day. This risk is calculated for a distance of 100 feet from the edge of the roadway. The risk drops substantially with distance to 0.69 per million at a distance of 200 feet. The proposed project would increase cancer risk from 20 in one million to 21.6 in one million.

In order to reduce maximum incremental cancer risks to less than 10 in one million, residential units in the Plan area within 200 feet of the edge of El Camino Real would have to implement Mitigation Measure AIR-5, which would require installation of air filtration systems in new residential units to reduce DPM levels.

The chronic non-cancer hazard index from vehicle traffic on El Camino Real at the maximally exposed receptor is 0.48 and would be less than the BAAQMD significance threshold for hazard indices of 1.0 and be less than significant.

[20] BAAQMD, Road and Highway Screening Tables, October 26, 2010, available at: http://www.baaqmd.gov/Divisions/Planning-and-Research/CEQA-GUIDELINES/Tools-and-Methodology.aspx

Table 4.13-9 in Section 4.13, *Transportation, Circulation and Parking*, indicates that other streets in the Plan area have daily traffic volumes in excess of 10,000 vehicles, which is the BAAQMD's recommended screening threshold, below which traffic is assumed to not result in local health risks. These streets include Ravenswood Avenue, Oak Grove Avenue east of El Camino Real, and a small portion of Santa Cruz Avenue in the Plan area, west of University Avenue. All of these streets have volumes considerably lower than that on El Camino Real, and thus uses along these streets would be subject to proportionately less risk than those adjacent to El Camino Real, although risks at certain project sites could be significant.

Implementation of Mitigation Measure AIR-5, however, would reduce the impacts of health risk from DPM to a less-than-significant level.

> **Mitigation Measure AIR-5:** The Mitigation Monitoring and Reporting Program shall require that all developments that include sensitive receptors such as residential units that would be located within 200 feet of the edge of El Camino Real or within 100 feet of the edge of Ravenswood Avenue, Oak Grove Avenue east of El Camino Real, or Santa Cruz Avenue west of University Avenue shall undergo, prior to project approval, a screening-level health risk analysis to determine if cancer risk, hazard index, and/or $PM_{2.5}$ concentration would exceed BAAQMD thresholds. If one or more thresholds would be exceeded at the site of the subsequent project, the project (or portion of the project containing sensitive receptors, in the case of a mixed-use project) shall be equipped with filtration systems with a Minimum Efficiency Reporting Value (MERV) rating of 14 or higher. The ventilation system shall be designed by an engineer certified by the American Society of Heating, Refrigeration and Air-Conditioning Engineers, who shall provide a written report documenting that the system reduces interior health risks to less than 10 in one million, or less than any other threshold of significance adopted by BAAQMD or the City for health risks. The project sponsor shall present a plan to ensure ongoing maintenance of ventilation and filtration systems and shall ensure the disclosure to buyers and/or renters regarding the findings of the analysis and inform occupants as to proper use of any installed air filtration. Alternatively, if the project applicant can prove at the time of development that health risks at new residences due to DPM (and other TACs, if applicable) would be less than 10 in one million, or less than any other threshold of significance adopted by BAAQMD for health risks, or that alternative mitigation measures reduce health risks below any other City-adopted threshold of significance, such filtration shall not be required.

According to American Society of Heating, Refrigeration and Air-Conditioning Engineers (ASHRAE) Standard 52.2 Test Procedures, filters that fall into the Minimum Efficiency Reporting Value (MERV) rating of 14 or higher reduce DPM levels by approximately 85 percent. If residential units are equipped with filtration systems meeting a MERV 14 rating, with control efficiency of 85 percent or greater, the maximum cancer risks from DPM associated with El Camino truck traffic would be reduced to 3.2 in one million; therefore, impacts would be less than significant with implementation of Mitigation Measure AIR-5.

> **Significance after Mitigation:** Less than Significant.

Impact AIR-6: Implementation of the Specific Plan would locate new sensitive receptors in an area of elevated concentrations of $PM_{2.5}$ associated with roadway traffic which may lead to considerable adverse health effects. (Potentially Significant)

The Specific Plan would locate new residential receptors near high volume roadways. All vehicles including light duty automobiles and diesel trucks generate $PM_{2.5}$ emissions from engine exhaust as well as from entrained road dust and tire and brake wear. BAAQMD has generated screening tables to assess annual average $PM_{2.5}$ concentrations from vehicle traffic along major freeways and highways, which include El Camino Real. The maximum existing annual average $PM_{2.5}$ concentration along El Camino Real is calculated by BAAQMD to be 0.48 $\mu g/m^3$ (micrograms per cubic meter) at a distance of 100 feet from the edge of the roadway. Exposure to this concentration would exceed the BAAQMD individual source threshold of 0.3 $\mu g/m^3$ and represent a significant $PM_{2.5}$ exposure impact. At 200 feet from El Camino Real this concentration would be reduced to 0.20 $\mu g/m^3$ and be less than significant. Other streets noted in Table 4.13-9 in Section 4.13, *Transportation, Circulation and Parking*, also have traffic volumes in excess of 10,000 vehicles per day and subsequent development sites along these streets could be subject to elevated concentrations of $PM_{2.5}$, although the concentrations would be lower than those along El Camino Real.

Mitigation Measure AIR-5 associated with Impact AIR-5 regarding DPM exposure would also reduce $PM_{2.5}$ exposure impacts along El Camino Real and other high-volume streets to a less than significant level.

Significance after Mitigation: Less than Significant.

Impact AIR-7: Implementation of the Specific Plan would expose sensitive receptors to elevated concentrations of Toxic Air Contaminants (TACs) associated with Caltrain operations which may lead to considerable adverse health effects. (Potentially Significant)

The Specific Plan would locate new residential receptors near the Caltrain line, which is a substantial source of diesel particulate matter (DPM). As discussed under Impact AIR-3, DPM is a carcinogen of concern and also has chronic non-cancer effects on the respiratory system and can increase the frequency and intensity of asthma attacks.

Caltrain emissions were evaluated to determine the exposure risk to Plan area residents, relying on data from the California Air Resources Board and EPA, including locomotive emissions standards adopted by the EPA in 2008 that are anticipated to reduce fine particulate emissions from locomotives by more than 80 percent by the year 2040, compared to 2008 levels.[21] The analysis is described in detail in Appendix C. An additional analysis that included the Union Pacific freight trains was completed as part of the response to Comment O-30.

[21] Although High Speed Rail trains may use the Caltrain right-of-way, no local emissions were assumed for these trains as they would be electric rather than diesel driven.

Annual average DPM concentrations from locomotives were modeled using the EPA dispersion model AERMOD, and considered both moving trains and trains idling at the Caltrain station. Based on modeling results, the highest concentration of DPM would be approximately 0.18 $\mu g/m^3$ (micrograms per cubic meter) and would occur 50 feet east (downwind) of the track centerline near the Menlo Park Caltrain Station. The maximum incremental cancer risk from exposure to DPM was calculated to be 58.0 in one million, for an outdoor location, while the indoor risk level would be about one-third lower, or about 38.6 in one million.[22] This is substantially in excess of significance criterion of 10 in one million.

In order to reduce maximum incremental cancer risks to less than 10 in one million, residential units in the Plan area to the east of the Caltrain tracks, as well as residential uses west of and within approximately 1,095 feet of the edge of the railroad right-of-way would have to implement Mitigation Measure AIR-7, which would require installation of air filtration systems in new residential units to reduce DPM levels.

In addition to cancer risk, DPM has non-cancer chronic effects on the respiratory system. The non-cancer adverse health risk for chronic (long-term) exposure, is measured against a hazard index, which is defined as the ratio of the predicted incremental exposure concentration from emissions to a published reference exposure level that could cause adverse health effects as established by the Office of Environmental Health Hazard Assessment. The hazard index was calculated to be 0.036 (see Appendix C for calculations), which is well under the significance threshold of 1.0 and impacts would be less than significant even without implementation of Mitigation Measure AIR-7.

It is important to note that the Caltrain 2025 Project would provide for the conversion of diesel-hauled to electric-hauled trains. There would be a limited number of diesel locomotive operations for certain passenger routes; however, Caltrain has estimated that the electrification project would reduce air pollutant emissions from trains by approximately 90 percent. If electrification is implemented, this reduction would lessen cancer risk from DPM in the Plan area to less than 10 in one million, even without implementation of Mitigation Measure AIR-7.

In terms of stationary sources of TACs, review of BAAQMD data reveals no individual sources (such as dry cleaners, gas stations, or diesel backup generators) within or proximate to the Plan area that generate TAC concentrations in excess of BAAQMD thresholds.

> **Mitigation Measure AIR-7:** The Mitigation Monitoring and Reporting Program shall require that all developments that include sensitive receptors such as residential units that would be located within approximately 1,095 feet of the edge of the Caltrain right-of-way shall undergo, prior to project approval, a screening-level health risk analysis to determine if cancer risk, hazard index, and/or $PM_{2.5}$ concentration would exceed BAAQMD thresholds. If one or more thresholds would be exceeded at the site of the subsequent project, the project (or portion of the project containing sensitive receptors, in the case of a mixed-use project) shall be equipped with filtration systems with a Minimum Efficiency

[22] Studies by CARB indicate that people spend 90 percent of their time indoors, and that total exposure levels of particulate matter in residences without any filtration for incoming air are about one third lower than levels outside.

Reporting Value (MERV) rating of 14 or higher. The ventilation system shall be designed by an engineer certified by the American Society of Heating, Refrigeration and Air-Conditioning Engineers, who shall provide a written report documenting that the system reduces interior health risks to less than 10 in one million, or less than any other threshold of significance adopted by BAAQMD or the City for health risks. The project sponsor shall present a plan to ensure ongoing maintenance of ventilation and filtration systems and shall ensure the disclosure to buyers and/or renters regarding the findings of the analysis and inform occupants as to proper use of any installed air filtration. Alternatively, if the project applicant can prove at the time of development that health risks at new residences due to DPM (and other TACs, if applicable) would be less than 10 in one million, or less than any other threshold of significance adopted by BAAQMD for health risks, or that alternative mitigation measures reduce health risks below any other City-adopted threshold of significance, such filtration shall not be required.

According to American Society of Heating, Refrigeration and Air-Conditioning Engineers (ASHRAE) Standard 52.2 Test Procedures, filters that fall into the Minimum Efficiency Reporting Value (MERV) rating of 14 or higher reduce DPM levels by approximately 85 percent. If residential units are equipped with filtration systems meeting a MERV 14 rating, with control efficiency of 85 percent or greater, the maximum cancer risks from DPM associated with Caltrain operations would be reduced to 8.7 in one million; therefore, impacts would be less than significant with implementation of Mitigation Measure AIR-7.

Significance after Mitigation: Less than Significant.

Impact AIR-8: Implementation of the Specific Plan would expose new sensitive receptors to elevated concentrations of $PM_{2.5}$ associated with Caltrain operations which may lead to considerable adverse health effects. (Less than Significant)

In the analysis presented under Impact AIR-7, it was assumed that all $PM_{2.5}$ emissions from locomotives would be diesel particulate matter (DPM); therefore, estimated DPM concentrations can be used to represent $PM_{2.5}$ concentrations as well. As discussed under Impact AIR-7, annual average DPM concentrations at the maximally exposed individual (MEI) would be approximately 0.18 $\mu g/m^3$ (micrograms per cubic meter). This is less than the proposed threshold of significance for $PM_{2.5}$ concentrations from individual sources of 0.3 $\mu g/m^3$; therefore, $PM_{2.5}$ impacts from rail operations would be less than significant.

Mitigation: None required.

Cumulative Impacts

The 2010 BAAQMD Guidelines recommend that Plan-level impacts be assessed based on consistency with growth assumptions of the current Air Quality Plan for the purposes of assessing cumulative impacts. However, this analysis includes not only an assessment of growth consistency but also includes a cumulative analysis of DPM and $PM_{2.5}$ exposure. The BAAQMD thresholds of significance discussed previously are designed to determine whether pollutant emissions are cumulatively considerable, because uses of the type included in the Specific Plan do not generate enough emissions to be individually significant.

Impact AIR-9: The Specific Plan is fundamentally consistent with the growth assumptions of the *Bay Area 2010 Clean Air Plan*. (Less than Significant)

The Specific Plan is anticipated to house approximately 1,500 net new residents (refer to Impact POP-2 of Section 4.11, *Population and Housing*) at build-out. However, given that ABAG projects a residential increase in the Menlo Park sphere of influence of 1,500 residents by 2010 and 2,600 between 2010 and 2020, and that Menlo Park is otherwise fairly fully developed, it can be assumed that the Specific Plan is generally consistent with growth projections for the area. Therefore, implementation of the Specific Plan would not induce substantial population growth that would conflict with the assumptions in the 2010 Clean Air Plan and impacts would be less than significant.

Mitigation: None required.

Impact AIR-10: Implementation of the Specific Plan would locate new sensitive receptors near sources of toxic air contaminants which may lead to cumulatively considerable adverse health effects. (Potentially Significant)

Major sources of diesel particulate matter (DPM) in the Plan area include Caltrain locomotives as well as diesel fueled trucks traveling along roadways within the project area. Diesel particulate matter can result in increased cancer risk as well as chronic non cancer exposure hazards. With regard to increased cancer risks, as discussed under Impact AIR-7, individual risk from exposure to diesel particulate matter associated with the Caltrain line would be approximately 58.0 in one million at the maximally exposed individual level without mitigation. Risk associated with roadway traffic, as discussed under Impact AIR-5, would not exceed 21.6 in one million at the maximally exposed individual level. Therefore, cumulative risk in the project area would be approximately 79.6 in one million which would not exceed the BAAQMD recommended threshold of 100 in one million. Therefore, cumulative health risk in the project area would be less than significant requiring no mitigation. However, as discussed under Impact AIR-5, implementation of Mitigation Measures AIR-5 and AIR-7 would be required to reduce risk from traffic-generated pollutants to a less-than-significant level. Implementation of this measure would subsequently reduce maximum cumulative risk to less than 10.9 in one million, which is well below the cumulative threshold of 100 in one million.

The cumulative non-cancer hazard index from exposure to diesel particulate matter would be less than 0.036 from rail operations of Caltrain and 0.48 from roadway traffic on El Camino Real. Assuming the maximum impacted rail receptors are the same as the maximally impacted roadway receptors, the cumulative hazard index would be 0.516. This is less than the cumulative BAAQMD significance threshold of 10.0; therefore, cumulative non-cancer risk from exposure to diesel particulate matter would also be less than significant.

As stated under Impact AIR-7, BAAQMD data indicate that there are no stationary sources of TACs within or proximate to the Plan area that generate TAC concentrations in excess of BAAQMD thresholds. The SRI International facility on Ravenswood Avenue has several diesel generators at various locations on its campus, as well as other permitted sources of TACs, including incinerators and a spray painting booth. Because the nearest portion of the SRI campus is approximately 800 feet from the Plan area, cumulative impacts are less likely than for a closer facility. However, implementation of Mitigation Measure AIR-10 would ensure that potential cumulative health risks would be less than significant.

> **Measure AIR-10:** The Mitigation Monitoring and Reporting Program shall require that all developments that include sensitive receptors such as residential units that would be located within 1,000 feet around SRI International campus undergo, prior to project approval, a screening-level health risk analysis to determine if cancer risk, hazard index, and/or $PM_{2.5}$ concentration would exceed BAAQMD thresholds. If one or more thresholds would be exceeded at the site of the subsequent project, the project (or portion of the project containing sensitive receptors, in the case of a mixed-use project) shall be equipped with filtration systems with a Minimum Efficiency Reporting Value (MERV) rating of 14 or higher. The ventilation system shall be designed by an engineer certified by the American Society of Heating, Refrigeration and Air-Conditioning Engineers, who shall provide a written report documenting that the system reduces interior health risks to less than 10 in one million, or less than any other threshold of significance adopted by BAAQMD or the City for health risks. The project sponsor shall present a plan to ensure ongoing maintenance of ventilation and filtration systems and shall ensure the disclosure to buyers and/or renters regarding the findings of the analysis and inform occupants as to proper use of any installed air filtration. Alternatively, if the project applicant can prove at the time of development that health risks at new residences due to DPM (and other TACs, if applicable) would be less than 10 in one million, or less than any other threshold of significance adopted by BAAQMD for health risks, or that alternative mitigation measures reduce health risks below any other City-adopted threshold of significance, such filtration shall not be required.
>
> **Significance after Mitigation:** Less than Significant.

Impact AIR-11: Implementation of the Specific Plan would locate new sensitive receptors near sources of $PM_{2.5}$ which may lead to cumulatively considerable adverse health effects. (Less than Significant)

Major sources of $PM_{2.5}$ in the Plan area include Caltrain locomotives as well as vehicle traffic traveling along roadways within the project area. As discussed under Impact AIR-8, annual average $PM_{2.5}$ concentrations associated with Caltrain operations at the maximally exposed individual level would be approximately 0.18 $\mu g/m^3$ (micrograms per cubic meter). Annual average $PM_{2.5}$ concentrations from vehicle traffic on El Camino Real estimated in Impact AIR-6 would be approximately 0.48 $\mu g/m^3$ at the maximally exposed individual. Therefore, it can be assumed that cumulative concentrations in the project area, without mitigation, would be approximately 0.66 $\mu g/m^3$ which would not exceed the BAAQMD recommended threshold of 0.8 $\mu g/m^3$; therefore, cumulative impacts would be less than significant. With implementation of Mitigation Measures AIR-5 and AIR-7, cumulative concentrations would be approximately 0.10 $\mu g/m^3$, which is considerably less than the cumulative threshold of 0.8 $\mu g/m^3$.

Mitigation: None required.

4.3 Biological Resources

This chapter identifies the existing biological resources within the study area; reviews the federal, state, and local regulations pertaining to biological resources within the region; describes project-related impacts to those biological resources; and outlines mitigation measures to reduce potentially significant impacts to less-than-significant levels. Information used in the preparation of this section was obtained from existing biological reports, the California Department of Fish and Game's California Natural Diversity Database,[1] California Native Plant Society Electronic Inventory,[2] U.S. Fish and Wildlife Service's *Official List of Federal Endangered and Threatened Species*,[3] reconnaissance-level field surveys, and standard biological literature.

A field survey of the Plan area was conducted by an ESA biologist on July 24, 2009 to identify biological resources within the Plan area as well as potential habitat for special-status species.

4.3.1 Environmental Setting

Regional Setting

The Plan area is located in the City of Menlo Park on the east side of the San Francisco Peninsula, approximately two miles west of San Francisco Bay. Much of the natural habitat on the San Francisco Peninsula, including Menlo Park, has been converted or fragmented due to urban development. This is also true for aquatic habitats, which have suffered not only from water quality problems but also from fill for development.

Habitat Types within the Plan Area

The only habitat types found within the Plan area are Urban/Landscaped. San Francisquito Creek and its associated riparian vegetation (Creeks and Riparian habitat) abut the southeastern edge of the project and have been included in this analysis due to potential indirect impacts. Nearby habitats that are not within the Plan area and are therefore not described include Non-native/Ornamental Grasses, Non-native/Ornamental Hardwood/Conifer Mix, and Valley Oak. The Plan area is approximately two miles southwest of Ravenswood Slough and may provide foraging areas for species that inhabit the slough. Habitat classifications are based on the California Wildlife Habitat Relationships System.[4] Habitat types found in the project vicinity are shown in **Figure 4.3-1**.

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1 California Department of Fish and Game, California Natural Diversity Database (CNDDB), Data Request for Mountain View, Palo Alto, Woodside, Newark, Redwood Point, Cupertino, Mindego Hill, La Honda, and San Mateo USGS 7.5-Minute Quadrangles, accessed March 2009.

2 California Native Plant Society (CNPS), Inventory of Rare and Endangered Plants (online edition, v7-06a), Data Request for Mountain View, Palo Alto, Woodside, Newark, Redwood Point, Cupertino, Mindego Hill, La Honda, and San Mateo USGS 7.5-Minute Quadrangles California Native Plant Society. Sacramento, CA, www.cnps.org/inventory, accessed July 22, 2009.

3 U.S. Fish and Wildlife Service (USFWS), Official List of Federal Endangered and Threatened Species that Occur in or may be Affected by Projects in the Mountain View, Palo Alto, Woodside, Newark, Redwood Point, Cupertino, Mindego Hill, La Honda, and San Mateo USGS 7.5-Minute Quadrangles, accessed July 22, 2009.

4 California Department of Fish and Game (CDFG), California Interagency Wildlife Task Group, California Wildlife Habitat Relationships version 8.1 database program. Sacramento, CA, 2005.

Urban/Landscaped

The Plan area is fully developed and occurs in a highly urbanized/landscaped context. Urban, developed areas are dominated by roads, structures, concrete, and asphalt. They provide little wildlife habitat and essentially no habitat for plants other than opportunistic "weedy" species adapted to the built environment or horticultural plants used in landscaping (see discussion below). Wildlife species utilizing urban areas must be able to tolerate disturbances and are typically generalists, capable of utilizing the limited food sources available, such as garbage and horticultural plants and their fruit. Urban wildlife species that may be found in the Menlo Park area include the common crow (*Corvus brachyrhynchos*), northern mockingbird (*Mimus polyglottos*), raccoon (*Procyon lotor*), Norway rat (*Rattus norvegicus*), and Virginia opossum (*Didelphis virginiana*). Exceptions to the generalist rule are red-tailed hawk (*Buteo jamaicensis*), which preys on rodents often found in urban parks, and Cooper's hawk (*Accipiter cooperi*), which preys on small to medium sized birds such as pigeon (*Columba livia*), European starling (*Sturnus vulgaris*), and Brewer's blackbird (*Euphagus cyanocephalus*).

Landscaped vegetation includes manicured lawns, planted ornamental shrubs and trees, and gardens. Tree species found in the Plan area include coast redwood (*Sequoia sempervirens*), coast live oak (*Quercus agrifolia*), London plane tree (*Platanus x acerifolia*), ornamental pear (*Pyrus calleryana*), southern magnolia (*Magnolia grandiflora*), palm trees, and a variety of pine species (*Pinus* sp). Landscaped areas and planted trees can typically provide cover, foraging, and nesting habitat for a variety of bird species, especially those that are tolerant of disturbance and human presence. Birds commonly found in such areas include the house finch (*Carpodacus mexicanus*), dark-eyed junco (*Junco hyemalis*), western scrub jay (*Aphelocoma californica*), and Anna's hummingbird (*Calypte anna*).

Creeks and Riparian

The Plan area is bounded on the northwest by Atherton Channel (also referred to as Atherton Creek) and the southeast by San Francisquito Creek. Both of these creeks run perpendicular to El Camino Real and eventually drain into the southern San Francisco Bay. Atherton Channel begins in Woodside, south of I-280, and exists mostly as engineered channels and storm drains as it passes through Menlo Park. Only small reaches of its headwaters exist as open channels.

San Francisquito Creek is a perennial creek that begins at the outlet of the Searsville Reservoir and is predominantly open and unmodified, except for the lower-most reach. Vegetation found within the San Francisquito Creek riparian zone includes coast live oak, California boxelder (*Acer negundo var.californicum*), cotoneaster (*Cotoneaster pannosus*), elderberry (*Sambucus mexicana*), Fremont cottonwood (*Populus fremontii*), tree of heaven (*Ailanthus altissima*), and black walnut (*Juglans nigra*). San Francisquito Creek has been designated as critical habitat for the Central California Coast steelhead (*Oncorhynchus mykiss irideus*). In addition to functioning as a critical migration corridor for steelhead, it may also function as a movement corridor for other wildlife species, such as western pond turtles, raccoons, and bats.

SOURCE: CDF, 2005; NAIP, 2005; NWI, 2003; NOAA, 2005; Sowers and Thompson, 2005

Menlo Park El Camino Real/Downtown Specific Plan EIR. 208581

Figure 4.3-1
Habitats in Project Vicinity

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Special-Status Species

A number of species with the potential to occur at the Plan area are protected pursuant to federal and/or State endangered species laws. In addition, Section 15380(b) of the California Environmental Quality Act (CEQA) Guidelines provides a definition of rare, endangered or threatened species that are not included in any listing.[5] Species recognized under these terms are collectively referred to as "special-status species." For the purposes of this EIR, special-status species include:

- Plant and wildlife species listed as rare, threatened or endangered under the federal or State endangered species acts;
- Species that are candidates for listing under either federal or State law;
- Species formerly designated by U.S. Fish and Wildlife Service as Species of Concern or by California Department of Fish and Game as Species of Special Concern;
- Animals listed as "fully protected" in the Fish and Game Code of California (Sections 3511, 4700, 5050, and 5515);[6]
- Raptors (birds of prey), which are specifically protected by Fish and Game Code Section 3503.5, which prohibits the take, possession, or killing of raptors and owls, their nests, and their eggs;[7]
- Species such as candidate species[8] that may be considered rare or endangered pursuant to Section 15380(b) of the CEQA Guidelines.

Table 4.3-1 provides a comprehensive list of the special-status species that have been documented within or have the potential to occur in the vicinity of the Plan area. This list was obtained using information from the California Natural Diversity Database, California Native Plant Society Electronic Inventory, and the U.S. Fish and Wildlife Service. **Figure 4.3-2** maps occurrences of special-status species that have been documented in the California Natural Diversity Database within the project vicinity. Based on a review of the biological literature of the region, previous documents, and reconnaissance-level surveys of the Plan area, all of these species except six were eliminated from further evaluation because: (1) the Plan area and/or the vicinity does not provide suitable habitat; or (2) the known range for a particular species is outside of the Planning Area and/or the

5 For example, Section 15380(b) includes vascular plants listed by the California Native Plant Society as rare or endangered or as List 1 or 2; List 1A are plants resumed extinct in California, List 1B are plants that are rare, threatened or endangered in California and elsewhere, and List 2 are plants that are rare, threatened or endangered in California but more common elsewhere.

6 These sections prohibit the "take or possession" of designated species, except for scientific research (or for livestock protection, in the case of bird relocation). The "fully protected" designation, dating from the 1960s, before enactment of the federal or state endangered species acts, was California's earliest effort to identify and protect rare animals and those possibly facing extinction. Most "fully protected" species have also subsequently been listed as threatened or endangered species under endangered species laws and regulations. About three dozen species are "fully protected."

7 The inclusion of birds protected by Fish & Game Code Section 3503.5 is in recognition of the fact that these birds are substantially less common in California than most other birds, having lost much of their habitat to development, and the recognition that the populations of these species are therefore substantially more vulnerable to further loss of habitat and to interference with nesting and breeding than are most other birds. It is noted that a number of raptors and owls are already specifically listed as threatened or endangered by state and federal wildlife authorities.

8 The term "candidate species" is defined within Section 4.3.2 Regulatory Setting under the California Endangered Species Act section.

TABLE 4.3-1
SPECIAL-STATUS SPECIES CONSIDERED IN EVALUATION OF PLAN AREA

Species name Scientific name	Status Federal/State/ CNPS	Habitat	Potential to occur in Plan area
		LISTED SPECIES	
Plants			
San Mateo thorn-mint *Acanthomintha duttonii*	FE/CE/1B.1	Found in open areas in chaparral, valley and foothill grassland, and coastal scrub. Extant populations only known from uncommon serpentinite vertisol clay soils. 50-200m.	**Low.** Suitable habitat is not found on site.
Crystal Springs fountain thistle *Cirsium fontinale* var. *fontinale*	FE/CE/1B.1	Serpentine seeps in valley and foothill grasslands and chaparral. 90-180m.	**Low.** Suitable habitat is not found on site.
San Mateo woolly sunflower *Eriophyllum latilobum*	FE/CE/1B.3	Cismontane woodland, often on roadcuts; found on and off of serpentine. 45-150m.	**Low.** Suitable habitat is not found on site.
Contra Costa goldfields *Lasthenia conjugens*	FE/--/1B.1	Valley and foothill grassland, vernal pools, cismontane woodland. Found in pools, swales, and low depressions. 1-445m.	**Low.** Suitable habitat is not found on site.
White-rayed pentachaeta *Pentachaeta bellidiflora*	FE/CE/1B.1	Open dry rocky slopes and valley and foothill grasslands. It is often on soils derived from serpentine bedrock. 35-620m.	**Low.** Suitable habitat is not found on site.
California seablite *Suaeda californica*	FE/--/1B.1	Marshes and swamps including margins of coastal salt marshes. 0-5m.	**Low.** Suitable habitat is not found on site.
Invertebrates			
Vernal pool fairy shrimp *Brachinecta lynchi*	FT/--	Small, clear-water, sandstone-depression pools and grassy swale, earth slump, or basalt-flow depression ponds.	**Low.** Suitable habitat is not found on site.
San Bruno elfin butterfly *Callophrys mossii bayensis*	FE/--	Coastal, mountainous areas with grassy cover. Colonies are on steep north-facing slopes in fog belt. Larval host plant is *Sedum spathulifolium*.	**Low.** Suitable habitat is not found on site.
Bay checkerspot butterfly *Euphydryas editha bayensis*	FT/--	Native grasslands on outcrops of serpentine soil. *Plantago erecta* is the primary host plant; *Castilleja densiflorus* ssp. *densiflora* & *C. exserta* are the secondary host plants.	**Low.** Suitable habitat is not found on site.
Mission blue butterfly *Icaricia icarioides missionensis*	FE/--	Grasslands on San Francisco Peninsula. Requires larval host plants: *Lupinus albifrons*, *L. variicolor*, *L. formosus*.	**Low.** Suitable habitat is not found on site.
Vernal pool tadpole shrimp *Lepidurus packardi*	FE/--	Vernal pools and swales with grass bottoms.	**Low.** Suitable habitat is not found on site.
Myrtle's silverspot *Speyeria zerene myrtleae*	FE/--	Foggy, coastal dunes/hills of the Point Reyes peninsula; extirpated from coastal San Mateo Co. Larval foodplant thought to be *Viola adunca*.	**Low.** Suitable habitat is not found on site.
Fish			
Steelhead - central California coast ESU *Oncorhynchus mykiss irideus*	FT/--	From Russian River, south to Soquel Creek & to, but not including, Pajaro River. Also San Francisco & San Pablo Bay basins.	**High.** Known to occur in San Francisquito Creek.

TABLE 4.3-1 (Continued)
SPECIAL-STATUS SPECIES CONSIDERED IN EVALUATION OF PLAN AREA

Species name Scientific name	Status Federal/State/ CNPS	Habitat	Potential to occur in Plan area
		LISTED SPECIES (cont.)	
Amphibians and Reptiles			
California tiger salamander *Ambystoma californiense*	FT/CSC	Needs underground refuges, especially ground squirrel burrows & vernal pools or other seasonal water sources for breeding.	**Moderate.** No upland habitat on site, although there is a 2002 CNDDB record from San Francisquito Creek, immediately south of the Plan area (CDFG, 2009).
California red-legged frog *Rana draytonii*	FT/CSC	Lowlands & foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation. Requires 11-20 weeks of permanent water for larval development and must have access to estivation habitat.	**Moderate.** Lacks upland habitat but may occur in San Francisquito Creek; documented occurrences upstream.
San Francisco garter snake *Thamnophis sirtalis tetrataenia*	FE/CE,CFP	Upland areas near freshwater marshes, ponds and slow moving streams. Prefers dense cover & water depths of at least one foot.	**Low.** Suitable habitat is not found on site.
Birds			
Western snowy plover *Charadrius alexandrinus nivosus*	FT/CSC	Sandy beaches, salt pond levees & shores of large alkali lakes. Needs sandy, gravelly or friable soils for nesting.	**Low.** Suitable habitat is not found on site.
White-tailed kite *Elanus leucurus*	--/CFP	Rolling foothills and valley margins with scattered oaks & river bottomlands or marshes next to deciduous woodland. Open grasslands, meadows, or marshes for foraging, close to isolated, dense-topped trees for nesting and perching.	**Low.** Suitable habitat is not found on site.
American peregrine falcon *Falco peregrinus anatum*	Delisted/CE, CFP	Found near wetlands, lakes, rivers, on cliffs, banks, dunes, mounds, and human-made structures.	**Low.** Suitable habitat is not found on site.
California black rail *Laterallus jamaicensis coturniculus*	--/CT,CFP	Freshwater marshes, wet meadows, and saltwater marshes bordering larger bays. Needs water depths of about 1 inch that does not fluctuate during the year, dense vegetation for nesting habitat.	**Low.** Suitable habitat is not found on site.
California brown pelican *Pelecanus occidentalis californicus*	FE/CE	Colonial nester on coastal islands.	**Low.** Suitable habitat not found on site.
Bank swallow *Riparia riparia*	--/CT	Colonial nester, primarily in riparian and other lowland habitats near water. Requires vertical banks/cliffs with fine-textured/sandy soils to dig nests.	**Low.** Suitable habitat is not found on site.
California clapper rail *Rallus longirostris obsoletus*	FE/CE,CFP	Salt-water & brackish marshes in the vicinity of San Francisco Bay. Associated with pickleweed, but feeds away from cover on invertebrates from mud-bottomed sloughs.	**Low.** Suitable habitat is not found on site.
California least tern *Sternula antillarum browni*	FE/CE,CFP	Nests along the coast. Colonial breeder on bare or sparsely vegetated, flat substrates: sand beaches, alkali flats, landfills, or paved areas.	**Low.** Suitable habitat is not found on site.

TABLE 4.3-1 (Continued)
SPECIAL-STATUS SPECIES CONSIDERED IN EVALUATION OF PLAN AREA

Species name Scientific name	Status Federal/State/ CNPS	Habitat	Potential to occur in Plan area
		LISTED SPECIES (cont.)	
Mammals			
Salt-marsh harvest mouse *Reithrodontomys raviventris*	FE/CE,CFP	Saline emergent wetlands with pickleweed. Requires higher areas for flood escape.	**Low.** Suitable habitat is not found on site.
		OTHER SPECIAL-STATUS SPECIES	
Plants			
Franciscan onion *Allium peninsulare* var. *franciscanum*	--/--/1B.2	Clay and serpentine soils and dry hillsides in cismontane woodland, valley and foothill grassland. 100-300m.	**Low.** Suitable habitat is not found on site.
Bent-flowered fiddleneck *Amsinckia lunaris*	--/--/1B.2	Cismontane woodland, valley and foothill grassland. 50-500m.	**Low.** Suitable habitat is not found on site.
Anderson's manzanita *Arctostaphylos andersonii*	--/--/1B.2	Open sites in broadleaved upland forest, chaparral, north coast coniferous forest, redwood forest. 180-800m.	**Low.** Suitable habitat is not found on site.
Montara manzanita *Arctostaphylos montaraensis*	--/--/1B.2	Maritime chaparral and coastal scrub. 150-500m	**Low.** Suitable habitat is not found on site.
Kings Mountain manzanita *Arctostaphylos regismontana*	--/--/1B.2	Granitic or sandstone outcrops in broadleaved upland forest, chaparral, north coast coniferous forest. 305-730m.	**Low.** Suitable habitat is not found on site.
Coastal marsh milk-vetch *Astragalus pycnostachyus* var. *pycnostachyus*	--/--/1B.2	Mesic sites in coastal dunes, coastal salt marshes. 0-30m.	**Low.** Suitable habitat is not found on site.
Alkali milk-vetch *Astragalus tener* var*. tener*	--/--/1B.2	Alkali playa, valley and foothill grasslands, vernal pools. 1-170m.	**Low.** Suitable habitat is not found on site.
San Joaquin spearscale *Atriplex joaquiniana*	--/--/1B.2	Chenopod scrub, alkali meadow, wetlands, and sink scrub, valley and foothill grassland. Found with *Distichlis spicata*, *Frankenia,* etc. 1-250m.	**Low.** Suitable habitat is not found on site.
Round-leaved filaree *California macrophylla*	--/--/1B.1	Cismontane woodland, valley and foothill grassland on clay soils. 15-1200m.	**Low.** Suitable habitat is not found on site.
Congdon's tarplant *Centromadia parryi* ssp. *Congdonii*	--/--/1B.2	Heavy white clay or alkaline soils in valley and foothill grassland. 1-230m.	**Low.** Suitable habitat is not found on site.
San Francisco Bay spineflower *Chorizanthe cuspidata* var. *cuspidate*	--/--/1B.2	Sandy soil on terraces and slopes in coastal bluff scrub, coastal dunes, coastal prairie, coastal scrub. 5-550m.	**Low.** Suitable habitat is not found on site.
Lost thistle *Cirsium praeteriens*	--/--/1A	Collected from the Palo Alto area at the turn of the 20th century. Not seen since 1901. 0-100m.	**Low.** Suitable habitat is not found on site.
San Francisco collinsia *Collinsia multicolor*	--/--/1B.2	Decomposed shale (mudstone) mixed with humus in closed-cone coniferous forest, coastal scrub. 30-250m.	**Low.** Suitable habitat is not found on site.
Point Reyes bird's-beak *Cordylanthus maritimus* ssp. *Palustris*	--/--/1B.2	Coastal salt marsh with *Salicornia*, *Distichlis*, *Jaumea*, *Spartina*. 0-15m.	**Low.** Suitable habitat is not found on site.

TABLE 4.3-1 (Continued)
SPECIAL-STATUS SPECIES CONSIDERED IN EVALUATION OF PLAN AREA

Species name Scientific name	Status Federal/State/ CNPS	Habitat	Potential to occur in Plan area
OTHER SPECIAL-STATUS SPECIES (cont.)			
Plants (cont.)			
Ben Lomond buckwheat *Eriogonum nudum* var. *decurrens*	--/--/1B.1	Chaparral, cismontane woodland, lower montane coniferous forest. 50-800 m.	**Low.** Suitable habitat is not found on site.
Hoover's button-celery *Eryngium aristulatum* var. *hooveri*	--/--/1B.1	Alkaline depressions, vernal pools, roadside ditches and other wet places near the coast. 5-45m.	**Low.** Suitable habitat is not found on site.
Hillsborough chocolate lily *Fritillaria biflora var. ineziana*	--/--/1B.1	Cismontane woodland, valley and foothill grassland, often on serpentine soils. 90-160m.	**Low.** Suitable habitat is not found on site.
Fragrant fritillary *Fritillaria liliacea*	--/--/1B.2	Coastal scrub, valley and foothill grassland, coastal prairie. Frequently clay and serpentine soils. 3-410m.	**Low.** Suitable habitat is not found on site.
Short-leaved evax *Hesperevax sparsiflora* var. *brevifolia*	--/--/1B.2	Sandy bluffs and flats in coastal bluff scrub, coastal dunes. 0-200m.	**Low.** Suitable habitat is not found on site.
Loma Prieta hoita *Hoita strobilina*	--/--/1B.1	Serpentine, mesic sites in chaparral, cismontane and riparian woodland.	**Low.** Suitable habitat is not found on site.
Legenere *Legenere limosa*	--/--/1B.1	Vernal pools. 1-880m.	**Low.** Suitable habitat is not found on site.
Crystal Springs lessingia *Lessingia arachnoidea*	--/--/1B.2	Coastal sage scrub, valley and foothill grassland, cismontane woodland. 60-200m.	**Low.** Suitable habitat is not found on site.
Coast lily *Lilium maritimum*	--/--/1B.1	Broadleaved upland forest, closed-cone coniferous forest, coastal prairie, coastal scrub, freshwater marshes and swamps, north coast coniferous forest. 5-475m.	**Low.** Suitable habitat is not found on site.
Arcuate bush-mallow *Malacothamnus arcuatus*	--/--/1B.2	Gravelly alluvial soils in chaparral. 80-355m.	**Low.** Suitable habitat is not found on site.
Davidson's bush-mallow *Malacothamnus davidsonii*	--/--/1B.2	Sandy washes in coastal scrub, riparian woodland, chaparral. 180-855m.	**Low.** Suitable habitat is not found on site.
Hall's bush-mallow *Malacothamnus hallii*	--/--/1B.2	Chaparral. Sometimes on serpentine. 10-550m.	**Low.** Suitable habitat is not found on site.
Pincushion navarretia *Navarretia myersii* ssp. *myersii*	--/--/1B.1	Vernal pools, often on acidic soil. 20-330m.	**Low.** Suitable habitat is not found on site.
Dudley's lousewort *Pedicularis dudleyi*	--/CR/1B.2	Chaparral, north coast coniferous forest, valley and foothill grasslands. 100-490m.	**Low.** Suitable habitat is not found on site.
White-flowered rein orchid *Piperia candida*	--/--/1B.2	North coast coniferous forest, lower montane coniferous forest, broadleafed upland forest. 0-1200m.	**Low.** Suitable habitat is not found on site.
Choris' popcorn-flower *Plagiobothrys chorisianus* var. *chorisianus*	--/--/1B.2	Mesic sites in chaparral, coastal scrub, coastal prairie. 15-100m.	**Low.** Suitable habitat is not found on site.
Hairless popcorn-flower *Plagiobothrys glaber*	--/--/1A	Alkaline meadows and seeps, coastal salt marshes and swamps. 5-180m.	**Low.** Suitable habitat is not found on site.
Oregon polemonium *Polemonium carneum*	--/--/2.2	Coastal prairie, coastal scrub, lower montane coniferous forest. 0-1830m.	**Low.** Suitable habitat is not found on site.

TABLE 4.3-1 (Continued)
SPECIAL-STATUS SPECIES CONSIDERED IN EVALUATION OF PLAN AREA

Species name Scientific name	Status Federal/State/ CNPS	Habitat	Potential to occur in Plan area
OTHER SPECIAL-STATUS SPECIES (cont.)			
Plants (cont.)			
Slender-leaved pondweed *Potamogeton filiformis*	--/--/2.2	Marshes and swamps, shallow, clear water of lakes and drainage channels. 15-2310m.	**Low.** Suitable habitat is not found on site.
Caper-fruited tropidocarpum *Tropidocarpum capparideum*	--/--/1B.1	Alkaline clay soils in valley and foothill grassland. 0-455m.	**Low.** Suitable habitat is not found on site.
Robust monardella *Monardella villosa* ssp.*globosa*	--/--/1B.2	Openings in broadleaved upland forest, chaparral, cismontane woodland, valley and foothill grassland. 30-300m.	**Low.** Suitable habitat is not found on site.
San Francisco campion *Silene verecunda* ssp. *Verecunda*	--/--/1B.2	Coastal scrub, valley and foothill grassland, coastal bluff scrub, chaparral, coastal prairie. Often on mudstone or shale. 30-645m.	**Low.** Suitable habitat is not found on site.
Saline clover *Trifolium depauperatum v*ar. *hydrophilum*	--/--/1B.2	Mesic, alkaline sites in marshes and swamps, valley and foothill grassland, vernal pools. 0-300m.	**Low.** Suitable habitat is not found on site.
San Francisco owl's-clover *Triphysaria floribunda*	--/--/1B.2	Coastal prairie, valley and foothill grassland. 10-160m.	**Low.** Suitable habitat is not found on site.
Invertebrates			
Edgewood blind harvestman *Calicina minor*	--/*	Found on the underside of moist serpentine rocks near permanent springs.	**Low.** Suitable habitat is not found on site.
Monarch butterfly *Danaus plexippus*	--/*	Winter roost sites extend along the coast from northern Mendocino to Baja California, Mexico. Roosts located in wind-protected tree groves (eucalyptus, Monterey pine, cypress), with nectar and water sources nearby.	**Low.** Suitable habitat is not found on site.
Ricksecker's water scavenger beetle *Hydrochara ricksecker*i	--/*	Aquatic.	**Low.** Suitable habitat is not found on site.
San Francisco forktail damselfly *Ischnura gemina*	--/*	Found in small, marshy ponds and ditches with emergent and floating aquatic vegetation.	**Low.** Suitable habitat is not found on site.
Edgewood Park micro-blind harvestman *Microcina edgewoodensis*	--/*	Found beneath serpentine rocks in xeric grassland adjacent to scrub oaks.	**Low.** Suitable habitat is not found on site.
Unsilvered fritillary *Speyeria adiaste adiaste*	--/*	Openings in redwood and coniferous forests, oak woodlands, chaparral.	**Low.** Suitable habitat is not found on site.
Mimic tryonia (=California brackishwater snail) *Tryonia imitator*	--/*	Coastal lagoons, estuaries and salt marshes. Found only in permanently submerged areas; able to withstand a wide range of salinities.	**Low.** Suitable habitat is not found on site.
Amphibians and Reptiles			
Western pond turtle *Actinemys marmorata*	--/CSC	Aquatic, found in ponds, marshes, rivers, streams, irrigation ditches with aquatic vegetation. Needs basking sites and upland habitat for egg-laying (sandy banks or grassy open fields).	**Moderate.** May be present in San Francisquito Creek.

TABLE 4.3-1 (Continued)
SPECIAL-STATUS SPECIES CONSIDERED IN EVALUATION OF PLAN AREA

Species name Scientific name	Status Federal/State/ CNPS	Habitat	Potential to occur in Plan area
OTHER SPECIAL-STATUS SPECIES (cont.)			
Amphibians and Reptiles (cont.)			
Foothill yellow-legged frog *Rana boylii*	--/CSC	Partly shaded, shallow streams and riffles with cobble-sized rocky substrate. Needs 15 weeks of submersion for metamorphosis.	**Low.** No recent records in the Plan area or Vicinity (CDFG, 2009).
Birds			
Cooper's hawk *Accipiter cooperii*	--/* (nesting)	Open, marginal woodlands. Nests in riparian trees.	**Moderate.** Known to nest and hunt in urban areas.
Tricolored blackbird *Agelaius tricolor*	--/CSC	Colonial species, requires open water, protected nesting substrate, insect prey.	**Low.** Suitable habitat is not found on site.
Great blue heron *Ardea herodias*	--/* (rookery)	Colonial nester in tall trees, cliff sides, and sequestered spots on marshes. Rookery sites are in close to foraging areas: marshes, lake margins, tide-flats, rivers, streams, wet meadows.	**Low.** Suitable habitat is not found on site.
Short-eared owl *Asio flammeus*	--/CSC	Found in swamp lands, both fresh and salt; lowland meadows; irrigated alfalfa fields. Tule patches/tall grass needed for nesting/daytime seclusion. Nests on dry ground in depression concealed in vegetation.	**Low.** Suitable habitat is not found on site.
Long-eared owl *Asio otus*	--/CSC	Riparian areas with tall trees near streams. Requires adjacent open areas with rodents and old corvid and raptor nests for breeding	**Low.** Suitable habitat is not found on site.
Burrowing owl *Athene cunicularia*	--/CSC	Open, dry annual or perennial grasslands, deserts & scrublands with low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, especially the California ground squirrel.	**Low.** Suitable habitat is not found on site.
Northern harrier *Circus cyaneus*	--/CSC	Coastal salt & fresh-water marsh. Nests & forages in grasslands.	**Low.** Suitable habitat is not found on site.
Snowy egret *Egretta thula*	--/* (rookery)	Colonial nester in dense tules. Rookery sites situated close to foraging areas: marshes, tidal-flats, streams, wet meadows, and borders of lakes.	**Low.** Suitable habitat is not found on site.
Saltmarsh common yellowthroat *Geothlypis trichas sinuosa*	--/CSC	Fresh and salt water marshes. Requires thick, continuous cover down to water surface for foraging; tall grasses, tule patches, willows for nesting.	**Low.** Suitable habitat is not found on site.
Alameda song sparrow *Melospiza melodia pusillula*	--/CSC	Salt marshes bordering south arm of San Francisco Bay. Nests in *Grindelia* and *Salicornia* bushes that are high enough to escape high tides.	**Low.** Suitable habitat is not found on site.
Black-crowned night heron *Nycticorax nycticorax*	--/* (rookery)	Colonial nester, usually in trees, occasionally in tule patches. Rookery sites located close to foraging areas: lake margins, mud-bordered bays, marshy spots.	**Low.** Suitable habitat is not found on site.
Double-crested cormorant *Phalacrocorax auritus*	--/* (rookery)	Colonial nester on coastal cliffs, offshore islands, & along lake margins in the interior of the state. Nests on ground with sloping surface, or in tall trees.	**Low.** Suitable habitat is not found on site.

TABLE 4.3-1 (Continued)
SPECIAL-STATUS SPECIES CONSIDERED IN EVALUATION OF PLAN AREA

Species name Scientific name	Status Federal/State/ CNPS	Habitat	Potential to occur in Plan area
OTHER SPECIAL-STATUS SPECIES (cont.)			
Mammals			
Pallid bat *Antrozous pallidus*	--/CSC	Deserts, grasslands, shrublands, woodlands & forests. Most common in open, dry habitats with rocky areas for roosting. Roosts must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.	**Moderate.** May roost in structures on site.
San Francisco dusky-footed woodrat *Neotoma fuscipes annectens*	--/CSC	Forest habitats of moderate canopy & moderate to dense understory. May prefer chaparral & redwood habitats. May be limited by availability of nest-building materials (shredded grass, leaves, twigs).	**Low.** Suitable habitat is not found on site.
Salt-marsh wandering shrew *Sorex vagrans halicoetes*	--/CSC	Salt marshes of the south arm of San Francisco Bay. Medium high marsh 6-8 ft above sea level where abundant driftwood is scattered among *Salicornia*.	**Low.** Suitable habitat is not found on site.
Santa Cruz kangaroo rat *Dipodomys venustus venustus*	--/*	Silverleaf manzanita mixed chaparral in the zayante sand hills ecosystem of the santa cruz mountains. Needs soft, well-drained sand.	**Low.** Suitable habitat is not found on site.
American badger *Taxidea taxus*	--/CSC	Drier open stages of shrub, forest, and herbaceous habitats. Digs burrows and preys on other burrowing rodents.	**Low.** Suitable habitat is not found on site.

STATUS CODES

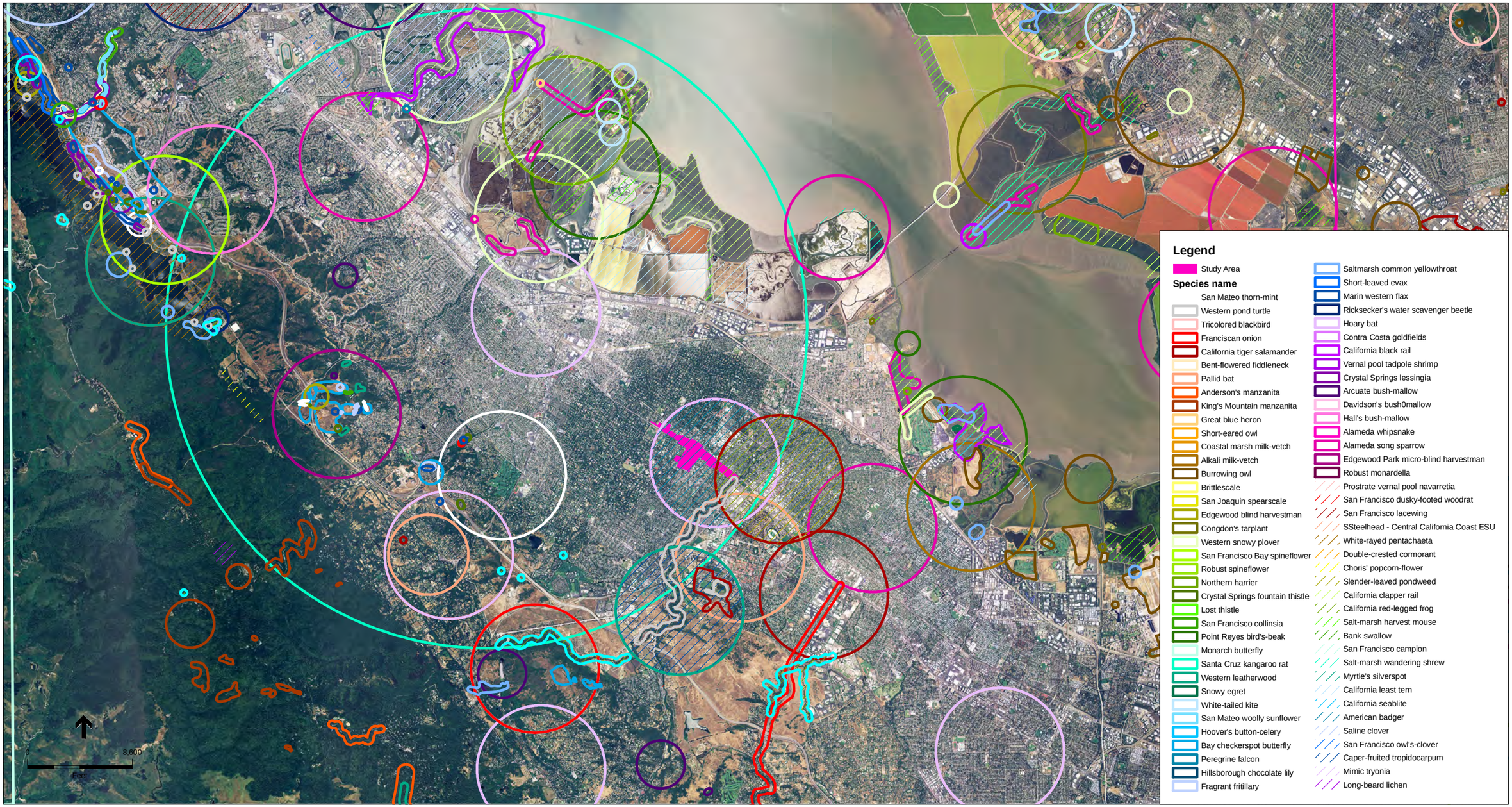
Federal (U.S. Fish and Wildlife Service [USFWS]):
FE = Listed as Endangered (in danger of extinction) by the federal government.
FT = Listed as Threatened (likely to become Endangered within the foreseeable future) by the federal government.
FP = Proposed for Listing as Endangered or Threatened.
FC = Candidate to become a *proposed* species.
FSC = Former Federal Species of Concern. The USFWS no longer lists Species of Concern but recommends addressing species considered to be at potential risk by a number of organizations and agencies during project environmental review. *NMFS still lists Species of Concern.

State (California Department of Fish and Game [CDFG]):
CE = Listed as Endangered by the State of California.
CT = Listed as Threatened by the State of California.
CR = Listed as Rare by the State of California (plants only).
CSC = California Species of Special Concern.
CFP = Fully Protected
3503.5 = Protection for nesting species of Falconiformes (hawks) and Strigiformes (owls).
*Special animal—listed on CDFG's Special Animals List.

California Native Plant Society (CNPS):
List 1A = Plants presumed extinct in California.
List 1B = Plants rare, Threatened, or Endangered in California and elsewhere.
List 2= Plants rare, Threatened, or Endangered in California but more common elsewhere.

An extension reflecting the level of threat to each species is appended to each rarity category as follows:
.1 – Seriously endangered in California.
.2 – Fairly endangered in California.
.3 – Not very endangered in California.

SOURCES:
California Department of Fish and Game (CDFG), California Interagency Wildlife Task Group, California Wildlife Habitat Relationships version 8.1 database program. Sacramento, CA, 2005.
California Department of Fish and Game, California Natural Diversity Database (CNDDB), Data Request for Mountain View, Palo Alto, Woodside, Newark, Redwood Point, Cupertino, Mindego Hill, La Honda, and San Mateo USGS 7.5-Minute Quadrangles, accessed March 2009.
California Native Plant Society (CNPS), Inventory of Rare and Endangered Plants (online edition, v7-06a), Data Request for Mountain View, Palo Alto, Woodside, Newark, Redwood Point, Cupertino, Mindego Hill, La Honda, and San Mateo USGS 7.5-Minute Quadrangles California Native Plant Society. Sacramento, CA, www.cnps.org/inventory, accessed July 22, 2009.
U.S. Environmental Protection Agency, (EPA), Army Corps Issue Joint Guidance to Sustain Wetlands Protection under Supreme Court Decision. Press Release, http://yosemite.epa.gov/opa/admpress.nsf/e87e8bc7fd0c11f1852572a000650c05/e7240f5d30236d2b852572f1005e1809!OpenDocument, accessed May 2008, published June 5, 2007.



SOURCE: CDFG, 2009; NAIP, 2005

Figure 4.3-2
Records of Special-Status Species in the Project Vicinity

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immediate area. The reasoning behind the determination for each species is presented in Table 4.3-1. Species with a low potential are not expected to occur within the Plan area.

Special-Status Plants

No special-status plant species are expected to occur. Although a number of special-status plant species are identified in Table 4.3-1 as potentially present within the Plan area, there are no intact native plant communities extant; therefore, no suitable habitat for these species is present. In addition, the distribution of a number of these species is restricted to specific habitat types or soils that are not, and/or never were, present within the Plan area, such as vernal pools or serpentine soils.

Special-Status Animals

San Francisquito Creek may provide habitat for the California tiger salamander, California red-legged frog and the western pond turtle, although the tiger salamander was rated "low" in occurrence potential in Table 4.3-1. They are included because of the proximity of the creek to the Project and the tendency of these salamanders to move into adjacent uplands. Cooper's hawks may nest and forage in the urban setting, and are exposed to impacts. One special-status bat species potentially impacted is identified in Table 4.3-1: the pallid bat. Also, steelhead trout are known to occur in San Francisquito Creek on the south edge of the Plan area.

More detail on these species follows.

California red legged frog (*Rana draytonii*). The California red-legged frog is a federally Threatened species and a California Species of Special Concern. California red-legged frogs typically occur in perennial streams with deep pools and stands of overhanging willows and an intermixed fringe of cattails. However, California red-legged frogs also have been found in ephemeral creeks and drainages and in ponds that may or may not have riparian vegetation. During winter rain events, juvenile and adult California red-legged frogs are known to disperse up to 1 to 2 kilometers (0.6 to 1.2 miles).[9] There are documented occurrences approximately 3.3 miles upstream of the Plan area along San Francisquito Creek (California Natural Diversity Database, 2003), and approximately 2.3 miles upstream of the Plan area along Atherton Channel (date unknown). Although there is no suitable terrestrial habitat in the Plan area, California red-legged frogs may be found in San Francisquito Creek.

California tiger salamander (*Ambystoma californiense*). The California tiger salamander is listed under the federal Endangered Species Act and is a candidate for listing under the California Endangered Species Act. It is a large terrestrial salamander with a broad, rounded snout. They are around 7-8 inches long with white or pale yellow spots on their black skin. The belly is a white to pale yellow. They are restricted to grasslands and low foothills with aquatic sites for breeding, especially ephemeral pools. Larvae require 3-6 months in a submerged aquatic habitat to develop into adults. They also require burrow refuges in upland habitats, such as California ground

[9] Rathburn, G.B., M.R. Jennings, et al., Status and Ecology of Sensitive Aquatic Vertebrates in Lower San Simeon and Pico Creeks, San Luis Obispo County, California. Unpublished report, National Ecology Research Center, Piedras Blancas Research Station, San Simeon, California, under Cooperative Agreement (14-16-0009-91-1909), 1993.

squirrel burrows. They are threatened by habitat loss, fragmentation, nonnative predators, diseases, rodent control, hybridization with closely related introduced species, and vehicles.[10] Although the Plan area is not considered high quality habitat for the tiger salamander, the California Natural Diversity Database reports a sighting in San Francisquito Creek in 2002, which may have occurred at the edge of the Plan area.[11]

Central California Coast steelhead trout (*Onchorynchus mykiss*). Steelhead from the Central California Coast Distinct Population Segment is listed as Threatened under federal Endangered Species Act. Steelhead requires cold-water streams with adequate dissolved oxygen as well as gravelly substrates for spawning. Steelhead possesses the ability to spawn repeatedly, returning to the Pacific Ocean after spawning in freshwater. Juvenile steelhead may spend up to four years residing in freshwater prior to migrating to the ocean as smelts. Adults migrate upstream between December and March and the juveniles migrate downstream in late winter and spring. They are threatened by habitat loss, water impoundments, diversions, and water pollution.

Cooper's hawk *(Accipiter cooperii)*. Cooper's hawk is a California Watch List species, protected under section 3503.5 of California Department of Fish and Game code (nesting Falconiformes). Cooper's hawks range over most of North America and may be seen throughout California, most commonly as a winter migrant. Nesting pairs have declined throughout the lower-elevation, more populated parts of the state. Cooper's hawk forages in open woodlands and wooded margins, nesting in tall trees, often in riparian areas. This species is known to nest and hunt in urban areas, and may use the landscaped trees in the proposed Plan area.[12]

Pallid bat (*Antrozous pallidus*). The pallid bat is a California Species of Special Concern and identified by the Western Bat Working Group as High Priority. Pallid bats range throughout western North America, from British Columbia to Mexico and east to Texas. This species is most abundant in arid lands, including deserts and canyon lands, shrub-steppe grasslands, and higher elevation coniferous forests and is therefore only likely to occur within the Plan area on a transient basis during spring and summer seasonal movements. Pallid bats may roost alone or in groups in trees in cavities or under bark and structures such as bridges and buildings. Pallid bats forage over open areas and are opportunistic feeders on a wide variety of insects, foraging both on surfaces and in the air. Prey includes beetles, centipedes, crickets, moths, and rarely, lizards, and small rodents.[13]

Western pond turtle (*Actinemys marmorata*). This California Species of Special Concern is found in a wide variety of permanent and nearly permanent aquatic habitats throughout California west of the Sierra Cascades. They require basking sites such as partially submerged logs, rocks,

[10] U.S. Fish and Wildlife Service, Official List of Federal Endangered and Threatened Species that Occur in or may be Affected by Projects in the Mountain View, Palo Alto, Woodside, Newark, Redwood Point, Cupertino, Mindego Hill, La Honda, and San Mateo USGS 7.5-Minute Quadrangles, accessed July 22, 2009.

[11] California Department of Fish and Game, California Natural Diversity Database, Data Request for Mountain View, Palo Alto, Woodside, Newark, Redwood Point, Cupertino, Mindego Hill, La Honda, and San Mateo USGS 7.5-Minute Quadrangles, accessed March 2009.

[12] California Department of Fish and Game (CDFG), California Interagency Wildlife Task Group, California Wildlife Habitat Relationships version 8.1 database program. Sacramento, CA, 2005.

[13] Western Bat Working Group (WBWG), Species Accounts: *Antrozous pallidus*, Pallid bat. http://www.wbwg.org/speciesinfo/species_accounts/vespertilonidae/anpa.pdf accessed March 2, 2009, published in 1998 and updated in 2005 (2005b).

floating vegetation, or mud banks. They feed on both aquatic plant material and a variety of aquatic invertebrates, fish, frogs, and carrion. Western pond turtles are consumed by fish, bullfrogs, garter snakes, wading birds, and some mammals. They are brown to blackish with cream to yellow coloring on legs and head. Threats to the western pond turtle include habitat loss and fragmentation due to conversion to farmland, water diversion, and urbanization. They are also subject to overharvesting for food and pets, predation from introduced species (such as the bullfrog), and motor vehicle collisions.[14]

In addition to these species, migratory birds, raptors, and other bat species are considered in the impact analysis due to their unique habitat characteristics and general protections provided by state and federal regulations.

4.3.2 Regulatory Setting

This section briefly describes federal, state, and local regulations, permits, and policies pertaining to biological resources and wetlands as they apply to the Specific Plan.

Special-Status Species

Federal Endangered Species Act

The U.S Fish and Wildlife Service, which has jurisdiction over plants, wildlife, and most freshwater fish, and the National Marine Fisheries Service, which has jurisdiction over anadromous[15] fish, marine fish, and mammals, oversee implementation of the federal Endangered Species Act. Section 7 of the federal Endangered Species Act mandates that all federal agencies consult with the U.S. Fish and Wildlife Service and National Marine Fisheries Service to ensure that federal agencies actions do not jeopardize the continued existence of a listed species or destroy or adversely modify critical habitat for listed species. A federal agency is required to consult with U.S. Fish and Wildlife Service and National Marine Fisheries Service if it determines a "may affect" situation will occur in association with the project.[16] The federal Endangered Species Act prohibits the "take"[17] of any fish or wildlife species listed as threatened or endangered, including the destruction of habitat that could hinder species recovery.

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14 Ashton, D.T., A.J. Lind, et al., Western pond turtle (*Clemmys marmorata*). Natural History. USDA Forest Service, Pacific Southwest Research Station, available online: http://www.krisweb.com/biblio/gen_usfs_ashtonetal_1997_turtle.pdf, 1997.

15 Anadromous fish are those that spend all or part of their adult life in salt water and return to freshwater streams and rivers to spawn.

16 A determination of "may affect," which equates to any effect, positive, negative, or neutral can be qualified with a determination of 'likely to adversely affect' or 'not likely to adversely affect.' A "may affect and is likely to adversely affect" determination triggers formal consultation with the Fish and Wildlife Service. A determination of "may affect and not likely to adversely affect" can be addressed with informal consultation with the Fish and Wildlife Service.

17 "Take," as defined in Section 9 of the federal Endangered Species Act, is broadly defined to include intentional or accidental "harassment" or "harm" to wildlife. "Harass" is further defined by the U.S. Fish and Wildlife Service as an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, and sheltering. "Harm" is defined as an act which actually kills or injures wildlife. This may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering.

Under Section 9 of the federal Endangered Species Act, the take prohibition applies only to wildlife and fish species. However, Section 9 does prohibit the removal, possession, damage or destruction of any endangered plant from federal land. Section 9 also prohibits acts to remove, cut, dig up, damage, or destroy an endangered plant species in nonfederal areas in knowing violation of any state law or in the course of criminal trespass. Candidate species, and species that are proposed or under petition for listing, receive no protection under Section 9 of the federal Endangered Species Act.

Section 10 of the federal Endangered Species Act requires the issuance of an "incidental take" permit before any public or private action may be taken that would potentially harm, harass, injure, kill, capture, collect, or otherwise hurt (i.e., take) any individual of an Endangered or Threatened species. The permit requires preparation and implementation of a habitat conservation plan that would offset the take of individuals that may occur, incidental to implementation of the project by providing for the overall preservation of the affected species through specific mitigation measures.

California Endangered Species Act

Under the California Endangered Species Act, California Department of Fish and Game has the responsibility for maintaining a list of threatened and endangered species (California Fish and Game Code Section 2070). California Department of Fish and Game also maintains a list of "candidate species," which are species formally noticed as being under review for addition to either the list of endangered species or the list of threatened species. In addition, California Department of Fish and Game maintains lists of "species of special concern," which serve as "watch lists." Pursuant to the requirements of California Endangered Species Act, an agency reviewing a proposed project within its jurisdiction must determine whether any state-listed endangered or threatened species could be present in the Plan area and determine whether the proposed project could have a potentially significant impact on such species. In addition, California Department of Fish and Game encourages informal consultation on any proposed project that may impact a candidate species.

California Native Plant Protection Act

State listing of plant species began in 1977 with the passage of the California Native Plant Protection Act, which directed the California Department of Fish and Game to carry out the legislature's intent to "preserve, protect, and enhance endangered plants in this state." The California Native Plant Protection Act gave the California Fish and Game Commission the power to designate native plants as endangered or rare and to require permits for collecting, transporting, or selling such plants. The California Endangered Species Act expanded upon the original California Native Plant Protection Act and enhanced legal protection for plants. The California Endangered Species Act established threatened and endangered species categories, and grandfathered all rare animals—but not rare plants—into the act as threatened species. Thus, there are three listing categories for plants in California: rare, threatened, and endangered.

Other Regulations Concerning Animal Species

Federal Migratory Bird Treaty Act

The federal Migratory Bird Treaty Act (16 U.S.C., Section 703, Supplement I, 1989) states that without a permit issued by the U.S. Department of the Interior, it is unlawful to pursue, hunt, take, capture, or kill any migratory bird. This act encompasses birds as well as bird nests and eggs.

California Fish and Game Code

Under Section 3503 of the California Fish and Game Code, it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto. Section 3503.5 of the California Fish and Game Code prohibits take, possession, or destruction of any birds in the orders *Falconiformes* (hawks) or *Strigiformes* (owls), or of their nests and eggs.

Fish and Game Code Sections 3511, birds; 4700, mammals; 5050, reptiles and amphibians; and 5515, fish) allows the designation of a species as Fully Protected. This is a greater level of protection than is afforded by the California Endangered Species Act, since such a designation means the listed species cannot be taken at any time.

Bats and other non-game mammals are protected in California. Section 4150 of the Fish and Game Code states that all non-game mammals or parts thereof may not be taken or possessed except as otherwise provided in the code or in accordance with regulations adopted by the commission. Thus, destruction of an occupied, non-breeding, bat roost, resulting in the death of bats, or disturbance that causes the loss of a maternity colony of bats (resulting in the death of young), is prohibited.

Jurisdictional Waters Including Wetlands

Waters of the United States

The term “waters of the United States.” as defined in the Code of Federal Regulations (CFR) (33 CFR Section 328.3[a]; 40 CFR Section 230.3[s]), refers to:

1. All waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;

2. All interstate waters including interstate wetlands;

3. All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation, or destruction of which could affect interstate or foreign commerce including any such waters:

   – which are or could be used by interstate or foreign travelers for recreational or other purposes; or

   – from which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or

– which are used or could be used for industrial purposes by industries in interstate commerce.

4. All impoundments of waters otherwise defined as waters of the U.S. as defined in the Code of Federal Regulations (CFR) (33 CFR Section 328.3[a]; 40 CFR Section 230.3[s]);

5. Tributaries of waters identified in 1. through 4., above;

6. Territorial seas;

7. Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs 1. through 6., above; and

8. Waters of the U.S. do not include prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with EPA (33 CFR 328.3[a][8]).

Wetlands are ecologically productive habitats that support a rich variety of both plant and animal life. The importance of wetlands has increased due to their value as recharge areas and filters for water supplies and to their widespread filling and destruction to enable urban and agricultural development. In a jurisdictional sense, there are two commonly used definitions of a wetland, one definition adopted by the U.S. Army Corps of Engineers and a separate definition, originally developed by U.S. Fish and Wildlife Service, which has been adopted by the agencies in the State of California that have regulatory authority over wetlands. Both definitions are presented below.

Federal Wetland Definition

Wetlands are a subset of "waters of the U.S." and receive protection under the Clean Water Act. Wetlands are defined as those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetland determination under the federal wetland definition adopted by the U.S. Army Corps of Engineers requires the presence of three factors: (1) wetland hydrology, as defined above under point 2; (2) plants adapted to wet conditions; and (3) soils that are routinely wet or flooded [33 CFR Section 328.3(b)]. The Supreme Court of the U.S. ruled in 2001 (January 8, 2001: *Solid Waste Agency of Northwestern Cook County v. United States Army Corps of Engineers et al.*) that certain isolated wetlands do not fall under the jurisdiction of the Clean Water Act. This decision was further clarified in the 2006 Supreme Court case, *Rapanos v. United States, 547 U.S. 715.*

California Wetland Definition

California Department of Fish and Game has adopted the Cowardin *et al*.[18] definition of wetlands. The federal definition of wetlands requires three wetland identification parameters to be met, whereas the Cowardin definition can be satisfied under some circumstances with the presence of only one parameter. Thus, identification of wetlands by California Department of

[18] Cowardin L.M., V. Carter, F.C., Golet, and E.T. LaRoe. 1979. Classification of wetlands and deepwater habitats of the United States. FWS/OBS-79/31. U.S. Fish and Wildlife Service, Office of Biological Services, Washington, D.C.

Fish and Game consists of the union of all areas that are periodically inundated or saturated, or in which at least seasonal dominance by hydrophytes may be documented, or in which hydric soils are present. The California Department of Fish and Game does not normally assert jurisdiction over wetlands unless they are subject to Streambed Alteration Agreements[19] (California Fish and Game Code Sections 1600–1616) or they support state-listed endangered species.

U.S. Army Corps of Engineers and U.S. Environmental Protection Agency (EPA)

The U.S. Army Corps of Engineers and EPA regulate the discharge of dredged or fill material into waters of the U.S. including wetlands, under Sections 404 and 401 of the Clean Water Act. Projects that would result in the placement of dredged or fill material into waters of the U.S. require a Section 404 permit from the U.S. Army Corps of Engineers. Based on the 2001 Supreme Court ruling concerning the Clean Water Act jurisdiction over isolated waters, non-navigable, isolated, intrastate waters based solely on the use of such waters by migratory birds are no longer defined as waters of the U.S. Jurisdiction of non-navigable, isolated, intrastate waters may be possible if their use, degradation, or destruction could affect other waters of the U.S., or interstate or foreign commerce. Jurisdictions of non-navigable, isolated, intrastate waters are analyzed on a case-by-case basis. Impoundments of waters, tributaries of waters, and wetlands adjacent to waters should be analyzed on a case-by-case basis. A more recent Supreme Court case, *Rapanos v. United States* (2006), also questioned the definition of "waters of the U.S." and the scope of federal regulatory jurisdiction over such waters, but left open the question as to whether the Clean Water Act extends to those waters and wetlands that have a 'significant nexus' to navigable waters of the U.S., or whether it is limited to waters with a continuous connection. According to the recent joint guidelines issued by the EPA and U.S Army Corps of Engineers, the Clean Water Act will: 1) Continue to regulate "traditionally navigable waters," including all rivers and other waters that are large enough to be used by boats that transport commerce and any wetlands adjacent to such waters; 2) Continue to regulate "non-navigable tributaries that are relatively permanent and wetlands that are physically connected to these tributaries"; and 3) Continue to regulate other tributaries and adjacent wetlands based on case-by-case determinations of whether or not a significant nexus with a traditionally navigable water exists.[20]

State Policies and Regulations

State regulation of activities in waters and wetlands resides primarily with the California Department of Fish and Game and the State Water Resources Control Board. In addition, the California Coastal Commission has review authority for wetland permits within its planning jurisdiction. California Department of Fish and Game provides comment on U.S Army Corps of Engineers permit actions under the Fish and Wildlife Coordination Act. California Department of

[19] A Streambed Alteration Agreement is a permit for activities that would result in the modification of the bed, bank, or channel of a stream, river, or lake, including water diversion and damming and removal of vegetation from the floodplain to the landward extent of the riparian zone. This permit governs both activities that modify the physical characteristics of the stream and activities that may affect fish and wildlife resource that use the stream and surrounding habitat.

[20] U.S. Environmental Protection Agency, (EPA), Army Corps Issue Joint Guidance to Sustain Wetlands Protection under Supreme Court Decision. Press Release, http://yosemite.epa.gov/opa/admpress.nsf/e87e8bc7fd0c11f1852572a000650c05/e7240f5d30236d2b852572f1005e1809!OpenDocument, accessed May 2008, published June 5, 2007.

Fish and Game is also authorized under the California Fish and Game Code, Sections 1600–1616, to enter into a Streambed Alteration Agreement with applicants and develop mitigation measures when a proposed project would obstruct the flow or alter the bed, channel, or bank of a river or stream in which there is a fish or wildlife resource, including intermittent and ephemeral streams. The State Water Resources Control Board, acting through the nine Regional Water Quality Control Boards, must certify that a U.S. Army Corps of Engineers permit action meets state water quality objectives (Clean Water Act, Section 401).

Local Plans and Policies

Menlo Park General Plan

San Francisquito Creek is considered "open space" according to the Open Space and Conservation Element of the Menlo Park General Plan (City of Menlo Park, 1973).

Open Space and Conservation Goals and Policies applicable to the development of the Planning area are:

- To preserve the wildlife habitat value and natural character of San Francisquito Creek;
- To protect and conserve open space areas rich in wildlife or of a fragile ecological nature;
- Preserve and protect water, water-related areas, wildlife and plant habitat areas to maintain and enhance their open space and conservation purposes;
- Review all plans for future industrial expansion to maintain and enhance air and water resources in accordance with regional standards; and
- Utilize natural riparian lands along San Francisquito Creek wherever possible for paths and trails, and as linear park links in the City-Wide and subregional open space systems.

Menlo Park Heritage Tree Ordinance

Menlo Park Municipal Code Chapter 13.24 establishes regulations for the preservation of heritage trees. Heritage trees are defined as:

- A tree or group of trees of historical significance, special character or community benefit, specifically designated by resolution of the city council;
- An oak tree which is native to California and has a trunk with a circumference of 31.4 inches (diameter of 10 inches) or more, measured at 54 inches above natural grade. Trees with more than one trunk shall be measured at the point where the trunks divide, with the exception of trees that are under 12 feet in height, which will be exempt from this section; and
- All trees other than oaks which have a trunk with a circumference of 47.1 inches (diameter of 15 inches) or more, measured 54 inches above natural grade. Trees with more than one trunk shall be measured at the point where the trunks divide, with the exception of trees that are less than 12 feet in height, which will be exempt from this section.

Any construction activity such as grading, excavation, demolition, or construction, may not threaten the health or viability of any heritage tree. As required by the City's Municipal Code, a tree survey shall be conducted by a certified arborist, and a tree report and map shall be prepared showing the locations of all pertinent trees within a project envelope prior to the initiation of construction activities. Any work performed within an area ten times the diameter of the tree (i.e., the tree protection zone) shall require submittal of a tree protection plan that includes measures identified in the City of Menlo Park's "Tree Protection Specifications" for review and approval of the Community Development Director or his/her designee prior to the issuance of any permit for grading or construction, and shall be prepared by a certified arborist. Removal of heritage trees or pruning more than 25 percent of the roots or branches requires obtaining an appropriate permit from the Director of Public Works. Approvals/denials can be appealed to the Environmental Quality Commission and again to the City Council. Associated guidelines ("Heritage Tree Replacement Procedures") require the planting of replacement trees at a 1:1 basis for residential projects and 2:1 for commercial projects to mitigate the impact of heritage tree removal. The Municipal Code and guidelines apply to both private and public projects.

4.3.3 Impacts and Mitigation Measures

Significance Criteria

Implementation of the Plan would be considered to have significant impacts on biological resources if it would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as threatened, endangered, candidate, sensitive, or special-status species in local or regional plans, policies, regulations or by lists of species of concern from the California Department of Fish and Game, the U.S. Fish and Wildlife Service, or as defined by CEQA Guidelines Section 15380;

- Have a substantial adverse effect on any riparian habitat or other sensitive natural community (e.g., serpentine grassland) identified in local or regional plans, policies, regulations, or lists compiled by California Department of Fish and Game or U.S. Fish and Wildlife Service;

- Have a substantial adverse effect to federally or State protected wetlands (including but not limited to marshes and riparian areas) as defined by Section 404 of the Clean Water Act, or riparian and marsh areas under the jurisdiction of California Department of Fish and Game as defined by California Fish and Game Code 1600–1616;

- Interfere substantially with the movement of any native resident or migratory fish or wildlife species, with established migration or dispersal corridors, or with the use of native wildlife nursery sites;

- Conflict with any local plans or ordinances designed to protect biological resources; or

- Conflict with any applicable habitat conservation plan or natural community plan.

Based on existing site conditions and the established significance criteria, the Specific Plan has the potential to adversely impact special-status birds, special-status bat species, steelhead, as well

as conflict with the local tree ordinance by removing heritage trees. The Plan area does not lie within the planning area for any adopted or proposed habitat conservation or natural community plans; therefore, the last criterion, above, is not applicable.

Specific Plan Standard D.2.01 and Guidelines D.2.30, D.2.45, D.3.22, and D.5.17 would lessen biological resources impacts by protecting existing trees in the Plan area.

Impacts

Special Status Bird Species

Impact BIO-1: The Specific Plan could result in the take of special-status birds or their nests. (Potentially Significant)

The loss of active nests, eggs, or young of any special status species, such as those identified above in Table 4.3-1, would be considered a significant impact. Although this is a highly urbanized, developed area, there is the possibility that Cooper's hawk (*Accipiter cooperi*) may occur in the Plan area, as noted in Table 4.3-1. If active nest sites occur in or adjacent to the Plan area, noise and visual disturbance associated with construction activities occurring during the nesting season may lead to nest abandonment and/or nest failure. The removal of large trees has potential to destroy active nest sites. Destruction of Cooper's hawk nests, or nest of any other raptor or other special-status bird species, would be considered a significant impact under the criteria set forth earlier in this EIR.

In addition to CEQA impacts, any removal or destruction of active nests and any killing of migratory birds would violate the federal Migratory Bird Treaty Act and/or the California Fish and Game Code, Sections 3500-3516. Common bird species may use vegetation in the Plan area for nesting. With the exception of English sparrow (*Passer domesticus*), European starling (*Sturnus vulgaris*), and rock dove (pigeon, *Columba livia*), the nests, eggs, and nestlings of all birds are protected under the California Fish and Game Code. (As noted, raptors protected by Fish and Game Code Section 3503.5 are considered special-status species for the purposes of this EIR, and are therefore listed in Table 4.3-1.)

The following mitigation measures would reduce impacts on special-status birds to less-than–significant level:

> **Mitigation Measure BIO-1a: Pre-Construction Special-Status Avian Surveys.** No more than two weeks in advance of any tree or shrub pruning, removal, or ground-disturbing activity that will commence during the breeding season (February 1 through August 31), a qualified wildlife biologist will conduct pre-construction surveys of all potential special-status bird nesting habitat in the vicinity of the planned activity. Pre-construction surveys are not required for construction activities scheduled to occur during the non-breeding season (August 31 through January 31). Construction activities commencing during the non-breeding season and continuing into the breeding season do not require surveys (as it is assumed that any breeding birds taking up nests would be acclimated to project-related activities already under way). Nests initiated during construction activities would be

presumed to be unaffected by the activity, and a buffer zone around such nests would not be necessary. However, a nest initiated during construction cannot be moved or altered.

***If pre-construction surveys indicate that no nests of special-status birds are present or that nests are inactive or potential habitat is unoccupied*:** no further mitigation is required.

***If active nests of special-status birds are found during the surveys*:** implement Mitigation Measure BIO-1b.

Mitigation Measure BIO-1b: Avoidance of active nests. If active nests of special-status birds or other birds are found during surveys, the results of the surveys would be discussed with the California Department of Fish and Game and avoidance procedures will be adopted, if necessary, on a case-by-case basis. In the event that a special-status bird or protected nest is found, construction would be stopped until either the bird leaves the area or avoidance measures are adopted. Avoidance measures can include construction buffer areas (up to several hundred feet in the case of raptors), relocation of birds, or seasonal avoidance. If buffers are created, a no disturbance zone will be created around active nests during the breeding season or until a qualified biologist determines that all young have fledged. The size of the buffer zones and types of construction activities restricted will take into account factors such as the following:

1. Noise and human disturbance levels at the Plan area and the nesting site at the time of the survey and the noise and disturbance expected during the construction activity;
2. Distance and amount of vegetation or other screening between the Plan area and the nest; and
3. Sensitivity of individual nesting species and behaviors of the nesting birds.

Significance after Mitigation: Less than Significant.

Implementation of the above mitigation measures would reduce impacts to special-status bird species to a less-than-significant level. (Implementation of Mitigation Measure BIO-1b would likewise ensure compliance with the federal Migratory Bird Treaty Act and with California Fish and Game Code, Sections 3500–3516.)

Impact BIO-2: Project construction and operations, as well as the final building structures, have the potential to affect migratory and breeding special-status birds through building collisions. (Less than Significant)

It is estimated that, in North America alone, millions of songbirds are killed due to collisions with buildings and other structures each year; collisions are currently recognized as one of the leading causes of bird population declines worldwide.[21] Daytime collisions occur most often when birds fail to recognize window glass as a barrier. Many collisions are induced by artificial night

[21] Brown, H., Caputo, S., McAdams, E.J., Fowle, M., Phillips, G., Dewitt, C., Gelb, Y., *Bird-safe Building Guidelines*, New York Audubon, available online: http://www.nycaudubon.org/home/BSBGuidelines.shtml, accessed February 16, 2010.

lighting, particularly from large buildings, which can be especially problematic for migrating songbirds since many species are nocturnal migrants.[22]

A lack of local data does not make it possible to determine the precise significance of this potential impact in relation to the Specific Plan. However, a growing recognition of the severity of this worldwide impact on birds suggests that, whenever feasible, measures to reduce the risk of avian collisions should be incorporated in building design.

Individual development projects in the Plan area may result in impacts to common birds through increased building collisions both at night and during the day. However, because Cooper's hawk is the only special-status bird species identified as having a moderate potential to be present in the Plan area, and because hawks are known to forage in relatively open areas, the potential for a Cooper's hawk to strike a building is deemed low. Therefore, this impact is less than significant.

Nevertheless, bird-safe design of subsequent development projects could minimize bird mortality. The following measures are based on the Bird-Safe Building Guidelines developed by the New York Audubon Society and the Bird Friendly Building Program developed by the Fatal Light Awareness Program (www.flap.org), and could be considered and incorporated, to the extent feasible, during building design and operations of subsequent development projects. These measures would help to minimize the potential impacts identified above to migrating birds in the study area.

Bird-safe Building Guidelines

a. Minimize the use of reflective glass at lower building levels, especially where vegetation or water features may be reflected;

b. Minimize bird habitat near ground stories, place new landscaping far enough away from glass building facades such that no vegetation reflection occurs, or situate trees and shrubs immediately adjacent to glass walls at a distance of less than three feet from the glass;

c. Minimize the reflection of rooftop landscaping in adjacent building features and design with adequate space for birds to fly safely into and out of any rooftop gardens;

d. Avoid placing water features in close proximity to glazed facades, or place soil berms, furniture, landscaping, or architectural features to prevent reflection of water in glass;

e. Design to avoid monolithic, undistinguishable expanses of glazing by maximizing "visual noise" both on the building scale and individual glass units;

f. Utilize glass that has been treated to reduce reflectivity, such as low-e patterning[23], etching, or low reflectivity glazing;

[22] Ogden, L.E., 1996. *Collision Course: The Hazards of Lighted Structures and Windows to Migrating Birds,* Special Report for the World Wildlife Fund and the Fatal Light Awareness Program. Website: http://www.flap.org/new/ccourse.pdf. Date Accessed: July 17, 2008. Published September 1996.

[23] Low emissivity (e) glass controls heat radiation and also distorts reflections, which prevents birds from flying into glass windows.

g. Where appropriate use plastic or metal screens over windows, especially on the ground levels, incorporate louvers, awnings, sunshades or other exterior shading/shielding devices to reduce reflection and give birds an indication of a visual barrier;

h. Angle glass to reflect the ground instead of nearby habitat and sky;

i. Minimize the number of, and co-locate, rooftop antennas and other structures;

j. Utilize self-supporting lattice or monopole structures that do not require guy wires.

Mitigation: None required.

Impact BIO-3: Impacts to migratory or breeding special-status birds and other special-status species due to lighting conditions. (Potentially Significant)

The tendency of birds to move towards lights at night when migrating, and their reluctance to leave the sphere of light influence for hours or days once encountered, has been well documented. It has been suggested that structures located at key points along migratory routes may present a greater hazard than those at other locations.[24] Direct effects include death or injury as the birds collide with lighted structures and other birds that are attracted to the light. Indirect effects include delayed arrival at breeding or wintering grounds, and reduced energy stores necessary for migration, winter survival, or subsequent reproduction.[25] The type of light used may affect its influence on the birds, for example, studies have indicated that blinking lights or strobe lights affect birds significantly less than non-blinking lights.[26]

The Plan area currently contains street and building lights and is located in an urban setting, surrounded by other light sources. Existing lighting sources already provide a significant source of illumination that affects nearby natural areas to some extent. However, the Plan area is in the vicinity of San Francisco Bay, a migratory bird stopover that is attractive to both waterfowl and songbirds. The Specific Plan may result in the construction of buildings that could be taller than most of the existing or other proposed buildings in the vicinity. While specific avian flight routes are not known and there is no local data on bird kills due to building collisions, the Project has the potential to result in new sources of lighting, which may act as an attractant for birds, resulting in collisions and avian mortality, particularly in areas prone to fog, areas proximate to migratory stopover points, and for buildings with large expanses of reflective or transparent glass.[27]

The following mitigation measures would reduce lighting-related impacts on migratory or breeding special-status birds and other special-status species to a less-than–significant level:

24 Ogden, 1996.
25 Gauthreaux, S.A., Belser, C.G., "Effects of Artificial Night Lighting on Migrating Birds," In: Rich, C. and Longcore, T., *Ecological Consequences of Night Lighting*, Island Press, Covelo, CA, pp. 67-93, 2006.
26 Gauthreaux and Belser, 2006.
27 Brown et al., 2007.

Mitigation Measure BIO-3a: Reduce building lighting from exterior sources.

a. Minimize amount and visual impact of perimeter lighting and façade up-lighting and avoid up-lighting of rooftop antennae and other tall equipment, as well as of any decorative features;

b. Install motion-sensor lighting, or lighting controlled by timers set to turn off at the earliest practicable hour;

c. Utilize minimum wattage fixtures to achieve required lighting levels;

d. Comply with federal aviation safety regulations for large buildings by installing minimum intensity white strobe lighting with a three-second flash interval instead of continuous flood lighting, rotating lights, or red lighting;

e. Use cutoff shields on streetlight and external lights to prevent upwards lighting.

Mitigation Measure BIO-3b: Reduce building lighting from interior sources.

a. Dim lights in lobbies, perimeter circulation areas, and atria;

b. Turn off all unnecessary lighting by 11pm thorough sunrise, especially during peak migration periods (mid-March to early June and late August through late October);

c. Use gradual or staggered switching to progressively turn on building lights at sunrise.

d. Utilize automatic controls (motion sensors, photo-sensors, etc.) to shut off lights in the evening when no one is present;

e. Encourage the use of localized task lighting to reduce the need for more extensive overhead lighting;

f. Schedule nightly maintenance to conclude by 11 p.m.;

g. Educate building users about the dangers of night lighting to birds.

Significance after Mitigation: Less than Significant.

Impact BIO-4: Noise from project construction and operational activities could affect migrating and breeding special-status birds, and other special-status species, but not to a degree that would be considered substantial or adverse. (Less than Significant)

Noise pollution can have detrimental impacts on wildlife, and bird populations are particularly susceptible because they rely on acoustic signals for mating, predator evasion, and communication between adults and offspring, among other behaviors. Ellis, for example, describes studies that show "noticeably alarmed" responses in raptors to sounds within the 82 to 114 dBA range.[28] Wildlife perception of noise appears to be generally more sensitive than that of humans.

[28] Ellis, D.H., C.H. Ellis, and D.P. Mindell, *Raptor Responses to Low-Level Jet Aircraft and Sonic Booms,* Environmental Pollution 74:53-83, 1981.

As discussed in more detail in Section 4.5, *Noise*¸ development of new land uses proposed in the Specific Plan could expose nearby residences to construction noise levels as high as 89 dBA at 50 feet using typical construction methods. However, Mitigation Measures NOI-1a and NOI-1b are identified to ensure that potential impacts to sensitive receptors within and adjacent to the Specific Plan area would be reduced to less-than-significant levels by requiring implementation of best management practices to reduce noise levels associated with construction equipment. In addition, Mitigation Measure BIO-1b would require avoidance measures for special-status birds and their nests during construction activities, which can include buffer areas that allow noise to dissipate with distance, resulting in less-than-significant impacts from construction.

Since the Plan area is already developed, ambient noise levels are already fairly high, in particular from roadways and the Caltrain commuter rail line. As discussed in Section 4.5, *Noise*, the project, upon build-out, even with other cumulative development, no noise levels would approach the 82 dBA level found to cause alarm in raptors. Therefore, the impacts of noise on migrating and breeding special-status birds and other special-status species would be less than significant. For a discussion of the current and projected noise resulting from the Specific Plan, please see Section 4.5, *Noise*.

Mitigation: None required.

Special Status Bat Species

Impact BIO-5: The Specific Plan could result in the take of special-status bat species. (Potentially Significant)

The pallid bat is the only special-status bat species that has the potential to occur in the Plan area. Bats have the potential to occur in man-made structures and trees, using them for roosting, breeding, or hibernating. In addition to protections afforded special-status bat species by the federal and California Endangered Species Act, other bats and non-game mammals are protected in California.

Maternity roosts are those that are occupied by pregnant females or females with non-flying young. Non-breeding roosts are day roosts without pregnant females or non-flying young. Destruction of an occupied, non-breeding, special-status bat roost, resulting in the death of bats; disturbance that causes the loss of a maternity colony of special-status bats (resulting in the death of young); or destruction of hibernacula (winter hibernation sites) would be considered a significant impact. This may occur due to direct or indirect disturbances. Direct disturbance includes tree removal, building removal, or nest destruction by any other means. Indirect disturbances include noise or increased human activity in the area. Hibernacula are generally not formed by bat species in the Bay area due to sufficiently high temperatures year round.

In addition to CEQA impacts, the California Fish and Game Code Section 4150 states that all non-game mammals or parts thereof, may not be taken or possessed except as otherwise provided in the code or in accordance with regulations adopted by the Commission.

The following mitigation measures would reduce impacts on special-status bat species to a less-than–significant level:

Mitigation Measure BIO-5a: Preconstruction surveys. Potential direct and indirect disturbances to special-status bats will be identified by locating colonies and instituting protective measures prior to construction of any subsequent development project. No more than two weeks in advance of tree removal or structural alterations to buildings with closed areas such as attics, a qualified bat biologist (e.g., a biologist holding a California Department of Fish and Game collection permit and a Memorandum of Understanding with the California Department of Fish and Game allowing the biologist to handle and collect bats) shall conduct pre-construction surveys for potential bats in the vicinity of the planned activity. A qualified biologist will survey buildings and trees (over 12 inches in diameter at 4.5-foot height) scheduled for demolition to assess whether these structures are occupied by bats. No activities that would result in disturbance to active roosts will proceed prior to the completed surveys. If bats are discovered during construction, any and all construction activities that threaten individuals, roosts, or hibernacula will be stopped until surveys can be completed by a qualified bat biologist and proper mitigation measures implemented.

***If no active roosts present*:** no further action is warranted.

***If roosts or hibernacula are present*:** implement Mitigation Measures BIO-5b and 5c.

Mitigation Measure BIO-5b: Avoidance. If any active nursery or maternity roosts or hibernacula of special-status bats are located, the subsequent development project may be redesigned to avoid impacts. Demolition of that tree or structure will commence after young are flying (i.e., after July 31, confirmed by a qualified bat biologist) or before maternity colonies forms the following year (i.e., prior to March 1). For hibernacula, any subsequent development project shall only commence after bats have left the hibernacula. No-disturbance buffer zones acceptable to the California Department of Fish and Game will be observed during the maternity roost season (March 1 through July 31) and during the winter for hibernacula (October 15 through February 15).

Also, a no-disturbance buffer acceptable in size to the California Department of Fish and Game will be created around any roosts in the Project vicinity (roosts that will not be destroyed by the Project but are within the Plan area) during the breeding season (April 15 through August 15), and around hibernacula during winter (October 15 through February 15). Bat roosts initiated during construction are presumed to be unaffected, and no buffer is necessary. However, the “take” of individuals is prohibited.

Mitigation Measure BIO-5c: Safely evict non-breeding roosts. Non-breeding roosts of special-status bats shall be evicted under the direction of a qualified bat biologist. This will be done by opening the roosting area to allow airflow through the cavity. Demolition will then follow no sooner or later than the following day. There should not be less than one night between initial disturbance with airflow and demolition. This action should allow bats to leave during dark hours, thus increasing their chance of finding new roosts with a minimum of potential predation during daylight. Trees with roosts that need to be removed should first be disturbed at dusk, just prior to removal that same evening, to allow bats to escape during the darker hours. However, the “take” of individuals is prohibited.

Significance after Mitigation: Less than Significant.

Special Status Amphibians, Reptiles and Fish

Impact BIO-6a: The Specific Plan could result in impacts to special-status amphibians and reptiles; California red-legged frog, California tiger salamander, and western pond turtle. (Potentially Significant)

Construction activities are highly unlikely to take place in the vicinity of San Francisquito Creek. The Specific Plan (Standard E.3.3.08) does not permit development to occur within the creek bed, below the creek bank, or in the riparian corridor. In addition, only a very small portion of the Specific Plan area abuts San Francisquito Creek. Development of the two sites adjacent to the Creek is highly unlikely. On the east side of El Camino Real, the property abutting the Creek is occupied by the Stanford Park Hotel. On the west side of the Creek, property occupied by buildings located at 15-99 El Camino Real is located across Creek Street from the Creek. Neither site has been identified as an opportunity site. If construction activities did take place near the riparian corridor, they could directly adversely affect California red-legged frogs, California tiger salamanders, and/or western pond turtles, which would result in potentially significant impacts. Indirect impacts are unlikely to occur through the loss of habitat but could occur through the introduction of non-native species.

California red-legged frogs, California tiger salamanders, and/or western pond turtles or their habitat are present in San Francisquito Creek near the Plan area; it is unlikely that habitat for these species is present within Atherton Channel since it is mostly channelized and underground. While San Francisquito Creek is surrounded by urban development, relatively undisturbed upstream habitats could contain breeding populations of California red-legged frogs, California tiger salamanders, and/or western pond turtles. Additionally, individuals from upstream populations could move downstream in San Francisquito Creek and its riparian corridor and into the Plan area. Upland habitat for these species is extremely limited in the vicinity of the Plan area and individuals of these species present in the creek are unlikely to move out of the riparian corridor. Project activities will not likely directly impact California red-legged frogs, California tiger salamanders, or western pond turtles.

Discharge of hazardous materials into San Francisquito Creek and construction near storm drains or otherwise affecting water quality could significantly impact habitat quality for these species. Chapter 4.8, *Hydrology and Water Quality*, and BIO-8 describe the current measures in place to protect and improve water quality in San Francisquito Creek. No additional mitigation measures are required to mitigate potential water quality impacts to a level of insignificance.

The following mitigation measure would reduce impacts on California red-legged frog, California tiger salamander, and western pond turtle to less-than–significant levels:

> **Mitigation Measure BIO 6a:** The following measures shall be implemented to mitigate the effects of the project on special-status amphibians and reptiles:

Staging areas, and all fueling and maintenance of vehicles and other equipment and staging areas shall be at least 100 feet from the riparian corridor of San Francisquito Creek.

For any construction that takes place within 100 feet of the riparian corridor of San Francisquito Creek:

- The project sponsor shall install exclusionary fencing, such as silt fences, along San Francisquito Creek and around all construction areas that are within 100 feet of or adjacent to potential California red-legged frog, California tiger salamander, or western pond turtle habitat, which includes San Francisquito Creek and its riparian corridor. Once fencing is in place, it shall be maintained by the project sponsor until completion of construction within or adjacent to the enclosure.
- Prior to commencement of any earthmoving activities, the project sponsor shall retain a qualified monitoring biologist to train all construction personnel and work crews on the sensitivity and identification of the California red-legged frog, California tiger salamander, and western pond turtle and the penalties for the "take" of these species. In addition, species identification cards shall be provided to all construction personnel. Training sessions shall be conducted for all new employees before they access the Plan area and periodically throughout project construction.
- During project construction the qualified monitoring biologist who is familiar with the identification and life history of California red-legged frog, California tiger salamander, and western pond turtle, and with the appropriate agency authorization, shall be designated to periodically inspect onsite compliance with all mitigation measures, consistent with the training sessions.
- The qualified monitoring biologist shall perform a daily survey of the San Francisquito Creek and its riparian corridor within 100 feet of the project site during initial ground-breaking activities and during the rainy season. During these surveys, the qualified monitoring biologist shall inspect the exclusion fencing for individuals trapped within the fence and determine the need for fence repair. After ground-breaking activities and during the non-rainy season, the qualified monitoring biologist shall continue to perform daily fence surveys and compliance reviews at the project site.
- If a California red-legged frog or California tiger salamander is identified in the project work area, all work in the immediate area shall cease and the U.S. Fish and Wildlife Service shall be contacted. Work shall not begin again until so authorized by the U.S. Fish and Wildlife Service.

Significance after Mitigation: Less than Significant.

Impact BIO-6b: The Specific Plan could result in impacts to special-status steelhead. (Less than Significant)

Steelhead occupy only the bed of San Francisquito Creek and not the riparian corridor. Harm to steelhead could occur due to physical harm to the fish in the immediate vicinity of construction below the creek bank or in the creek bed or from water quality degradation due to construction activities within the riparian corridor or elsewhere in the Specific Plan area.

The Specific Plan (Standard E.3.3.08) does not permit development below the creek bank, in the creek bed, or in the riparian corridor. As noted under BIO-6a, construction activities are in any case highly unlikely to take place in the vicinity of San Francisquito Creek because the two sites adjacent to the Creek are occupied with uses that are not likely to redevelop. Chapter 4.8, *Hydrology and Water Quality*, and BIO-8 describe the current measures in place to protect and improve water quality in San Francisquito Creek. No additional mitigation measures are required to mitigate potential water quality impacts to a level of insignificance.

Mitigation: None required.

Protected Trees

Impact BIO-7: The Specific Plan may result in damage to, or removal of, protected trees that are within or adjacent to the Plan area, but would not conflict with existing ordinances regarding tree resources and not to a degree that would be considered substantial or adverse. (Less than Significant)

The Plan area is urban and almost completely developed. As a result, mature trees are primarily located within the public right-of-ways, including streets, sidewalks and other public areas, and along the perimeter or private properties. The Specific Plan includes numerous guidelines calling for the retention of existing mature trees to the extent possible (Standard D.2.01, and Design Guidelines D.2.30, D.2.45, D.3.22 and D.5.17). Additionally, a "green and shaded Downtown and Station Area" is a key unifying concept (Section D.1), with numerous design guidelines providing for more trees and landscaping along sidewalks, in plazas and other public spaces (Design Guidelines D.2.04, D.2.21, D.2.27, D.2.40, D.2.49, D.2.54, D.3.06, D.3.09, D.3.16, D.3.25, D.4.05, D.4.11, D.4.14, D.5.03, D.5.04, D.5.18, and D.6.06). With the combination of the design guidelines' emphasis on retention and enhancement of trees in the Specific Plan area and the location of many existing trees within public areas and on the perimeter of properties, implementation of the Specific Plan would result in the planting of more trees than currently exist. While no projects have been identified that would remove existing trees, it is possible that future construction could result in tree removal.

Heritage trees are protected by Menlo Park Municipal Code Chapter 13.24 Heritage Trees. Protected or heritage trees that occur within or immediately adjacent to the footprint of subsequent individual development projects could be damaged by construction activities such as excavating, grading and soil compaction. Extensive damage to branches, trunks, or roots increases vulnerability and may lead to tree mortality. The loss of a heritage tree without prior approval by the City would be a violation that can be remedied by fine, stop-work order, and development moratorium. City code requires submittal of a removal permit, subject to the approval of the Director of Public Works. Approvals/denials can be appealed to the Environmental Quality Commission and again to the City Council. Associated guidelines ("Heritage Tree Replacement Procedures") require the planting of replacement trees at a 1:1 basis

for residential projects and 2:1 for commercial projects to mitigate the impact of heritage tree removal. The Municipal Code and guidelines apply to both private and public projects.

Additionally, the City of Menlo Park's Building Division provides "Tree Protection Specification"[29] measures to further ensure the protection of heritage trees during construction activities. These measures include but are not limited to fencing protected trees and providing a "tree protection zone" during building/development, or using a tree wrap where appropriate and prohibiting spillage of materials below the tree canopy, damaging trunks, roots, or branches of trees without prior authorization.

Compliance with these existing code requirements, guidelines, and Tree Protection Specification measures and procedures, coupled with the additional tree planting resulting from implementation of the Specific Plan, would mitigate the impact of any loss of protected trees and would constitute consistency with the local ordinances designed to protect existing tree resources. The impact would be less than significant.

Mitigation: None required.

Creeks and Riparian Areas

Impact BIO-8: Construction activities could impact creeks and riparian areas, but development is highly unlikely to occur on sites adjacent to creeks and riparian areas, development is prohibited within the riparian corridor, and water quality impacts would be limited by existing statutes and permitting requirements. (Less than Significant)

San Francisquito Creek and its associated riparian zone are located at the far southeastern edge of the study area. As described under BIO-6, development is forbidden below the creek bank, in the creek bed, or in the riparian corridor, so that temporary or permanent direct impacts to jurisdictional waters are not permitted. In addition, as also described under BIO-6, development is highly unlikely on the two parcels abutting the Creek. If construction is proposed within 100 feet of the riparian corridor, mitigation measures listed under BIO-6a will be instituted to prevent impacts to special status amphibians and reptiles.

The potential impact of non-proximate construction on water quality in the creek is analyzed in Section 4.8, *Hydrology and Water Quality*, Impacts HYD-1 and HYD-2, but key elements are summarized here with regard to the National Pollutant Discharge Elimination System (NPDES) waste discharge regulations. Stormwater in San Mateo County is managed in accordance with a municipal stormwater NPDES permit from the San Francisco Bay Regional Water Quality Control Board (permit no. R2-2009-0074). This permit contains a comprehensive plan to reduce the discharge of pollutants to the "maximum extent practicable" and mandates that participating municipalities implement an approved stormwater management plan. New development and

[29] City of Menlo Park. Tree Protection Specifications. Community Development Building Division. http://www.menlopark.org/departments/bld/tree_Specifications09.pdf

redevelopment projects are required to incorporate treatment measures and other appropriate source control and site design features to reduce the pollutant load in stormwater discharges and manage runoff flows. Projects that involve the creation or replacement of 10,000 square feet or more of impervious surfaces must comply with the C.3 requirements. Associated requirements mandate the development and implementation of a storm water pollution prevention plan (SWPPP).

In addition, the City of Menlo Park Public Works Department has requirements for all development or redevelopment projects that that disturb 500 square feet or more. These requirements include preparation of a construction plan to ensure that sediment-laden water will not leave the site and implementation of measures designed so that post-project runoff will not exceed pre-project levels. Full compliance with these requirements is documented through the City's Hydrology Report requirements.

As a result, existing statutes and permitting requirements for non-proximate construction, as described in detail in Chapter 4.8, and the prohibition on development directly affecting the bed of San Francisquito Creek itself and within the riparian corridor would reduce potential impacts on jurisdictional waters to less-than-significant levels.

Mitigation: None required.

Cumulative Impacts

This analysis evaluates whether the impacts of the Specific Plan, together with the impacts of cumulative development, would result in a cumulatively significant impact on special-status species, wetlands and other waters of the U.S., or other biological resources protected by federal, state, or local regulations or policies (based on the significance criteria and thresholds presented earlier). This analysis then considers whether the incremental contribution of the Specific Plan to this cumulative impact would be considerable. Both conditions must apply in order for the project's cumulative effects to rise to the level of significance.

The geographic context for analysis of cumulative impacts to biological resources in this EIR encompasses primarily other projects that could affect San Francisquito Creek and similar urbanized areas in eastern San Mateo County.

Impact BIO-9: Project construction activity and operations, in conjunction with other past, current, or foreseeable development in similar urbanized areas in eastern San Mateo County, could result in impacts on special-status species, habitats, wetlands, and other waters of the U.S. (Less than Significant)

Relative to existing conditions, which is the baseline for CEQA analysis, the impacts of the Specific Plan would not aggregate with other impacts to breach the CEQA significance thresholds described elsewhere in the Draft EIR. Habitat within the Plan area is primarily urban/landscaped typical of urban San Mateo County and for the most part does not provide suitable habitat for special-status

species, as shown in Table 4.3-1 of the EIR. The Specific Plan could result in the displacement of a few scattered pockets of wildlife from this urban/landscaped habitat (e.g., bats in abandoned buildings; birds nesting in street trees), which generally represents a less-than-significant relocation of disturbance-tolerant plants and animals. The Plan proposes to add and to improve parks and to increase street trees and landscaping, thus increasing this type of habitat, as described in BIO-7. Like other urbanized areas in this part of the Bay Area, the Specific Plan does not provide important plant and wildlife habitat, with the exception of the small portion of San Francisquito Creek and its riparian corridor within the Specific Plan area.

Environmentally protective laws and regulations have been applied with increasing rigor since the early 1970s and include the California Endangered Species Act, Federal Endangered Species Act, and the Clean Water Act, as described in the Regulatory Setting for this section and in Chapter 4.8, Hydrology and Water Quality. The Specific Plan and other similar future infill projects within the other urbanized areas in the vicinity are and would be required to comply with local, state, and federal laws and policies and all applicable permitting requirements of the regulatory and oversight agencies intended to address potential impacts on biological resources, including wetlands, other waters of the U.S., and special-status species.

No specific project-related or cumulative impact on San Francisquito Creek has been identified. The Specific Plan does not permit development in the creek bed, below the creek banks, or in the riparian corridor. The water quality requirements described in BIO-8 apply throughout Menlo Park, including outside the Plan area. While flood reduction projects have been proposed for San Francisquito Creek, primarily east of Middlefield Drive, by the San Francisquito Creek Joint Powers Authority and the Army Corps of Engineers, no environmental review has been completed for these projects. To the extent that information is known, these projects are intended to include ecosystem improvements that would enhance the existing degraded Creek habitat.[30]

The impact analysis has shown that the El Camino Real/Downtown Specific Plan has a limited potential for relatively minor impacts on biological resources and that these impacts can be minimized to less-than-significant levels through the application of the identified mitigation measures. No additional cumulative impacts have been identified. Therefore, the cumulative effect of the Specific Plan on biological resources would be less than significant.

Mitigation: None required.

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30 *See* San Francisquito Creek Joint Powers Authority, March 22, 2012, Executive Director's Report, *available at* http://sfcjpa.ehclients.com/documents/3.22_.12_JPA_Board_Meeting_Packet_.pdf; and description of Corps of Engineers Feasibility Study, *available at* http://sfcjpa.org/web/projects/active/corps-of-engineers-feasibility-study/

4.4 Cultural Resources

This section presents a summary of the prehistory and history of the Menlo Park Specific Plan area and an overview of known cultural resources. Cultural resources include historic-era architectural and structural resources, archaeological resources, paleontological resources, and human remains. In order to identify the types and quantity of cultural resources within the Plan area, a records search was conducted at the Northwest Information Center of the California Historical Resources Information System (NWIC) at Sonoma State University on April 23, 2009 (File No. 08-1300). The records were accessed by utilizing the Palo Alto, California, U.S. Geological Survey 7.5-minute quadrangle base map. Also reviewed were the *California Inventory of Historical Resources*,[1] *California Historical Landmarks*,[2] *California Points of Historical Interest*,[3] and *Historic Properties Directory Listing*.[4] The Historic Properties Directory includes listings of the National Register of Historic Places and the California Register of Historical Resources, and the most recent listings of California Historical Landmarks and California Points of Historical Interest.

4.4.1 Environmental Setting

Historical and Archeological Resources

The CEQA Guidelines (Section 15064.5) define a historical resource as: (1) a resource determined by the State Historical Resources Commission to be eligible for the California Register of Historical Resources (including all properties on the National Register); (2) a resource included in a local register of historical resources, as defined in Public Resources Code (PRC) Section 5020.1(k); (3) a resource identified as significant in a historical resource survey meeting the requirements of PRC Section 5024.1(g); or (4) any object, building, structure, site, area, place, record, or manuscript that the City determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California, provided the lead agency's determination is supported by substantial evidence in light of the whole record. Generally, a resource shall be considered to be historically significant if it meets the criteria for listing on the California Register.

Menlo Park has designated certain buildings as historic by including them in the H (Historic) overlay zone described below. In 1990, the San Mateo County Historical Association completed a historical resource survey for the City, which was submitted to the California Office of Historic Preservation (OHP). This survey was prepared in compliance with OHP Guidelines and is included

1 California Department of Parks and Recreation (DPR), *California Inventory of Historical Resources.* California Department of Parks and Recreation, Sacramento, 1976.

2 California Office of Historic Preservation (OHP), *California Historical Landmarks*. State of California Department of Parks and Recreation, Sacramento, 1990.

3 California Office of Historic Preservation (OHP), *California Points of Historical Interest*. State of California Department of Parks and Recreation, Sacramento, 1992.

4 California Office of Historic Preservation (OHP), *Directory Properties in the Historic Resources Database for San Mateo County* (through February 5, 2009). State Office of Historic Preservation, Sacramento, 2009.

in the *State Historic Resources Inventory.* Any resource evaluated by OHP and determined to have a significance rating of 1 – 5 is considered to be historic. (PRC Section 5024.1(g))[5].

If the City determines that an archaeological site is a historical resource, the provisions of CEQA Section 21084.1 and CEQA Guidelines Section 15064.5 would apply. These CEQA-related sections refer to the California Register of Historic Resources criteria for determining historical significance and are described in more detail in the section of this chapter titled *California Register of Historic Resources*. If an archaeological site does not meet the CEQA Guidelines criteria for a historical resource, then the site may meet the threshold of CEQA Section 21083 regarding unique archaeological resources.

As defined in CEQA Section 21083.2, a "unique" archaeological resource is an archaeological artifact, object, or site about which it can be clearly demonstrated that, without 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; and/or
- Is directly associated with a scientifically recognized important prehistoric or historic event or person.

Prehistoric Overview

Categorizing prehistoric times into broad cultural stages allows researchers to describe a wide number of archaeological sites with similar cultural patterns and components during a given period of time, thereby creating a regional chronology. This section provides a brief discussion of the chronology for the Plan area.

A framework for the interpretation of the San Francisco Bay Area, including San Mateo County, is provided by Milliken et al.,[6] who have divided human history in California into three broad periods: the Early Period, the Middle Period, and the Late Period. Economic patterns, stylistic aspects, and regional phases further subdivide cultural patterns into shorter phases. This scheme uses economic and technological types, socio-politics, trade networks, population density, and variations of artifact types to differentiate between cultural periods.

The Paleoindian Period (11,500 to 8000 B.C.) was characterized by big-game hunters occupying broad geographic areas – evidence for this period has not yet been discovered in the San Francisco Bay. During the Early period, consisting of the Early Holocene (8000 to 3500 B.C.)

5 PRC Section 5024.1(g)(4) also requires an updated survey within the last five years for the properties listed to be presumed to be historic. Although the City's 1990 survey has not been updated as required, for the purposes of this EIR, properties designated 1 – 5 are presumed to be historic.

6 Milliken, Randall, Richard T. Fitzgerald, et al., "Punctuated Culture Change in the San Francisco Bay Area," In *Prehistoric California: Colonization, Culture, and Complexity.* Edited by T.L. Jones and K.A. Klar, pp. 99–124, AltaMira Press. 2007.

and Early Period (3500 B.C. to 500 B.C.), geographic mobility continued and is characterized by the millingslab and handstone as well as large wide-stemmed and leaf-shaped projectile points. The first cut shell beads and the mortar and pestle are first documented in burials during this period, indicating the beginning of a shift to sedentism. During the Middle period, which includes the Lower Middle Period (500 B.C. to A.D. 430) and Upper Middle Period (A.D. 430 to 1050), geographic mobility may have continued, although groups began to establish longer-term base camps in localities from which a more diverse range of resources could be exploited. The first rich black middens are recorded from this period. The addition of milling tools, obsidian and chert concave-base points, and the occurrence of sites in a wider range of environments suggest that the economic base was more diverse. By the Upper Middle Period, mobility was being replaced by the development of numerous small villages. Around A.D. 430 a "dramatic cultural disruption" occurred evidenced by the sudden collapse of the *Olivella* saucer bead trade network. During the Initial Late period (A.D. 1050 to 1550), social complexity developed toward lifeways of large, central villages with resident political leaders and specialized activity sites. Artifacts associated with the period include the bow and arrow, small corner-notched points, and a diversity of beads and ornaments.

Ethnographic Setting

The Menlo Park area was settled by native Californians between 12,000 and 6,000 years ago. Penutian peoples migrated into central California around 4,500 years ago and were firmly settled around San Francisco Bay by 1,500 years ago. The descendants of the native groups who lived between the Carquinez Strait and the Monterey area are the Ohlone, although they are often referred to by the name of their linguistic group, Costanoan.[7]

Approximately 40 Ohlone tribelets were documented ethnographically. The Puichon, a Costanoan linguistic group, resided in the area of today's cities of Menlo Park, Mountain View, and Palo Alto. An Ohlone household was made up of about 15 individuals. Households, in turn, grouped together to form villages, which in turn comprised tribelets. A tribelet was a politically independent land holding group that exercised control of its own resources. Most California tribelets consisted of 200 to 250 people.

In the Menlo Park area, Ohlone villages and temporary campsites were located along waterways near sources of fresh water. Villages were also located adjacent to the marshlands that formerly bordered San Francisco Bay. For the Ohlone, like many other Native Americans in California, the acorn was the dietary staple. Acorns were knocked from trees with poles, then leached to remove bitter tannins and eaten as mush or bread. The Ohlone used a range of other plant resources, including buckeye, California laurel, elderberries, strawberries, Manzanita berries, goose berries, toyon berries, wild grapes, wild onion, cattail, amole, wild carrots, clover, and chuchupate. Larger animals hunted by the Ohlone and their neighbors included black-tailed deer, Roosevelt elk, antelope, and marine mammals. Smaller animals such as dog, skunk, raccoon, rabbit, squirrel, geese

[7] Levy, Richard, "Costanoan" In *California*, edited by Robert F. Heizer, pp. 485–495. Handbook of North American Indians, Vol. 8, William C. Sturtevant, general editor. Smithsonian Institution, Washington, D.C., 1978.

and ducks, salmon, sturgeon, and mollusks were also harvested. In addition to sustenance, the Bay Area's flora and fauna provided the Ohlone with raw materials for clothing, shelter, and boats.

Intensive Hispanic exploration and settlement of the Bay Area began in the late eighteenth century. Ohlone culture was radically transformed when European settlers moved into northern California. These settlers established the mission system and exposed the Ohlone to diseases to which they had no immunity. Mission San Francisco was founded in 1776, and drew Ohlone from the entire Bay Area. Mission Santa Clara, just outside of San Jose, was founded in 1777. The distance between Menlo Park and these two missions is similar, suggesting that Menlo Park-area Ohlone may have visited both. Mission records list the Puichon at Mission San Francisco between 1781 and 1794 and at Mission Santa Clara between 1781 and 1805. Following the secularization of the missions in 1834, native people in the Bay Area moved to ranchos, where they worked as manual laborers.

Prehistoric Archaeological Resources

The 2009 review of the records and literature on file at the NWIC indicates that no prehistoric archaeological resources have been recorded within the Plan area. However, numerous prehistoric archaeological sites have been discovered all along the San Francisquito Creek corridor just outside of the Plan area. Historic-era development within the Plan area may have covered and/or disturbed prehistoric archaeological materials. Types of prehistoric materials that would indicate Native American use and occupation in the vicinity of Menlo Park might include obsidian and chert flaked-stone tools (e.g., projectile points, knives, scrapers) or toolmaking debris; culturally-darkened soil ("midden") containing heat-affected rocks, artifacts, or shellfish remains; stone milling equipment (mortars, pestles, handstones, or milling slabs); and battered stone tools, such as hammerstones and pitted stones.

Historic Overview

In 1795, Jose Dario Arguello, the commandante of the San Francisco Presidio, was granted Rancho de las Pulgas by Governor Diego de Borica. The 35,260-acre land grant extended from San Francisco Bay between San Mateo Creek in the north and San Francisquito Creek in the south. The western boundary was disputed for decades. After the Arguello family obtained legal title in 1853, they subdivided the lands which became several cities, including Menlo Park.

In 1854, Dennis J. Oliver and Daniel McGlynn purchased 1,700 acres from the Arguello family. Their property bordered El Camino Real, which was also known as County Road. Oliver and McGlynn erected an arch with the words "Menlo Park" on it to honor their former home in Menlough, County Galway, Ireland. In 1863, the Southern Pacific Railroad was extended to the community of Menlo Park and the name "Menlo Park" was chosen for the railroad station. In the late 1850s, the road between San Francisco and San Jose was completed.[8] San Franciscans were

[8] San Mateo County became independent of San Francisco County in 1856. By this time, the County Road had been laid for horse and carriages, wagons and stagecoaches from San Francisco to Belmont, and was soon extended past Menlo Park to San Jose. This County Road opened the entire Peninsula and Menlo Park to the residents of San Francisco and San Jose.

drawn to Menlo Park's mild climate and built grand estates for their summer residences. Wealthy families purchased large tracts of land and were more or less self-sufficient, producing their own food. Workers lived within the estate grounds. During this same period, the downtown area of Menlo Park, which includes the Plan area, began to develop along Oak Grove Avenue between the railroad station and El Camino Real. By 1870, twelve buildings situated between the railroad station and El Camino Real in the vicinity of Oak Grove Avenue were constructed, consisting of two general stores, three hotels, livery stables, saloons, and three blacksmith shops. The first store in Menlo Park was on the corner of Oak Grove Avenue and El Camino Real. The first hotel, Menlo Park Hotel, was also on Oak Grove Avenue, adjacent to the railroad tracks.

Menlo Park's population increased slowly until World War I. In 1917, 27,000 soldiers were stationed at Camp Fremont in Menlo Park. The training camp covered approximately 25,000 acres adjacent to the Plan area and extending south along El Camino Real. Menlo Park's first gas and water services, its first paved streets, and an increase in businesses were a direct result of the transient military population. Following the closure of Camp Fremont in 1919, Menlo Park reverted to a small town with 2,300 residents.

Menlo Park incorporated twice. In 1874, the City incorporated for two years to raise road repair funds, disincorporated, and incorporated again in 1927, which coincided with increased development on the San Francisco peninsula that brought new residents to Menlo Park. The original Dumbarton Bridge opened in 1927, connecting the South Bay and East Bay. In 1931, the Bayshore Highway (now Highway 101) linked Menlo Park and San Francisco.

In 1940, Menlo Park's population was 3,258. World War II brought about many changes in the small town. Dibble General Hospital treated 16,000 soldiers during the war. Following World War II, in the 1950s, the hospital campus became the site of the Menlo Park Civic Center, Stanford Research Institute (today's SRI International), and the United States Geological Survey. Today Menlo Park is a suburban residential community with a variety of businesses, including high-tech industries.

Historic-era Architectural Resources in the Plan Area

The following buildings in the Plan Area are considered to be historical resources as defined by the CEQA Guidelines:

National/California Register Property. The 1863 Southern Pacific Railroad Station (now the Menlo Park Caltrain Station) at 1100 Merrill Street within the Plan area is the oldest railroad station in continuous operation in California. The station is designated California State Landmark Number 955, and was listed in the National Register of Historic Places in 1974 (status code "1S").

Local Register or Designation. While Menlo Park does not maintain a local register of historic places, it has included two properties in the "H" Historic Site District, described below. Neither property is located in the Specific Plan area.

Resources Identified in a Local Survey and Rated 1 - 5 by OHP. The 1990 historical resources survey of Menlo Park was evaluated by OHP. It shows two buildings in the Plan area as individually eligible for listing in the National Register at the federal level (status code "3S"): the 1899 John Duff House at 849 El Camino Real, and the 1917 Oasis at 241 El Camino Real. OHP also confirmed the survey's findings that identified the following three buildings in the Plan area to be individually eligible for listing in the National Register at the local level (status code of "5S1"): 1) the 1910 Doughty's Meat Market/Kate Taylor Interiors at 1162 El Camino Real; 2) the 1905 Martin J. McCarthy Groceries at 1170 El Camino Real; and 3) the 1925 K.L. Plumbing/ Guy Plumbing at 1265 El Camino Real.

Other Structures Eligible for the California Register or Designated by the City as Historic. The City has not designated any other structures within the Specific Plan area as historic. A historic evaluation of the Park Theater at 1275 El Camino Real between Oak Grove and Valparaiso Avenues was completed on September 21, 2004, by Architectural Resources Group (ARG). Built in 1947, this Art Deco style, single-screen movie theater was found to be eligible for the National (and so the California) Register. ARG found that, "The Park Theater appears to be eligible for the National Register of Historic Places at the local level under Criterion C for its embodiment of a new type of building, a 1940s neighborhood theater. Characteristic of neighborhood theaters, the Park Theater is small (seats about 700) and combines the Art Deco and Art Moderne styles frequently used for theaters of the period" (ARG, 2004). The theater is currently closed.

Two buildings included in the 1990 survey were found not to be historic as defined by CEQA by the Office of Historic Preservation (OHP): the Guild Theater at 949 El Camino Real (rated 6L, "ineligible for local listing or designation"), and the 1920 Menlo Clock Works at 961 El Camino Real (same). The 1905 Both Electric Building at 1047 El Camino Real was demolished in 1989.

Two buildings, (the 1926 American Trust Company at 1090 El Camino Real, now the British Bankers Club, and the 1145 Merrill Street Building) identified in the 1990 survey have been designated "7N" by OHP. They were originally identified as having the potential, if something changed in the future, to become eligible for the National or California Register. The "7N" designation indicates that the buildings need to be reevaluated using current standards.[9] However, they are not currently identified as historic resources under CEQA.

Historic-era Architectural Resources Adjacent to the Plan Area

Located east of the Plan area is the Barron-Latham-Hopkins Gate Lodge, or "The Gatehouse," at 555 Ravenswood Avenue. This building is the oldest existing structure in Menlo Park and the last surviving gatehouse in the state of California. It was listed on the National Register of Historic Places in 1986 and is important as a last remnant of the many country estates that were built in the area during the 1860s. The Gatehouse was built in 1864 by William Eustace Barron who was a leading capitalist during California's formative days. It was the entrance to a 280-acre estate that extended from the Caltrain Railroad tracks to Middlefield Road and from Ravenswood

[9] California State Office of Historic Preservation, "Technical Assistance Bulletin #8, User's Guide to the California Historical Resource Status Codes & Historic Resources Inventory Directory"; November 2004. Available on-line at: http://www.ohp.parks.ca.gov/pages/1069/files/TAB8.pdf.

Avenue to the San Francisquito Creek. There were several outbuildings on the estate that supported a 40-room mansion. The mansion no longer exists, but the gatehouse was restored in 1996 by its current tenant, the Junior League of Palo Alto-Mid Peninsula. Located across the railroad tracks and also east of the plan area boundaries is the Edgar Mills Estate/Bright Eagle building at 1040 Noel Drive. This 1880s Italianate mansion was converted to commercial uses, and is within the City's Historic (H) zoning district. It is also eligible for listing in the National Register (status code "3S").

Two other recorded historic resources are also located outside of the Plan area: the 1872 Church of the Nativity at 210 Oak Grove Avenue (listed in the National Register), and the 1886 Nativity of the Holy Virgin Church (Holy Trinity Episcopal Church/Russian Orthodox Church) at 1220 Crane Street (eligible for listing in the National Register). Finally, Portola's Journey's End, at the intersection of East Creek Drive and Alma Street just east of the Plan area, is a California State Landmark Site No. 2. This was the campsite and terminus point of the de Portolá Expedition from November 6 through 10, 1769. The Portolá expedition of 1769 included 63 men and 200 horses and mules which had traveled from San Diego in search of Monterey, but instead discovered San Francisco Bay. Finding the Bay too large to go around, and deciding that Monterey had been bypassed, they ended the search at this site in today's Menlo Park, and returned to San Diego.

Historic-era Archaeological Resources

The 2009 review of the records and literature on file at the NWIC indicates that no historic-era archaeological resources have been recorded within the Plan area. However, given the intensive use of the area during the early American period, there is the potential for finding historic-era archaeological sites within the Plan area. Historic-era archaeological materials could include stone, concrete, or adobe footings and walls; artifact-filled wells or privies; and deposits of metal, glass, and/or ceramic refuse.

Paleontological Resources

Paleontology is a multidisciplinary science that combines elements of geology, biology, chemistry, and physics in an effort to understand the history of life on earth. Paleontological resources, or fossils, are the remains, imprints, or traces of once-living organisms preserved in rocks and sediments. These include mineralized, partially mineralized, or unmineralized bones and teeth, soft tissues, shells, wood, leaf impressions, footprints, burrows, and microscopic remains. The fossil record is the only evidence that life on earth has existed for more than 3.6 billion years. Fossils are considered nonrenewable resources because the organisms they represent no longer exist. Once destroyed, a fossil can never be replaced. The following subsection discusses existing conditions with respect to paleontological resources in the Plan area.

Paleontological Assessment Standards

The Society of Vertebrate Paleontology (SVP) has established guidelines for the identification, assessment, and mitigation of adverse impacts on nonrenewable paleontological resources.[10,11] Most practicing paleontologists in the nation adhere closely to the SVP's assessment, mitigation, and monitoring requirements as outlined in these guidelines, which were approved through a consensus of professional paleontologists and are the standard against which paleontological monitoring and mitigation programs are judged.

The SVP (1995) outlined criteria for screening the paleontological potential[12] of rock units and established assessment and mitigation procedures tailored to such potential. **Table 4.4-1** lists the criteria for high-potential, undetermined, and low-potential rock units.

TABLE 4.4-1
PALEONTOLOGICAL POTENTIAL CRITERIA

Paleontological Potential	Description
High	Geologic units from which vertebrate or significant invertebrate or plant fossils have been recovered. Only invertebrate fossils that provide new information on existing flora or fauna or on the age of a rock unit would be considered significant.
Undetermined	Geologic units for which little to no information is available.
Low	Geologic units that are not known to have produced a substantial body of significant paleontological material.

SOURCE: SVP, 1995.

Paleontological Resource Potential

The fossil yielding potential of a particular area is highly dependent on the geologic age and origin of the underlying rocks. The project area is directly underlain by a variable thickness of artificial fill or disturbed soil which is typical of an urbanized area. However, the natural geology of the area consists of Pleistocene-age (10,000 to 1.8 million years ago) alluvial fan deposits and Holocene-age (less than 10,000 years ago) levee deposits.[13] The Pleistocene alluvium underlies the majority of the project area whereas the natural levee deposits border San Francisquito Creek. These geologic deposits are likely to underlie the disturbed soils within short depths. The paleontological potential of these three units is discussed below.

10 Society of Vertebrate Paleontology (SVP), Assessment and mitigation of adverse impacts to nonrenewable paleontologic resources: standard guidelines, Society of Vertebrate Paleontology News Bulletin, Vol. 163, pp. 22-27, 1995.

11 Society of Vertebrate Paleontology (SVP), *Conditions of Receivership for Paleontologic Salvage Collections*, Society of Vertebrate Paleontology News Bulletin, Vol. 166, pp. 31–323, February 1996.

12 Paleontological potential refers to the likelihood that a rock unit will yield a unique or significant paleontological resource.

13 United States Geological Society (USGS), *Geologic map and map database of the Palo Alto 30' X 60' quadrangle, California*, Prepared by Brabb E.E., Graymer R.W., and Jones D.L., USGS Miscellaneous Field Studies, Map MF-2332, Version 1.0, 2000.

Artificial Fills

Artificial fills are engineered mixtures of sand, silt and gravel used to prepare areas for urban development and are sourced from natural geologic deposits, but have been excavated, reworked, and transported to their present location. If artificial fills contain fossilized remains, they would be severely damaged and fragmented, unidentifiable, and could not be placed within the fossil record. Artificial fills and disturbed soils would thus be unable to yield fossils that could contribute to science or natural history, and thus would not contain unique or significant paleontological resources.

Pleistocene Alluvium

Pleistocene alluvium is characterized by sequences of sand, silt and gravel that form gently sloping surfaces. These deposits originated from modern stream courses, which now deposit their sediment loads closer to the bay and in narrow stream valleys. Thus, these "stabilized" alluvial fan deposits are old enough to have stiffened and preserved the remains of Pleistocene organisms. In fact, Pleistocene alluvium in California is well known for yielding fossils of extinct vertebrate mammals. Geologic mapping indicates that the unit locally contains fresh-water mollusks and extinct late Pleistocene vertebrate fossils.[11] In addition, the University of California Museum of Paleontology database records show that similar deposits have yielded vertebrate fossils at eight different locations in San Mateo County.[14] These include fossils from a bison, mammoth, camel, horse, sloth and moose, as well as one bird species. The fossils were found in locations along the Pacific coast as well as along Skyline Drive in South San Francisco and along Middlefield Road in San Mateo County. However, the database did not have specific information on the location of the non-coastal fossils, and the presence and extent of paleontological resources beneath the Plan area is unknown.

For these reasons, Pleistocene alluvium is considered as a unit of high paleontological potential, per SVP criteria (Table 4.4-1).

Holocene Levee Deposits

Holocene levee deposits are loose, moderately to well-sorted sandy or clayey silt that border stream channels, usually both banks, and slope away to flatter flood plains and basins. Holocene-age (less than 10,000 years ago) deposits are considered too young to have fossilized the remains of organisms (fossilization processes take place over millions of years). However, early-Holocene sediments may contain organisms in the early stages of fossilization, but such organisms are unlikely to be extinct and are usually abundant in similar deposits. In addition, there is no record of fossils from such young deposits within San Mateo County in the University of California Museum of Paleontology collections database.[15]

For these reasons, Holocene levee deposits are considered as a unit of low paleontological potential, per SVP criteria (Table 4.4-1).

[14] University of California Museum of Paleontology (UCMP), *Collections Database*. Accessed Online August 20, 2009 at: http://www.ucmp.berkeley.edu/science/collections.php.
[15] UCMP, 2009.

4.4.2 Regulatory Setting

Federal

National Historic Preservation Act

Cultural resources are protected through the National Historic Preservation Act (NHPA) of 1966, as amended,[16] and its implementing regulations. Prior to implementing an "undertaking" (e.g., issuing a federal permit for a project, activity, or program funded in whole or in part under the direct or indirect jurisdiction of a federal agency, including those carried out by or on behalf of a federal agency; those carried out with federal assistance, those requiring a federal permit, license or approval; and subject to state or local regulation administered pursuant to a delegation or approval by a federal agency), Section 106 of the NHPA requires federal agencies to consider the effects of the undertaking on historic properties and to afford the Advisory Council on Historic Preservation a reasonable opportunity to comment on any undertaking ("find") that would adversely affect properties eligible for listing in the National Register. Under the NHPA, a "find" is considered significant if it meets the National Register listing criteria at 36 CFR 60.4, as stated below:

> The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association and
>
> a) That are associated with events that have made a significant contribution to the broad patterns of our history, or
>
> b) That are associated with the lives of persons significant in our past, or
>
> c) That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction, or
>
> d) That have yielded, or may be likely to yield, information important in prehistory or history.

Federal review of projects is normally referred to as the Section 106 process. This process is the responsibility of the federal lead agency. The Section 106 review normally involves a four-step procedure, which is described in detail in the implementing regulations (36 CFR Part 800):

- Identify historic properties in consultation with the State Historic Preservation Officer and interested parties;
- Assess the effects of the undertaking on historic properties;
- Consult with the State Historic Preservation Officer, other agencies, and interested parties to develop an agreement that addresses the treatment of historic properties and notify the Advisory Council on Historic Preservation; and finally,

[16] U.S. Code. National Historic Preservation Act of 1966 as amended, Public Law 102-575, Section 106 (16 U.S. Code 470f).

- Proceed with the project according to the conditions of the agreement.

Paleontological Resources Preservation Act

The federal Paleontological Resources Preservation Act (PRPA) of 2002 was enacted to codify the generally accepted practice of limiting the collection of vertebrate fossils and other rare and scientifically significant fossils to qualified researchers; these researchers must 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. The act also establishes penalties for illegal salvage of paleontological resources on public lands. This act incorporates key findings of a report, *Fossils on Federal Land and Indian Lands,* issued by the Secretary of Interior in 2000 which included input from staff of the Smithsonian Institution, United States Geological Society (USGS), various federal land management agencies, paleontological experts, and the public. The report establishes that most vertebrate fossils and some invertebrate and plant fossils are considered rare resources.[17]

State

The State of California implements the National Historic Preservation Act (NHPA) through its statewide comprehensive cultural resource surveys and preservation programs. The California Office of Historic Preservation (OHP), as an office of the California Department of Parks and Recreation, implements the policies of the NHPA on a statewide level. The OHP also maintains the California Historic Resources Inventory. The State Historic Preservation Officer is an appointed official who implements historic preservation programs within the state's jurisdictions.

California Public Resources Code

Several sections of the California Public Resources Code (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 permission.

California Register of Historical Resources

The California Register is "an authoritative listing and guide to be used by state and local agencies, private groups, and citizens in identifying the existing historical resources of the state and to indicate which resources deserve to be protected, to the extent prudent and feasible, from substantial adverse change" (California Public Resources Code [PRC] Section 5024.1[a]). The criteria for eligibility to the California Register are based on National Register criteria (PRC Section 5024.1[b]). Certain resources are determined by the statute to be automatically included in the California Register, including California properties formally eligible for or listed in the National Register.

[17] U.S. Department of the Interior. Fossils on Federal & Indian Lands, Report of the Secretary of the Interior, May 2000.

To be eligible for the California Register as a historical resource, a prehistoric or historic-period resource must be significant at the local, state, and/or federal level under one or more of the following criteria:

a) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;

b) Is associated with the lives of persons important in our past;

c) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; and/or

d) Has yielded, or may be likely to yield, information important in prehistory or history [14 CCR Section 4852(b)].

For a resource to be eligible for the California Register, it must also retain enough integrity to be recognizable as a historical resource and to convey its significance. A resource that does not retain sufficient integrity to meet the National Register criteria may still be eligible for listing in the California Register.

Senate Bill (SB) 18

Effective January 2005 and in conformance with SB 18, which was signed into law by the Governor of California in September 2004, starting on March 1, 2005 local governments are required to consult with tribes before making certain planning decisions and to provide notice to tribes at certain key points in the planning process. The intent is to "provide California Native American tribes an opportunity to participate in local land use decisions at an early planning stage, for the purpose of protecting, or mitigating impacts to, cultural places".[18]

According to the Tribal Consultation Guidelines: Supplement to General Plan Guidelines (2005), the following identifies the contact and notification responsibilities of local governments:

- Prior to the adoption or any amendment of a general plan or specific plan, a local government must notify the appropriate tribes (on the contact list maintained by the Native American Heritage Commission [NAHC]) of the opportunity to conduct consultations for the purpose of preserving, or mitigating impacts to, cultural places located on land within the local government's jurisdiction that is affected by the proposed plan adoption or amendment. Tribes have 90 days from the date on which they receive notification to request consultation, unless a shorter timeframe has been agreed to by the tribe (Government Code Section 65352.3).

- Prior to the adoption or substantial amendment of a general plan or specific plan, a local government must refer the proposed action to those tribes that are on the NAHC contact list and have traditional lands located within the city or county's jurisdiction. The referral must allow a 45-day comment period (Government Code Section 65352). Notice must be sent regardless of whether prior consultation has taken place. Such notice does not initiate a new consultation process.

[18] State of California. Senate Bill 18, *Traditional Tribal Cultural Places,* September 30, 2004.

- Local government must send a notice of a public hearing, at least 10 days prior to the hearing, to tribes who have filed a written request for such notice (Government Code Section 65092).

Local Regulations

City of Menlo Park

Section 16.54 of the City of Menlo Park Zoning Ordinance provides for an Historic Site District (H) for "the protection, enhancement, perpetuation and use of structures, sites and areas that are reminders of people, events or eras, or which provide significant examples of architectural styles and the physical surroundings in which past generations lived." This section of the ordinance allows the City Council to designate historical resources or sites, and restricts the Department of Community Development from approving or issuing a permit for any construction, alteration, removal or demolition of a designated structure, unless it is in keeping with various architectural controls provided in Section 16.68. For sites designated as historic landmarks, Section 16.68 requires that the Planning Commission make a finding that the proposed work will preserve, enhance or restore, and not damage or destroy the exterior architectural features of the landmark.

The City of Menlo Park maintains no local register of historic resources, but does have two historic properties protected by the (H) Historic Site District Zone. These are the 1886 Nativity of the Holy Virgin Church (Holy Trinity Episcopal Church/Russian Orthodox Church) at 1220 Crane Street, and the circa 1870 Edgar Mills/Bright Eagle Estate at 1040 Noel Drive. Both of these properties are located outside of, but near, the Plan area boundaries, as described previously.

The Land Use Element of the City of Menlo Park General Plan (1994) contains the following applicable policy with regard to the protection of cultural resources:

- *Policy I-H-11*: Buildings, objects, and sites of historic and/or cultural significance should be preserved.

The Open Space and Conservation Element of the City of Menlo Park General Plan (1973) also contains the following applicable goal with regard to the protection of cultural resources.

- *Policy 8*: To preserve historic buildings, objects, and sites of historic and cultural significance.

4.4.3 Impacts and Mitigation Measures

Significance Criteria

Implementation of the Plan would be considered to have significant cultural resources impacts if it would:

- Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5 of the CEQA Guidelines;

- Cause a substantial adverse change in the significance of a unique archaeological resource pursuant to Section 15064.5 of the CEQA Guidelines;

- Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature; or

- Disturb any human remains, including those interred outside of formal cemeteries.

Impacts

Impact CUL-1: The proposed Specific Plan could have a significant impact on historic architectural resources. (Potentially Significant)

Archival research in the project area has identified those historic resources as defined by CEQA that are located within the project area, which are listed and shown on **Figure 4.4-1**. These resources include buildings found eligible for listing in the National Register of Historic Places (such as the 1899 John Duff House and the Park Theater), included on California Register of Historic Resources and the National Register, (the 1863 Southern Pacific Railroad Station, CHL 955), and locally historic buildings (1910 Doughty's Meat Market/Kate Taylor Interiors).

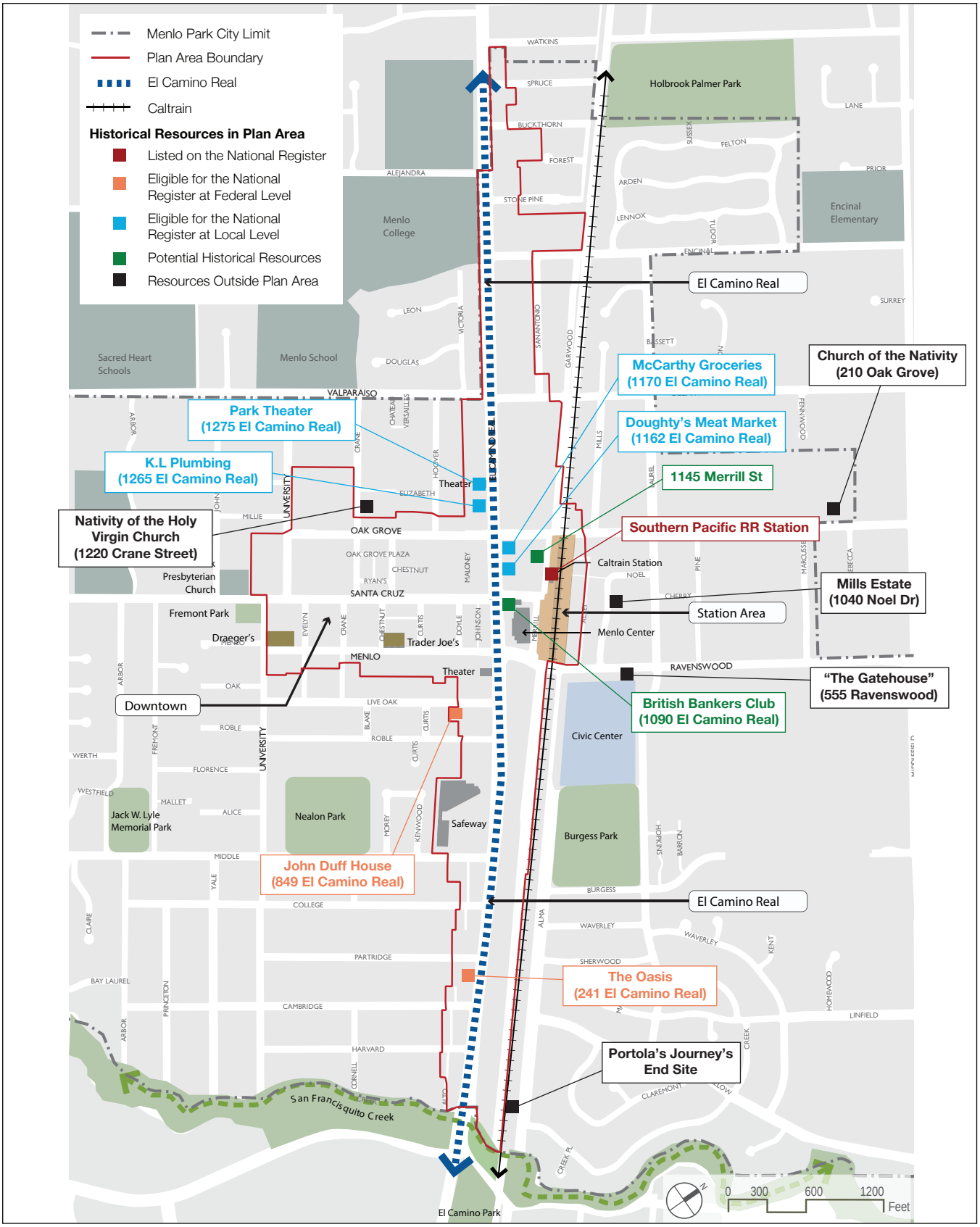
The Specific Plan recognizes the Plan area as the historic core of Menlo Park and contains policies designed to protect historic structures within the Specific Plan area. In particular:

- Menlo Park General Plan Goal 1-B calls for strengthening the Downtown while maintaining its historic atmosphere and character, while General Plan Policy 1-H-11 states that buildings, sites, and objects of historic significance should be preserved. To accomplish this, the Specific Plan requires buildings in the Downtown District to have minimal setbacks and address the street, consistent with the character of the historic downtown (Sections E.3.3 and E.4). Although buildings are permitted to be higher in some cases, the upper stories are required to be set back from the façade through the use of building profiles to preserve the historic scale of the Downtown when viewed by pedestrians.

  In the Station Area, at the eastern end of Santa Cruz Avenue, the Specific Plan proposes a Civic Plaza to integrate the historic Railroad Station with downtown and a landmark civic space that celebrates the Railroad Station (Section D.3). Standard D.3.01 requires preserving and highlighting the historic Railroad Station building, ensuring that the setting of this historic resource is not impaired.

- The Plan encourages the preservation and reuse of historic resources by allowing a bonus for such preservation. (Section E.3.1)

Chapter 4.1 of this EIR, *Aesthetic Resources*, analyzed the impacts of the Specific Plan on the setting of identified historic buildings and concluded that the visual character impacts of the Specific Plan would be less than significant. In particular, the Specific Plan requires massing controls in the downtown area to ensure that new development is consistent with existing and requires that any new development mimic historic patterns of narrow storefronts with facades that help to activate the street. The impact of shadows on historic buildings was specifically reviewed in Chapter 4.1 and found to have no significant impacts. The Plan's land use policies will not impair the setting of the identified historic resources.



SOURCE: Perkins + Will; City of Menlo Park

Menlo Park El Camino Real/Downtown Specific Plan EIR . 208581

Figure 4.4-1
Historical Resources in and Near the Plan Area

The Historic Site District designates historically, architecturally, or aesthetically significant buildings within the City of Menlo Park as designated landmark sites. It has not been applied to any sites in the Specific Plan Area. No changes to the existing Historic Site Zoning District are proposed by the Specific Plan, although historic sites could be added to the Historic Site District in the future.

In relation to the identified historic resources, substantial redevelopment of most resources is unlikely, either because substantial additional development is not permitted, the current improvements appear to be revenue-producing buildings in generally good condition, the structures are located on small/constrained parcels, and/or because the historic features are individual elements of larger existing developments that would be difficult to redevelop independently. Redevelopment is somewhat more likely to occur only at the Park Theatre at 1275 El Camino Real and the 1925 K.L. Plumbing Building at 1265 El Camino Real. Although no recent plans have been submitted for changes to any historic architectural resource in the Plan area, implementation of the Specific Plan could result in the demolition or alteration of historical resources, which would be considered a significant impact. Mitigation Measure CUL-1 would reduce these potential impacts to historic architectural resources to a less-than-significant level. In addition to historic resources as defined by CEQA, the Specific Plan area contains other buildings more than 50 years old that were not included in the 1990 survey because they were not of a sufficient age at the time. The proposed intensification of development could result in the demolition or alteration of historic structures not yet identified. Upon future review and evaluation, and depending on their physical integrity, some older buildings may be eligible for federal, State, and/or local historic designation. Implementation of the Specific Plan could result in the demolition or alteration of unidentified historical resources, which would be considered a significant impact.

The following mitigation measure would reduce impacts to historic architectural resources to a less-than-significant level.

> **Mitigation Measure CUL-1: Site Specific Evaluations and Treatment in Accordance with the Secretary of the Interior's Standards:**
>
> ***Site-Specific Evaluations*:** In order to adequately address the level of potential impacts for an individual project and thereby design appropriate mitigation measures, the City shall require project sponsors to complete site-specific evaluations at the time that individual projects are proposed at or adjacent to buildings that are at least 50 years old. The project sponsor shall be required to complete a site-specific historic resources study performed by a qualified architectural historian meeting the Secretary of the Interior's Standards for Architecture or Architectural History. At a minimum, the evaluation shall consist of a records search, an intensive-level pedestrian field survey, an evaluation of significance using standard National Register Historic Preservation and California Register Historic Preservation evaluation criteria, and recordation of all identified historic buildings and structures on California Department of Parks and Recreation 523 Site Record forms. The evaluation shall describe the historic context and setting, methods used in the investigation, results of the evaluation, and recommendations for management of identified resources. If federal or state funds are involved, certain agencies, such as the Federal Highway

Administration and California Department of Transportation (Caltrans), have specific requirements for inventory areas and documentation format.

Treatment in Accordance with the Secretary of the Interior's Standards. Any future proposed project in the Plan Area that would affect previously recorded historic resources, or those identified as a result of site-specific surveys and evaluations, shall conform to the *Secretary of the Interior's Standards for the Treatment of Historic Properties and Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings* (1995). The *Standards* require the preservation of character defining features which convey a building's historical significance, and offers guidance about appropriate and compatible alterations to such structures.

Significance after Mitigation: Less than Significant.

Archaeological Resources

Impact CUL-2: The proposed Specific Plan could impact currently unknown archaeological resources. (Potentially Significant)

The review of records and literature on file at the NWIC indicates that no prehistoric or historic-period archaeological resources have been previously recorded within the Plan area; however, numerous archaeological sites have been discovered all along the San Francsiquito Creek corridor just outside of the Plan area. No site-specific archaeological studies have been completed in the Plan area and there is a high potential for obscured or deeply buried archaeological resources. Implementation of **Mitigation Measure CUL-2a** and **Mitigation Measure CUL-2b** below would reduce potential impacts to archaeological resources to a less-than-significant level.

Mitigation Measure CUL-2a: When specific projects are proposed that involve ground disturbing activity, a site-specific cultural resources study shall be performed by a qualified archaeologist or equivalent cultural resources professional that will include an updated records search, pedestrian survey of the project area, development of a historic context, sensitivity assessment for buried prehistoric and historic-period deposits, and preparation of a technical report that meets federal and state requirements. If historic or unique resources are identified and cannot be avoided, treatment plans will be developed in consultation with the City and Native American representatives to mitigate potential impacts to less than significant based on either the Secretary of the Interior's Standards described in Mitigation Measure CUL-1 (if the site is historic) or the provisions of Public Resources Code Section 21083.2 (if a unique archaeological site).

Mitigation Measure CUL-2b: Should any archaeological artifacts be found during construction, all construction activities within 50 feet shall immediately halt and the City must be notified. A qualified archaeologist shall inspect the findings within 24 hours of the discovery. If the resource is determined to be a historical resource or unique resource, the archaeologist shall prepare a plan to identify, record, report, evaluate, and recover the resources as necessary, which shall be implemented by the developer. Construction within the area of the find shall not recommence until impacts on the historical or unique archaeological resource are mitigated as described in Mitigation Measure CUL-2a above. Additionally,

Public Resources Code Section 5097.993 stipulates that a project sponsor must inform project personnel that collection of any Native American artifact is prohibited by law.

Significance after Mitigation: Less than Significant.

Paleontological Resources

Impact CUL-3: The proposed Specific Plan may adversely affect unidentifiable paleontological resources. (Potentially Significant)

Impacts to paleontological resources would depend on both the degree of excavation that may occur as a result of a construction project allowable under the Specific Plan as well as the paleontological sensitivity of the area. The depth of excavation required to construct foundations for mixed-use, medium density structures is likely to be greater than the depth of existing fills and disturbed soils. While no information exists to refute or confirm the presence of fossils beneath the Plan area, because the majority of the Plan area is underlain by a geologic unit (Pleistocene alluvium) with high paleontological potential, subsurface excavations beyond previously disturbed soils could disturb or destroy paleontological resources. Therefore, impacts to paleontological resources would be potentially significant.

Mitigation Measure CUL-3 would reduce this impact to a less-than-significant level by educating earth moving crews on the appearance of fossils, procedures to follow if any are discovered, and ensuring that a paleontologist assess the significance of any fossil find, and recovers it, if appropriate.

Mitigation Measure CUL-3: Prior to the start of any subsurface excavations that would extend beyond previously disturbed soils, all construction forepersons and field supervisors shall receive training by a qualified professional paleontologist, as defined by the Society of Vertebrate Paleontology (SVP),[19] who is experienced in teaching non-specialists, to ensure they can recognize fossil materials and will follow proper notification procedures in the event any are uncovered during construction. Procedures to be conveyed to workers include halting construction within 50 feet of any potential fossil find and notifying a qualified paleontologist, who will evaluate its significance. Training on paleontological resources will also be provided to all other construction workers, but may involve using a videotape of the initial training and/or written materials rather than in-person training by a paleontologist. If a fossil is determined to be significant and avoidance is not feasible, the paleontologist will develop and implement an excavation and salvage plan in accordance with SVP standards.[20]

Significance after Mitigation: Less than Significant.

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[19] SVP, 1995.
[20] SVP, 1996.

Human Remains

Impact CUL-4: Implementation of the Plan may cause disturbance of human remains including those interred outside of formal cemeteries. (Potentially Significant)

Based upon the records search, no human remains are known to exist within the Plan area. However, the potential exists that construction could result in the disturbance of human remains, including those interred outside of formal cemeteries. Therefore, **Mitigation Measure CUL-4**, below, is required. Mitigation Measure CUL-4 would reduce impacts to human remains to a less-than-significant level.

Mitigation Measure CUL-4: If human remains are discovered during construction, CEQA Guidelines 15064.5(e)(1) shall be followed, which is as follows:

- In the event of the accidental discovery or recognition of any human remains in any location other than a dedicated cemetery, the following steps should be taken:

    1) There shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until:

        a) The San Mateo County coroner must be contacted to determine that no investigation of the cause of death is required; and

        b) If the coroner determines the remains to be Native American:

            1. The coroner shall contact the Native American Heritage Commission within 24 hours;

            2. The Native American Heritage Commission shall identify the person or persons it believes to be the most likely descended from the deceased Native American;

            3. The most likely descendent may make recommendations 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 Public Resources Code Section 5097.98; or

    2) Where the following conditions occur, the landowner or his authorized representative shall rebury the Native American human remains and associated grave goods with appropriate dignity on the property in a location not subject to further subsurface disturbance.

        a) The Native American Heritage Commission is unable to identify a most likely descendent or the most likely descendent failed to make a recommendation within 48 hours after being notified by the Commission.

        b) The descendant identified fails to make a recommendation; or

        c) The landowner or his authorized representative rejects the recommendation of the descendant, and the mediation by the Native American Heritage Commission fails to provide measures acceptable to the landowner.

Significance after Mitigation: Less than Significant.

Cumulative Impacts

The geographic context considered for the cumulative cultural resources impacts consists of the area surrounding the Plan area, which, when combined with the Plan area, could result in cumulative impacts. Given the nature of the potential impacts analyzed for this topic, the geographic scope would generally include projects within the Plan area and specifically those listed in Table 4-1.

Historic Architectural Resources

Impact CUL-5: The Specific Plan, in combination with past, present, existing, approved, pending, and reasonably foreseeable future development in the vicinity of the Plan area that would involve demolition of historical resources, could form a significant cumulative impact to historical resources. (Less than Significant)

Development under the Specific Plan could result in the demolition of historical resources for CEQA purposes. Other past, present, existing, approved, pending, and reasonably foreseeable future projects in Menlo Park that have, or will have, resulted in the demolition of historical resources could combine with the Specific Plan projects to form a significant cumulative impact to historical resources. However, there are no past, present, existing, approved, pending, and reasonably foreseeable future projects in the project vicinity that would demolish historical resources, or have the potential to form a significant cumulative impact. In addition, continuation of existing General Plan policies which call for the protection of historic resources, as well as the continued application of the (H) Historic Site District, would further reduce the potential for significant cumulative impacts to historic resources, should such resources be threatened in the future.

Mitigation: None required.

Archaeological and Paleontological Resources

Impact CUL-6: Construction under the Specific Plan in combination with construction from other past, present, existing, approved, pending, and reasonably foreseeable future development in the vicinity could cause a significant cumulative impact to currently unknown cultural resources at the site, potentially including an archaeological resource pursuant to CEQA Guidelines Section 15064.5 or CEQA Section 21083.2(g), or the disturbance of any human remains, including those interred outside of formal cemeteries, as well as paleontological resources. (Less than Significant)

Although neither the Plan area nor any of the projects in Table 4-1 has the potential to impact known archaeological or paleontological resources, and because such resources may exist anywhere in Menlo Park, accidental damage to previously unknown resources may occur due to

ground-disturbing activities from any or all of the construction projects. In the unlikely event that such impacts were to occur with all of these projects, they could combine to form a significant cumulative impact to archaeological and paleontological resources. However, Mitigation Measures CUL-2a and CUL-2b, CUL-3, and CUL-4, or similar, would be (or are currently being) implemented by these cumulative setting projects to reduce such impacts to a less-than-significant level. Therefore, cumulative impacts to archaeological or paleontological resources are anticipated to be less than significant.

Mitigation: None required.

4.5 Geology, Soils, and Seismicity

This section describes geologic and seismic conditions in the project vicinity and evaluates the potential for the proposed plan to result in significant impacts related to exposing people or structures to unfavorable geologic hazards, soils, and/or seismic conditions. Potential impacts are discussed and evaluated, and appropriate mitigation measures are identified where necessary.

4.5.1 Environmental Setting

Regional

The Plan area is located within the Coast Ranges geomorphic province of California. The Coast Ranges province is the largest of the state's geomorphic provinces extending approximately 400 miles from the Klamath Mountains (near northern Humboldt County) to the Santa Ynez River in Santa Barbara County. The province is characterized by a series of northwest trending mountain ridges and valleys, running generally parallel to the San Andreas Fault zone. These mountain ridges and valleys have been formed by tectonic forces that compressed ancient sedimentary deposits over the course of millions of years. The Coast Ranges can be further divided into the northern and southern ranges which are separated by the San Francisco Bay. The San Francisco Bay lies within a broad depression created from an east-west expansion between the San Andreas and the Hayward fault systems.

The Northern Coast Ranges are comprised largely of the Franciscan Complex or Assemblage, which consists primarily of graywacke, shale, greenstone (altered volcanic rocks), basalt, chert (ancient silica-rich ocean deposits), and sandstone that originated as ancient sea floor sediments. Franciscan rocks are overlain by volcanic cones and flows of the Quien Sabe, Sonoma and Clear Lake volcanic fields.[1]

Local

The Plan area is located along the eastern alluvial plains of the Santa Cruz Mountains which run northwest along the spine of the San Francisco peninsula. East of the Santa Cruz Mountains, numerous drainages have carried alluvial deposits toward the bay for thousands of years. Thick alluvial deposits of clays, silts, sands and gravels generally make up the underlying materials with bedrock found at depths of up to approximately one thousand feet.

Soils

Surface soils generally exhibit various characteristics dependent on location, slope, parent rock, climate, and drainage. The Plan area is located in a fully developed area where native soils are unlikely to still be present. Generally, previous development within the planning area has been reworked or replaced to the extent that native surface soils are no longer present with their original characteristics.

[1] California Geological Survey (CGS), *California Geomorphic Provinces*, CGS Note 36, 2002.

Seismicity

The Plan area lies within an area that contains many active and potentially active faults and is considered to be an area of high seismic activity.[2] The United States Geological Survey (USGS) Working Group on California Earthquake Probabilities evaluated the probability of one or more earthquakes of Richter magnitude 6.7 or higher occurring in the San Francisco Bay Area within the next 30 years.[3] The result of the evaluation indicated a 63 percent likelihood that such an earthquake event will occur in the Bay Area before 2037.[4]

Ground movement during an earthquake can vary depending on the overall magnitude, distance to the fault, focus of earthquake energy, and type of geologic material. The composition of underlying soils, even those relatively distant from faults, can intensify ground shaking. For this reason, earthquake intensities are also measured in terms of their observed effects at a given locality. The Modified Mercalli (MM) intensity scale is commonly used to measure earthquake damage due to ground shaking. The MM values for intensity range from I (earthquake not felt) to XII (damage nearly total), and intensities ranging from VI to X can cause moderate to extreme structural damage.[5] The intensities of an earthquake will vary over the region of a fault and generally decrease with distance from the epicenter of the earthquake. The MM intensity scale values are described in more detail in **Table 4.5-1**.

According to the Association of Bay Area Governments (ABAG) Shaking Intensity Maps and Information, the Plan area is located in an area subject to "very strong" ground shaking (Modified Mercalli Intensity VIII) from earthquakes along the San Andreas fault (similar to the 1906 Earthquake), and "strong" ground shaking (Modified Mercalli Intensity VII) from a magnitude 6.9 event on the Hayward fault.[6]

The San Andreas fault is the closest fault to the project area and poses a substantial threat of damage in the Plan area. Located approximately seven miles west of the Plan area, the San Andreas fault caused considerable damage in 1906 and 1989. The USGS Working Group on

[2] An "active" fault is defined by the State of California as a fault that has had surface displacement within Holocene time (approximately the last 11,000 years). A "potentially active" fault is defined as a fault that has shown evidence of surface displacement during the Quaternary (last 1.6 million years), unless direct geologic evidence demonstrates inactivity for all of the Holocene or longer. This definition does not, of course, mean that faults lacking evidence of surface displacement are necessarily inactive. "Sufficiently active" is also used to describe a fault if there is some evidence that Holocene displacement occurred on one or more of its segments or branches (Hart, 1997).

[3] Richter magnitude is a measure of the size of an earthquake as recorded by a seismograph. Richter magnitudes vary logarithmically, with each whole number step representing a ten-fold increase in the amplitude of the recorded seismic waves. Earthquake magnitudes are also measured by their Moment Magnitude (Mw) which is related to the physical characteristics of a fault including the rigidity of the rock, the size of fault rupture, and movement or displacement across a fault.

[4] United States Geological Survey (USGS) Working Group on California Earthquake Probabilities (WG07), Fact Sheet 2008-3027, *Forecasting California's Earthquakes – What Can We Expect in the Next 30 Years?*, available online at http://pubs.usgs.gov/fs/2008/3027/fs2008-3027.pdf, 2008.

[5] The damage level represents the estimated overall damage that will occur for various MM intensity levels. Damage, however, is not uniform, as the age, material, type, method of construction, size, and shape of a building all affect its performance.

[6] Association of Bay Area Governments (ABAG), *Modeled Shaking Intensity Maps for San Mateo, 1906 San Francisco Earthquake*, http://www.abag.ca.gov/cgi-bin/pickmapx.pl, accessed July 14, 2009.

TABLE 4.5-1
MODIFIED MERCALLI INTENSITY SCALE

Intensity Value	Intensity Description	Average Peak Acceleration (% g[a])
I	Not felt except by a very few persons under especially favorable circumstances.	< 0. 17 g
II	Felt only by a few persons at rest, especially on upper floors on buildings. Delicately suspended objects may swing.	0.17-1.4 g
III	Felt noticeably indoors, especially on upper floors of buildings, but many people do not recognize it as an earthquake. Standing motor cars may rock slightly, vibration similar to a passing truck. Duration estimated.	0.17-1.4 g
IV	During the day felt indoors by many, outdoors by few. At night, some awakened. Dishes, windows, doors disturbed; walls make cracking sound. Sensation like heavy truck striking building. Standing motor cars rocked noticeably.	1.4–3.9g
V	Felt by nearly everyone, many awakened. Some dishes and windows broken; a few instances of cracked plaster; unstable objects overturned. Disturbances of trees, poles may be noticed. Pendulum clocks may stop.	3.5 – 9.2 g
VI	Felt by all, many frightened and run outdoors. Some heavy furniture moved; and fallen plaster or damaged chimneys. Damage slight.	9.2 – 18 g
VII	Everybody runs outdoors. Damage negligible in buildings of good design and construction; slight to moderate in well-built ordinary structures; considerable in poorly built or badly designed structures; some chimneys broken. Noticed by persons driving motor cars.	18 – 34 g
VIII	Damage slight in specially designed structures; considerable in ordinary substantial buildings, with partial collapse; great in poorly built structures. Panel walls thrown out of frame structures. Fall of chimneys, factory stacks, columns, monuments, walls. Heavy furniture overturned. Sand and mud ejected in small amounts. Changes in well water. Persons driving motor cars disturbed.	34 – 65 g
IX	Damage considerable in specially designed structures; well-designed frame structures thrown out of plumb; great in substantial buildings, with partial collapse. Buildings shifted off foundations. Ground cracked conspicuously. Underground pipes broken.	65 – 124 g
X	Some well-built wooden structures destroyed; most masonry and frame structures destroyed with foundations; ground badly cracked. Rails bent. Landslides considerable from riverbanks and steep slopes. Shifted sand and mud. Water splashed (slopped) over banks.	> 124 g
XI	Few, if any, (masonry) structures remain standing. Bridges destroyed. Broad fissures in ground. Underground pipelines completely out of service. Earth slumps and land slips in soft ground. Rails bent greatly.	> 1.24 g
XII	Damage total. Practically all works of construction are damaged greatly or destroyed. Waves seen on ground surface. Lines of sight and level are distorted. Objects are thrown upward into the air.	> 1.24 g

[a] g (gravity) = 980 centimeters per second squared. 1.0 g of acceleration is a rate of increase in speed equivalent to a car traveling 328 feet from rest in 4.5 seconds.

SOURCE: Association of Bay Area Governments (ABAG), *Modified Mercalli Intensity Scale* available online at http://www.abag.ca.gov/bayarea/eqmaps/doc/mmi.html, 2003; California Geological Survey (CGS), *Background Information on the ShakeMaps*, available online at http://earthquake.usgs.gov/eqcenter/shakemap/background.php, 2003.

California Earthquake Probabilities includes the San Andreas Fault Systems in the list of those faults that have the highest probability of generating earthquakes of magnitude 6.7 or greater in the Bay Area.[7]

Regional Faults

The San Andreas, Hayward and Calaveras Faults pose the greatest threat of earthquake-related damage in the Bay Area according to the USGS Working Group.[8] These three faults exhibit strike-slip orientation and have experienced movement within the last 150 years.[9] Other principal faults capable of producing substantial ground shaking in the Bay Area include the Concord, Greenville, San Gregorio (including Seal Cove segment) and Rodgers Creek (northern extension of the Hayward Fault) Faults (**Figure 4.5-1**).

San Andreas Fault

The San Andreas Fault Zone is a major structural feature that forms at the boundary between the North American and Pacific tectonic plates, extending from the Salton Sea in Southern California near the border with Mexico to north of Point Arena, where the fault trace extends out into the Pacific Ocean. The main trace of the San Andreas fault through the Bay Area trends northwest through the Santa Cruz Mountains and the eastern side of the San Francisco Peninsula. As the principal strike-slip boundary between the Pacific plate to the west and the North American plate to the east, the San Andreas is often a highly visible topographic feature, such as between Pacifica and San Mateo, where Crystal Springs Reservoir and San Andreas Lake clearly mark the rupture zone. Near San Francisco, the San Andreas Fault trace is located immediately off-shore near Daly City and continues northwest through the Pacific Ocean approximately six miles due west of the Golden Gate Bridge.

In the San Francisco Bay Area, the San Andreas Fault Zone was the source of the two major seismic events in recent history that affected the San Francisco Bay region. The 1906 San Francisco earthquake was estimated at magnitude 7.9 and resulted in approximately 290 miles of surface fault rupture, the longest of any known continental strike slip fault. Horizontal displacement along the fault approached 17 feet near the epicenter. The more recent 1989 Loma Prieta earthquake, with a Moment magnitude (Mw) of 6.9, resulted in widespread damage throughout the Bay Area.

Hayward Fault

The Hayward Fault Zone is the southern extension of a fracture zone that includes the Rodgers Creek Fault (north of San Pablo Bay), the Healdsburg fault (Sonoma County), and the Maacama fault (Mendocino County).

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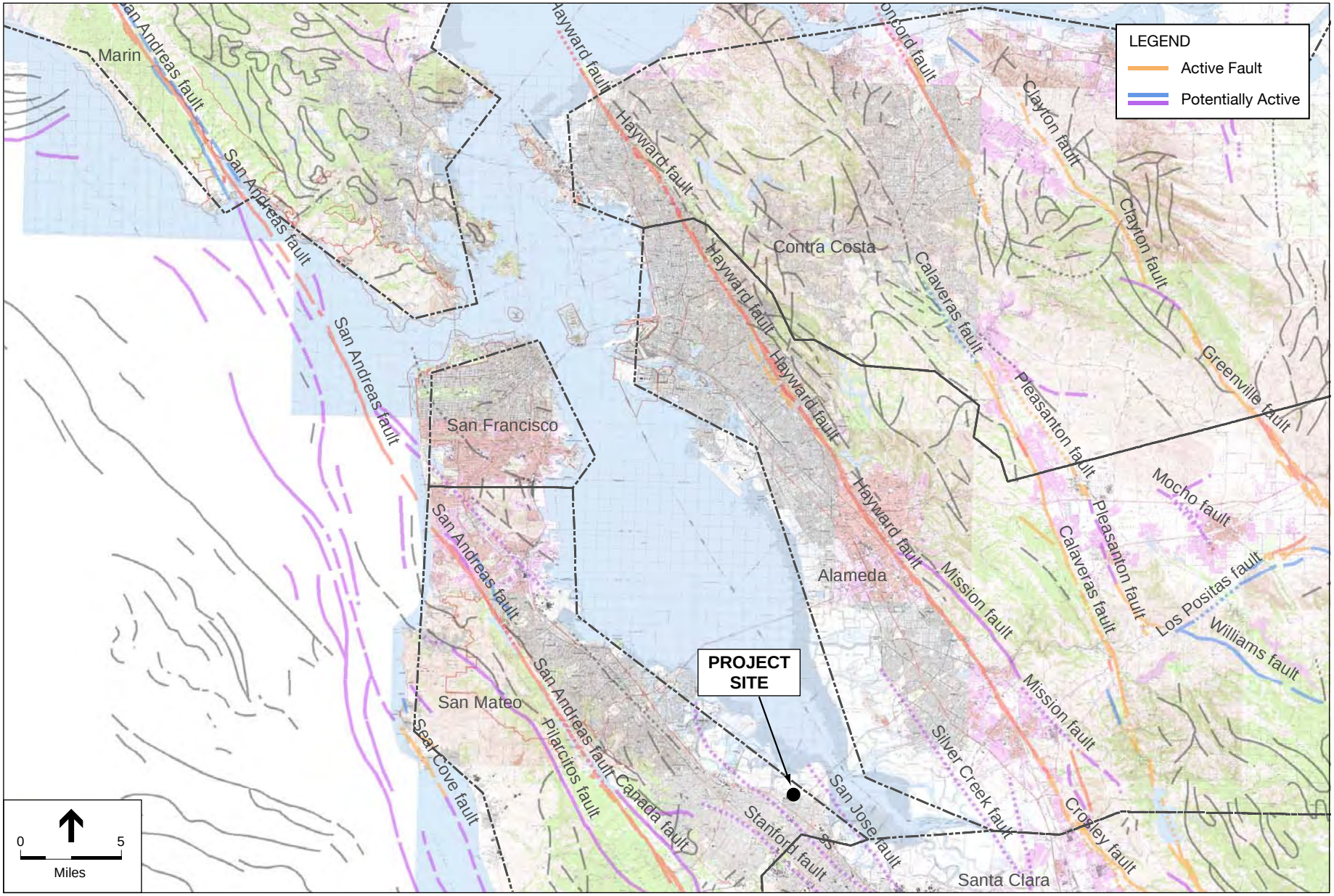
7 United States Geological Survey (USGS) Working Group on California Earthquake Probabilities (WG07), Fact Sheet 2008-3027, *Forecasting California's Earthquakes – What Can We Expect in the Next 30 Years?*, available online at http://pubs.usgs.gov/fs/2008/3027/fs2008-3027.pdf, 2008.

8 United States Geological Survey, *USGS Fact Sheet 039-03*, Working Group 02, 2003.

9 A strike-slip fault is a fault on which movement is parallel to the fault's strike or lateral expression at the surface.



SOURCE: Jennings, 1994

Figure 4.5-1
Regional Fault Map

The Hayward fault trends to the northwest within the East Bay, extending from San Pablo Bay in Richmond, 60 miles south to San Jose. The Hayward fault in San Jose converges with the Calaveras fault, a similar type fault that extends north to Suisun Bay. The Hayward fault is designated by the Alquist-Priolo Earthquake Fault Zoning Act as an active fault.

Historically, the Hayward fault generated one sizable earthquake in the 1800s.[10] In 1868, a Richter magnitude 7 earthquake on the southern segment of the Hayward Fault ruptured the ground for a distance of about 30 miles. Recent analysis of geodetic data indicates surface deformation may have extended as far north as Berkeley. Lateral ground surface displacement during these events was at least 3 feet.

A characteristic feature of the Hayward fault is its well-expressed and relatively consistent fault creep. Although large earthquakes on the Hayward fault have been rare since 1868, slow fault creep has continued to occur and has caused measurable offset. Fault creep on the East Bay segment of the Hayward fault is estimated at 9 millimeters per year (mm/yr).[11] However, a large earthquake could occur on the Hayward fault with an estimated Moment magnitude 7.1 (**Table 4.5-2**). The USGS Working Group on California Earthquake Probabilities includes the Hayward–Rodgers Creek Fault Systems in the list of those faults that have the highest probability of generating earthquakes of magnitude 6.7 or greater in the Bay Area.[12]

Calaveras Fault

The Calaveras fault is a major right-lateral strike-slip fault that has been active during the last 11,000 years. The Calaveras Fault is located in the eastern San Francisco Bay region and generally trends along the eastern side of the East Bay Hills, west of San Ramon Valley, and extends into the western Diablo Range, and eventually joins the San Andreas Fault Zone south of Hollister. The northern extent of the fault zone is somewhat conjectural and could be linked with the Concord Fault.

The fault separates rocks of different ages, with older rocks west of the fault and younger sedimentary rocks to the east. The location of the main, active fault trace is defined by youthful geomorphic features (linear scarps and troughs, right-laterally deflected drainage, sag ponds) and local groundwater barriers. The Calaveras fault is designated as an Alquist-Priolo Earthquake Hazard Zone (see discussion on this zone designation below). There is a distinct change in slip rate and fault behavior north and south of the vicinity of Calaveras Reservoir. North of Calaveras Reservoir, the fault is characterized by a relatively low slip rate of 5-6 mm/yr and sparse seismicity. South of Calaveras Reservoir, the fault zone is characterized by a higher rate of surface fault creep that has been evidenced in historic times. The Calaveras Fault has been the source of numerous moderate magnitude earthquakes and the probability of a large earthquake

[10] Prior to the early 1990s, it was thought that a Richter magnitude 7 earthquake occurred on the northern section of the Hayward Fault in 1836. However, a study of historical documents by the California Geological Survey concluded that the 1836 earthquake was not on the Hayward Fault (Bryant, 2000).

[11] Peterson, M.D., Bryant, W.A., Cramer, C.H., Probabilistic Seismic Hazard Assessment for the State of California, California Division of Mines and Geology Open-File Report issued jointly with U.S. Geological Survey, CDMG 96-08 and USGS 96-706, 1996.

[12] United States Geological Survey, *USGS Fact Sheet 039-03*, Working Group 02, 2003.

TABLE 4.5-2
ACTIVE FAULTS IN THE PLAN AREA VICINITY

Fault	Distance and Direction from Project	Recency of Movement	Fault Classification[a]	Historical Seismicity[b]	Maximum Moment Magnitude Earthquake (Mw)[c]
San Andreas	7 miles southwest	Historic (1906; 1989 ruptures)	Active	M 7.1, 1989 M 8.25, 1906 M 7.0, 1838 Many <M 6	7.9
Hayward	12 miles northeast	Historic (1868 rupture)	Active	M 6.8, 1868 Many <M 4.5	7.1
San Gregorio	18 miles southwest	Prehistoric (Sometime prior to 1775 but after 1270 A.D.)	Active	n/a	7.3
Calaveras	17 miles east	Historic (1861 1911, 1984)	Active	M 5.6– M 6.4, 1861 M 6.2, 1911, 1984	6.8

[a] See footnote 2.
[b] Richter magnitude (M) and year for recent and/or large events. The Richter magnitude scale reflects the maximum amplitude of a particular type of seismic wave.
[c] Moment Magnitude (Mw) is related to the physical size of a fault rupture and movement across a fault. Moment magnitude provides a physically meaningful measure of the size of a faulting event (California Geological Survey, 2002). The Maximum Moment Magnitude Earthquake, derived from the joint California Geological Survey/USGS Probabilistic Seismic Hazard Assessment for the State of California, 1996. (Peterson, 1996).

SOURCES: Hart, E. W., Fault-Rupture Hazard Zones in California: Alquist-Priolo Special Studies Zones Act of 1972 with Index to Special Studies Zones Maps, California Division of Mines and Geology, Special Publication 42, 1990, revised and updated 1997.; Jennings, C. W., Fault Activity Map of California and Adjacent Areas, California Division of Mines and Geology Data Map No. 6, 1:750,000, 1994.; Peterson, M.D., Bryant, W.A., Cramer, C.H., Probabilistic Seismic Hazard Assessment for the State of California, California Division of Mines and Geology Open-File Report issued jointly with U.S. Geological Survey, CDMG 96-08 and USGS 96-706, 1996.

(greater than magnitude 6.7) is much lower than on the San Andreas or Hayward Faults.[13] However, this fault is considered capable of generating earthquakes with upper bound magnitudes ranging from Mw 6.6 to magnitude 6.8.

San Gregorio fault

The San Gregorio Fault Zone is a complex of faults that skirt the coastline North of Big Sur, run northwestward across Monterey Bay, briefly touching the shoreline of the San Mateo County coastline at Point Ano Nuevo and at Seal Cove, just North of Half Moon Bay. This fault is an active fault that has been recently recognized as capable of producing large earthquakes. Recent studies have shown Holocene displacement on the San Gregorio Fault, as recently as 1270 AD to 1400 AD.[14] Additionally, a 1929 earthquake with magnitude above 6.0, thought to have occurred

[13] United States Geological Survey, *USGS Fact Sheet 039-03*, Working Group 02, 2003.
[14] Bryant, W.A., and Cluett, S.E., compilers, Fault number 60a, San Gregorio fault zone, San Gregorio section, in Quaternary fault and fold database of the United States: U.S. Geological Survey website, also available at http://gldims.cr.usgs.gov/webapps/cfusion/sites/qfault/qf_web_disp.cfm?qfault_or=1397&ims_cf_cd=cf&disp_cd=C, 1999.

on the Monterey Fault, may have actually ruptured an offshore segment of the San Gregorio Fault Zone. According to the working group on earthquake probabilities, the San Gregorio Fault has a 10 percent chance of producing one or more M 6.7 earthquakes in the next 30 years.[15]

Seismic Hazards

Ground Shaking

Strong ground shaking from a major earthquake could affect the Plan area during the next 30 years. An earthquake on any one of the active faults mentioned above could potentially produce a range of ground shaking intensities at the Plan area. Ground shaking may affect areas hundreds of miles distant from the earthquake's epicenter. Historic earthquakes have caused strong ground shaking and damage in the San Francisco Bay Area, the most recent being the Loma Prieta earthquake (moment magnitude 6.9) in October 1989. The epicenter was approximately 50 miles southeast of the Plan area, and the earthquake caused strong ground shaking for about 20 seconds and resulted in varying degrees of structural damage.

Surface Fault Rupture

Seismically induced ground rupture is defined as the physical displacement of surface deposits in response to an earthquake's seismic waves. The magnitude, sense, and nature of fault rupture can vary for different faults or even along different strands of the same fault. Ground rupture is considered more likely along active faults, which are referenced in Table 4.5-2.

The Plan area is not within an Alquist-Priolo Fault Rupture Hazard Zone, as designated through the Alquist-Priolo Earthquake Fault Zoning Act, and no mapped active faults are known to pass through the immediate project region. Therefore, the risk of ground rupture within the Plan area is very low.

Liquefaction

Liquefaction is a transformation of soil from a solid to a liquefied state during which saturated soil temporarily loses strength resulting from the buildup of excess pore water pressure, especially during earthquake-induced cyclic loading. Soils susceptible to liquefaction include saturated loose to medium dense sands and gravels, low-plasticity silts, and some low-plasticity clay deposits. Liquefaction and associated failures could damage foundations, disrupt utility service, and can cause damage to roadways.

The California Geological Survey has prepared Seismic Hazard maps for liquefaction potential in many areas located around the bay. According to the map that covers the Plan area; the majority of the Plan area is outside of the liquefaction area. However, the southernmost end of the Plan

[15] United States Geological Survey (USGS) Working Group on California Earthquake Probabilities (WG07), Fact Sheet 2008-3027, *Forecasting California's Earthquakes – What Can We Expect in the Next 30 Years?*, available online at http://pubs.usgs.gov/fs/2008/3027/fs2008-3027.pdf, 2008.

area within a block of Creek Drive, adjacent to San Francisquito Creek, is shown as having a high potential for liquefaction.[16]

Landslides

Slope failures, commonly referred to as landslides, include many phenomena that involve the downslope displacement and movement of material. Landslides may occur on slopes of 15 percent or less; however, the probability is greater on steeper slopes. The Plan area generally consists of relatively gently sloping developed topography that has a low likelihood of landslides or debris flows.

Geologic Hazards

Considering the geologic context of the project area and nature of the project, other typical geologic hazards could include soil erosion and expansive soil materials. These hazards are discussed briefly here.

Expansive Soils

Expansive soils are characterized by their potential "shrink-swell" behavior. Shrink-swell is the cyclic change in volume (expansion and contraction) that occurs in certain fine-grained clay sediments from the process of wetting and drying. Clay minerals such as smectite, bentonite, montmorillonite, beidellite, vermiculite and others are known to expand with changes in moisture content. The higher the percentage of expansive minerals present in near surface soils, the higher the potential for substantial expansion. The greatest effects occur when there are large or repeated moisture content changes. Expansions of ten percent or more in volume are not uncommon. This change in volume can exert enough force on a building or other structure to cause cracked foundations, floors and basement walls. Damage to the upper floors of the building can also occur when movement in the foundation is extensive. Structural damage typically occurs over a long period of time, usually the result of inadequate soil and foundation engineering or the placement of structures directly on expansive soils.

4.5.2 Regulatory Setting

California Building Code

The California Building Code (CBC) has been codified in the California Code of Regulations (CCR) as Title 24, Part 2. Title 24 is administered by the California Building Standards Commission, which, by law, is responsible for coordinating all building standards. Under state law, all building standards must be centralized in Title 24 or they are not enforceable. The purpose of the CBC is to establish minimum standards to safeguard the public health, safety and general welfare through structural strength, means of egress facilities, and general stability by regulating and controlling the design, construction, quality of materials, use and occupancy,

[16] California Geological Survey, Seismic Hazard Zones Palo Alto Quadrangle, October 18, 2006.

location, and maintenance of all building and structures within its jurisdiction. The 2007 CBC is based on the 2006 International Building Code (IBC) published by the International Code Conference. In addition, the CBC contains necessary California amendments which are based on the American Society of Civil Engineers Minimum Design Standards 7-05. American Society of Civil Engineers 7-05 provides requirements for general structural design and includes means for determining earthquake loads as well as other loads (flood, snow, wind, etc.) for inclusion into building codes. The provisions of the CBC apply to the construction, alteration, movement, replacement, and demolition of every building or structure or any appurtenances connected or attached to such buildings or structures throughout California.

The earthquake design requirements take into account the occupancy category of the structure, site class, soil classifications, and various seismic coefficients which are used to determine a Seismic Design Category for a project. The Seismic Design Category is a classification system that combines the occupancy categories with the level of expected ground motions at the site and ranges from Seismic Design Category A (very small seismic vulnerability) to E/F (very high seismic vulnerability and near a major fault). Design specifications are then determined according to the Seismic Design Category.

The City of Menlo Park currently enforces the 2007 California Building Code Volumes 1 and 2, as published by the International Code Council and amended by the State of California and the City of Menlo Park. Effective January 1, 2011, the 2010 California Building Code is in effect.

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act of 1990 was developed to protect the public from the effects of strong ground shaking, liquefaction, landslides, or other ground failure, and from other hazards caused by earthquakes. This act requires the State Geologist to delineate various seismic hazard zones and requires cities, counties, and other local permitting agencies to regulate certain development projects within these zones. Before a development permit may be granted for a site within a Seismic Hazard Zone, a geotechnical investigation of the site must be conducted and appropriate mitigation measures incorporated into the project design. A very small part of the Plan area is located within a Seismic Hazard Zone for liquefaction, as designated by the California Geological Survey. Therefore, evaluation and mitigation of potential liquefaction hazards in that area must be conducted in accordance with the California Geological Survey, Special Publication 117, adopted March 13, 1997 by the State Mining and Geology Board pursuant to the Seismic Hazards Mapping Act, as discussed in the Impacts and Mitigations section below.

Local Plans and Policies

Menlo Park General Plan

The City of Menlo Park has established goals, policies and programs in regards to geologic hazards within the *Menlo Park General Plan*. The following relevant policies are summarized below:

- **Land Use Element**

  Policy I-H-9: Urban development in areas with geologic and earthquake hazards, flood hazards, and fire hazards shall be regulated in an attempt to prevent loss of life, injury, and property damage.

- **Seismic Safety and Safety Element**

  Future Land Use Policy 11: Require submission of geologic, seismic, and/or soils reports prior to taking action on development proposals for locations identified as potential problem areas in this element.

  Future Land Use Policy 13: Require that all new development incorporate adequate hazard mitigation measures to reduce risks from natural hazards.

  Future Land Use Policy 15: Require that potential geologic, seismic, soils, and/or hydrologic problems confronting public or private development be thoroughly investigated at the earliest stages of the design process, and that these topics be comprehensively evaluated in the Environmental Impact Report for each project, by persons of competent geologic expertise.

4.5.3 Impacts and Mitigation Measures

Significance Criteria

Implementation of the Plan would be considered to have significant impacts on geology, soils, and seismicity if it would:

- Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:
  - 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;
  - Strong seismic ground shaking;
  - Seismic-related ground failure, including liquefaction; and/or
  - Landslides.
- Result in substantial soil erosion or the loss of topsoil.
- Be located on geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse.
- Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property.[17]

[17] The CEQA guidelines have not been updated to reflect the latest changes to the use of the International Building Code as the basis for the California Building Code.

- Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater.

The Plan area is located within a developed area that is currently serviced by a centralized sanitary sewer collection system. All proposed development and redevelopment would tie into this existing system and would not require septic tanks or any alternative wastewater disposal system. Therefore, there would be no impact related to the capability of soils to support the use of such systems, and the last criterion, above, is not applicable to the proposed Specific Plan project.

Impacts

Excavation, Grading, and Construction Impacts

Impact GEO-1: In the event of a major earthquake in the region, surface fault rupture, ground shaking, localized liquefaction, and/or seismic-related landsliding could cause damage, destruction or injury to development anticipated under the proposed Specific Plan. (Less than Significant)

According to modeling conducted by USGS in conjunction with the California Geological Survey, the San Francisco Bay Area would likely experience at least one major earthquake (greater than moment magnitude 6.7) within the next 30 years. The intensity of such an event would depend on the causative fault and the distance to the epicenter, the magnitude, the duration of shaking, and the characteristics of the underlying geologic materials.

There are no active faults that run through or adjacent to the Plan area. The nearest active fault to the Plan area is the San Andreas fault which is located approximately seven miles southwest. The Stanford fault, a potentially active fault, intersects the Plan area between Ravenswood and Oak Grove Avenues southwest of El Camino Real. The Stanford fault has shown evidence of displacement sometime between 11,000 and 1.6 million years ago. Surface displacement on this fault cannot be ruled out entirely but would be considered unlikely based on the lack of any recent activity. The Alquist-Priolo regulations would not apply to the Stanford fault because the Alquist-Priolo Act applies only to recognized active faults.

In general, ground shaking tends to be more severe in softer sediments such as alluvial deposits where surface waves can be amplified causing a longer duration of ground shaking compared to bedrock materials. Areas where bedrock is exposed or located relatively shallow tends to experience surface waves from an earthquake as more of a sharp jolt. In the Plan area, underlying deposits generally consist of alluvial deposits of varying thicknesses with no near surface occurrences of bedrock. Therefore, throughout the Plan area there is a potential for improvements to experience substantial ground shaking.

Liquefaction typically occurs in areas underlain with loose saturated cohesionless soils within the upper 50 feet of subsurface materials. These soils, when subjected to groundshaking, can lose their strength resulting from the buildup of excess pore water pressure causing them to behave closer to a liquidified state. According to mapping compiled by the California Geological Survey, small areas at the southern end of the Plan area could be especially prone to liquefaction hazards. However,

development in areas located within a liquefaction Seismic Hazard Zone would be required to adhere to the requirements of the Seismic Hazards Act and Special Publication 117. In general, determining the actual potential for liquefaction requires site specific data that is analyzed on a case by case basis. Unreinforced masonry buildings and other buildings constructed prior to the 1930s that have not undergone seismic upgrades would be expected to incur the greatest structural damage. Damage from earthquake-induced ground failure could be high in buildings constructed on improperly engineered fills or saturated alluvial sediments that have not received adequate compaction or treatment.

Earthquake-induced landslides could occur in unstable upland areas to the west and southwest of the Plan area. Landslides may occur on slopes of 15 percent or less; however, the probability is greater on steeper slopes that exhibit old landslide features such as scarps, slanted vegetation, and transverse ridges. The Plan area is relatively flat and has a low potential for earthquake-induced landslides.

For newly constructed structures, all of the aforementioned seismic hazards can generally be mitigated through the application of current industry standard geotechnical practices and seismic structural design according to the requirements found in the most recent version of the California Building Code and Special Publication 117, where applicable. Moreover, major development is typically subject to site-specific analysis of seismic and other geologic risk. After decades of study of past earthquakes and the performance of structures and other improvements, building codes have incorporated measures to reduce the potential for catastrophic damage to occur in buildings, roadways, and utility connections. Although damage and injury cannot be completely avoided during a major seismic event, adherence to building code requirements would reduce the potential damage and personal injury to what is generally recognized to be an acceptable level. Therefore this would be a less-than-significant impact.

Mitigation: None required.

Impact GEO-2: New development or redevelopment anticipated under the proposed Specific Plan would involve grading and other ground disturbing construction activities which could expose soils to erosion and loss of topsoil. (Less than Significant)

The Plan area is currently largely developed with a majority of the land area covered by impervious surface such as asphalt, buildings, and concrete. The impervious areas are generally landscaped and vegetated. However, new development under the Specific Plan would require removing the existing cover and thereby exposing underlying soils to the effects of wind and water. The relatively flat topography of the Plan area generally reduces the potential for erosion and loss of topsoil during construction activities. Nonetheless, areas of the Plan are subject to concentrated runoff, and areas of unprotected slopes or piles of bare soil would still pose erosion hazards if left unmitigated. Once covered by an impermeable surface such as asphalt or a new structure or, if vegetated with landscaping and trees, the resulting potential for erosion would then be substantially reduced.

Protection of soils during construction can generally be mitigated through well established erosion control measures. Every construction project in the State of California that causes a disturbance of one acre or more of soil through grading, clearing, and or excavation is subject to the General Construction Stormwater Permit (General Construction Permit), also referred to as the General Permit, adopted by the State Water Resources Control Board. In order to complete the General Permit application, the applicant must first submit a Notice of Intent to obtain coverage under the General Permit. This General Permit requires dischargers to develop and implement a Storm Water Pollution Prevention Plan (SWPPP), which specifies the Best Management Practices (BMPs) that would prevent construction pollutants from contacting storm drains, with the intent of keeping all products of erosion from moving off-site into receiving waters. Furthermore, the SWPPP would also include BMPs to control erosion associated with grading, trenching, and other ground surface-disturbing activities (see also discussion of SWPPP in Section 4.8, *Hydrology and Water Quality*). With adherence to the requirements of the General Permit, impacts from construction would be less than significant.

Mitigation: None required.

Impact GEO-3: New development or redevelopment anticipated under the proposed Specific Plan could be located on unstable soils or become unstable resulting in landslides, lateral spreading, subsidence or collapse. (Less than Significant)

As discussed above, the Plan area is currently largely developed and most of the near surface soils have likely been reworked to some degree as part of construction. Generally, prior to laying a foundation or roadway, the site soils are prepared or compacted in accordance with the building code requirements. Older structures were, in general, built to less stringent codes when compared to recent standards so conditions would likely vary throughout the Plan area. However, site preparation conducted according to current standards would likely improve the stability of soils throughout the Plan area.

Standard geotechnical practices include an evaluation of subsurface soils and identifying engineering properties as well as providing appropriate mitigations to prepare underlying soils for a stable foundation of a planned improvement. These geotechnical investigations routinely evaluate the potential for landslides, lateral spreading, subsidence and collapse. As discussed above, the Plan area is generally flat and there is little likelihood for landslides to affect any proposed development. Lateral spreading is related to liquefaction which is discussed above. Lateral spreading can occur on gentle slopes and is dependent on site specific conditions. Within the Plan area, the southern end that is nearest to the creek would have the highest probability of lateral spreading associated with the sloping creek bank. Subsidence is commonly experienced on alluvial materials or fills if not engineered appropriately. Placement of compacted fills or design of foundation systems to mitigate the effects of subsidence is within current standard practices. Soils that are susceptible to collapse are typically found in regions outside of the Plan area. Collapsible soils are most often encountered in arid climates, where wind and intermittent streams deposit loose low-density materials.

For all the potential geologic hazards mentioned here, the use of standard geotechnical practices through a required geotechnical investigation and implementation of building code requirements are proven means of mitigation. With implementation of these requirements the impacts from unstable soils, landslides, lateral spreading, subsidence, and collapse would be less than significant.

Mitigation: None required.

Impact GEO-4: New development or redevelopment anticipated under the proposed Specific Plan could be located on expansive soils creating substantial risks to life or property. (Less than Significant)

Typically, soils that exhibit expansive characteristics are found within the upper five feet of ground surface. Over a long term exposure to wetting and drying cycles, expansive soils can experience volumetric changes. The effects of expansive soils could damage foundations of above-ground structures, paved roads and streets, and concrete slabs. Expansion and contraction of soils, depending on the season and the amount of surface water infiltration, could exert enough pressure on structures to result in cracking, settlement, and uplift. Expansive soils would not be unexpected in the low-lying alluvial plain where the Plan area is located. However, the presence of expansive soils can only be determined through site specific laboratory analysis of soil samples. The identification of expansive soils is standard practice for a geotechnical investigation which would be required for all new construction within the Plan area. Replacement of expansive soils with engineered fill or addition of soil amendments are effective means of mitigating expansive soils. Therefore, implementation of standard geotechnical engineering practices and building code requirements would reduce potential impacts from expansive soils to less than significant levels.

Mitigation: None required.

Cumulative Impacts

Impact GEO-5: Implementation of the proposed Specific Plan along with potential development in the surrounding region would result in cumulative impacts to geologic and seismic hazards. (Less than Significant)

Other development and redevelopment in the area would be required to implement similar grading and geotechnical engineering measures in accordance with the most recent version of the California Building Code. The Specific Plan, combined with other foreseeable development in the area, would be expected to result in increased population and development in an area susceptible to seismic risks and hazards. While the number of people visiting, living and working in the area would increase incrementally, exposing additional people to seismic and geologic hazards, the risk to people and property would be reduced through the incremental upgrading or demolishing of older buildings

that were constructed under less stringent building code requirements. Older buildings would be seismically retrofitted and newer buildings will be constructed to stricter building codes. All the existing and foreseeable projects in the area would be required to implement mitigation measures similar to those above and adhere to all federal, state, and local programs, requirements and policies pertaining to building safety and construction permitting. All projects would be required to adhere to the California Building Code and the Seismic Hazards Act. Therefore, the project, combined with other foreseeable development in the area, would not result in a cumulatively significant impact by exposing people or structures to risk related to geologic hazards, soils, and/or seismic conditions.

Mitigation: None required.

4.6 Greenhouse Gases and Climate Change

It is widely recognized that emissions of greenhouse gases (GHGs) associated with human activities are contributing to changes in the global climate, and that such changes are having and will continue to have adverse effects on the environment, the economy, and public health. These are the cumulative effects of past, present, and future actions worldwide. While worldwide contributions of GHGs are expected to have widespread consequences, it is not possible to link particular changes to the environment of California to GHGs emitted from a particular source or location. Thus, when considering a project's contribution to impacts from climate change, it is possible to examine the quantity of GHGs that would be emitted either directly from project sources or indirectly from other sources, such as production of electricity. However, that quantity cannot be tied to a particular adverse effect on the environment of California associated with climate change.

4.6.1 Environmental Setting

Gases that trap heat in the atmosphere are called greenhouse gases (GHGs). The major concern with GHGs is that increases in their concentrations are causing global climate change. Global climate change is a change in the average weather on earth that can be measured by wind patterns, storms, precipitation, and temperature. Although there is disagreement as to the speed of global warming and the extent of the impacts attributable to human activities, most agree that there is a direct link between increased emissions of GHGs and long term global temperature increases. What GHGs have in common is that they allow sunlight to enter the atmosphere, but trap a portion of the outward-bound infrared radiation which warms the air. The process is similar to the effect greenhouses have in raising the internal temperature, hence the name GHGs. Both natural processes and human activities emit GHGs. The accumulation of GHGs in the atmosphere regulates the earth's temperature; however, emissions from human activities such as electricity production and the use of motor vehicles have elevated the concentration of GHGs in the atmosphere. This accumulation of GHGs has contributed to an increase in the temperature of the earth's atmosphere and has contributed to global climate change.

The principal GHGs are carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), sulfur hexafluoride (SF_6), perfluorocarbons (PFCs), and hydrofluorocarbons (HFCs). CO_2 is the most common reference gas for climate change. To account for the global warming potential (GWP) of greenhouse gases, GHG emissions are often quantified and reported as CO_2 equivalents (CO_2e). The global warming potential of a GHG depends largely on the lifetime, or persistence, of the gas molecule in the atmosphere. A summary of global warming potential for the most common GHGs taken from the 4th Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) is provided in **Table 4.6-1**. The Fourth Assessment, similar to the three before it, summarizes the findings of Working Group reports and provides a synthesis that specifically addresses the issues of concern to policymakers in the domain of climate change: it confirms that climate change is occurring now, mostly as a result of human activities; it illustrates the impacts of global warming already under way and to be expected in the future, and describes the potential for adaptation of

TABLE 4.6-1
GLOBAL WARMING POTENTIALS OF REPRESENTATIVE GHGs[a]

Industrial Designation of GHG	Chemical Formula	Global Warming Potential per IPCC 4th Assessment Report (100 year horizon)	Global Warming Potential per IPCC 2nd Assessment Report (International/ CCAR[a] convention)
Carbon Dioxide	CO_2	1	1
Methane	CH_4	25	21
Nitrous oxide	N_2O	298	310
CFC-11 (a representative perflourocarbon)	CCl_3F	4,750	3,800
Carbon Tetrachloride	CCl_4	1,400	1,400
HFC-23 (a representative hydrofluorocarbon)	CHF_3	14,800	11,700
Sulfur Hexaflouride	SF_6	22,800	23,900

[a] Values represent multiples of the global warming potential of carbon dioxide (i.e., nitrous oxide has approximately 300 times the global warming potential of carbon dioxide)
[b] CCAR = California Climate Action Registry

SOURCE: IPCC, 2007.

society to reduce its vulnerability; finally it presents an analysis of costs, policies and technologies intended to limit the extent of future changes in the climate system.

For example, one ton of CH_4 contributes the same amount to the greenhouse effect as approximately 25 tons of CO_2, and one ton of N_2O contributes the same amount as approximately 298 tons of CO_2. Therefore, CH_4 and N_2O are much more potent GHGs than CO_2. CH_4 results from off-gassing (the release of chemicals from nonmetallic substances under ambient or greater pressure conditions) associated largely with agricultural practices and landfills. Relatively small levels of N_2O are generated by internal combustion engines. Expressing emissions in CO_2e takes all GHG emissions that contribute to the greenhouse effect and converts them to a single unit, equivalent to the effect that would occur if only CO_2 were being emitted. Although IPCC has updated the global warming potential for CH_4 and N_2O in its Fourth Assessment Report, the global warming potential from the Second Assessment Report is still used to maintain international consistency (per page 94 of the 2009 California Climate Action Registry (CCAR) protocol v3.1: "Second Assessment Report (SAR) GWPs are still used by international convention and the U.S. to maintain the value of the CO_2 'currency.") To maintain consistency with international practice, the CCAR requires participants to use the global warming potentials from the Second Assessment Report for calculating their emissions inventory. Consequently, all calculations of CO_2e in this section apply the global warming potentials from IPCC's Second Assessment Report which are also presented in Table 4.6-1.

Some of the potential resulting effects in California of global warming may include loss in snow pack, sea level rise, more extreme heat days per year, more high ozone days, more large forest

fires, and more drought years.[1] Globally, climate change has the potential to impact numerous environmental resources through potential, though uncertain, impacts related to future air temperatures and precipitation patterns. The projected effects of global warming on weather and climate are likely to vary regionally, but are expected to include the following direct effects:[2]

- Higher maximum temperatures and more hot days over nearly all land areas;
- Higher minimum temperatures, fewer cold days almost everywhere;
- Decrease in frost days almost everywhere in the middle and high latitudes with a comparable increase in growing season length;
- Reduced diurnal temperature range over most land areas;
- Increases in regional tropical precipitation and over the tropical Pacific, with general decreases in the subtropics, and increases at high latitudes; and
- Globally averaged mean water vapor, evaporation and precipitation are projected to increase.

Also, there are many secondary effects that are projected to result from global warming, including global rise in sea level, impacts to agriculture, changes in vector-borne diseases and changes in habitat and biodiversity. Vector-borne diseases are those in which a pathogenic microorganism is transmitted from an infected individual to another individual by a 'vector', such as a tick or a mosquito. Given that each stage of a pathogen's life cycle can be linked to an optimum level of temperature and humidity, global climate change may alter the geographic distribution of diseases, with vector-borne diseases being spread pole-ward and spreading beyond areas where they are traditionally endemic. While the possible outcomes and the feedback mechanisms involved are not fully understood, and much research remains to be done, the potential for substantial environmental, social, and economic consequences over the long term may be great.

In 2008, 86 percent of GHG emissions (in CO_2e) from California were comprised of CO_2 emissions from fossil fuel combustion, with 6 percent comprised of CO_2 from process emissions. High GWP gases accounted for 3.2 percent of the CO_2e emissions. Transportation is the largest end-use category of GHG emissions, and includes transportation used for industry (i.e., shipping), as well as for residential use.

In 2007, 102.6 million metric MT of CO_2-equivalent ("MMT CO_2e") GHGs were emitted in the San Francisco Bay Area (95.5 MMT CO_2e were emitted within the Bay Area Air District and 7.1 MMT CO_2e were indirect emissions from imported electricity).[3] Transportation sources

1 California Air Resources Board (CARB), *Climate Change Scoping Plan: A Framework for Change*, available online: http://www.arb.ca.gov/cc/scopingplan/document/adopted_scoping_plan.pdf; published December 2008, amended version included errata and Board requested modifications posted May 11, 2009 (2009a).

2 Intergovernmental Panel on Climate Change (IPCC), *Climate Change 2007: Working Group I: The Physical Science Basis*, Chapter 10, Global Climate Projections, http://www.ipcc.ch/publications_and_data/ar4/wg1/en/ch10.html, accessed March 23, 2010, published December 2007.

3 BAAQMD, *Source Inventory of Bay Area Greenhouse Gas Emissions*, p. 7, December 2008. http://hank.baaqmd.gov/pln/documents/regionalinventory2007_003_000_000_000.pdf, accessed May 25, 2010.

(e.g., fossil fuel combustion) were associated with 41 percent of the total emissions, industrial/ commercial 34 percent, residential fuel usage 7 percent, electricity and co-generation 15 percent, and off-road equipment 3 percent.

The County of San Mateo is in the process of compiling an inventory of County-wide GHG emissions. The inventory was not completed at the time of this analysis and hence County-wide emissions data are not yet available. However, as a precursor to this effort, the County has prepared a 2012 Energy Strategy which does inventory the GHG emissions from County-wide energy (both electricity and natural gas) use. In 2005 the County-wide GHG emissions from energy use in the built environment was 2,784,795 metric tons per year (San Mateo County, 2006). Other sources not accounted for in this total would include transportation sources (which would include San Francisco and San Carlos airports) and solid waste disposal (which would include Ox Mountain landfill).

4.6.2 Regulatory Setting

Federal

The federal Clean Air Act requires the EPA to define national standards to protect U.S. public health and welfare. The federal Clean Air Act does not specifically regulate GHG emissions; however, on April 2, 2007, in *Massachusetts v. EPA*, 549 U.S. 497, the Supreme Court found that GHGs are air pollutants covered by the Clean Air Act. The Court held that the EPA must determine whether or not emissions of GHG from new motor vehicles cause or contribute to air pollution which may reasonably be anticipated to endanger public health or welfare, or whether the science is too uncertain to make a reasoned decision. In making these decisions, the EPA is required to follow the language of Section 202(a) of the Clean Air Act which dictates the authority of the administrator to prescribe regulation. The Supreme Court decision resulted from a petition for rulemaking under Section 202(a) of the Clean Air Act filed by more than a dozen environmental, renewable energy, and other organizations.

On April 17, 2009, the EPA Administrator signed proposed endangerment and cause or contribute findings for GHGs under Section 202(a) of the Clean Air Act. The EPA held a 60-day public comment period, which ended June 23, 2009, and received over 380,000 public comments. These included both written comments as well as testimony at two public hearings in Arlington, Virginia and Seattle, Washington. The EPA carefully reviewed, considered, and incorporated public comments and has now issued these final Findings discussed below.

The EPA found that six GHGs taken in combination endanger both the public health and the public welfare of current and future generations. The EPA also found that the combined emissions of these GHGs from new motor vehicles and new motor vehicle engines contribute to the greenhouse gas pollution which endangers public health and welfare under the Clean Air Act Section 202(a). These Findings were based on careful consideration of the full weight of scientific evidence and a thorough review of numerous public comments received on the Proposed Findings published April 24, 2009. These Findings were published in the Federal

Register on December 15, 2009 and became effective on January 14, 2010.[4] Subsequent to adoption of these findings, there have been two federal ruling actions with regard to GHGs.

On April 1, 2010, EPA and the National Highway Traffic Safety Administration (NHTSA) announced a joint final rule establishing a historic national program to reduce greenhouse gas emissions and improve fuel economy for new cars and light trucks sold in the United States. EPA and NHTSA will now begin work on two new joint rulemakings, one to develop the first-ever fuel efficiency and GHG emissions standards for commercial trucks, and another to adopt the second-phase of GHG and fuel economy standards for light-duty vehicles. These actions, as announced by President Obama on May 21, 2010, will reduce GHG emissions and fuel use from both light-duty and heavy-duty vehicles for model years 2012 through 2016.

On May 13, 2010, EPA issued a final rule that establishes thresholds for GHG emissions that define when permits are required for new and existing industrial facilities. Facilities responsible for nearly 70 percent of the national GHG emissions from stationary sources will be subject to permitting requirements under this rule. This includes the nation's largest GHG emitters—power plants, refineries, and cement production facilities. This rule took effect in January 2011.

State

Executive Order S-3-05

In 2005, in recognition of California's vulnerability to the effects of climate change, Governor Schwarzenegger established Executive Order S-3-05, which set forth a series of target dates by which statewide emissions of GHGs would be progressively reduced, as follows:

- By 2010, reduce GHG emissions to 2000 levels;
- By 2020, reduce GHG emissions to 1990 levels; and
- By 2050, reduce GHG emissions to 80 percent below 1990 levels.

Assembly Bill 32 – California Global Warming Solutions Act

California Assembly Bill 32 (AB 32), the Global Warming Solutions Act of 2006, was enacted as legislation in 2006 and requires the California Air Resources Board to establish a statewide GHG emission cap for 2020 based on 1990 emission levels. AB 32 required the California Air Resources Board to adopt regulations by January 1, 2008, that identify and require selected sectors or categories of emitters of GHGs to report and verify their statewide GHG emissions, and the California Air Resources Board is authorized to enforce compliance with the program. The California Air Resources Board established the statewide emissions cap, in December 2007, at 427 $MMTCO_2e$[5]. This is approximately 30 percent below forecast "business-as-usual" emissions

[4] U.S. Environmental Protection Agency (EPA), *Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act; Final Rule,* Federal Register Volume 74 No. 239, pp. 66496-66546, December 15, 2009.

[5] MMT = million metric tons; CO2e = CO_2 equivalents

of 596 $MMTCO_2e$, and about 10 percent below average annual GHG emissions during the period 2002 – 2004.[6]

By January 1, 2011, the California Air Resources Board was required to adopt rules and regulations (which shall become operative January 1, 2012), to achieve the maximum technologically feasible and cost-effective GHG emission reductions. In December 2010, ARB adopted regulations establishing such a market-based system—a GHG cap-and-trade system—as permitted in AB 32. This followed earlier adoption of GHG emission limits on automobiles, a low-carbon fuel standard, and regulations requiring utilities to obtain one-third of their power from renewable sources. Similar to federal regulations governing certain other pollutants, the cap-and-trade system would permit emitters to buy and sell rights to emit GHGs.[7] AB 32 also requires the California Air Resources Board to monitor compliance with and enforce any rule, regulation, order, emission limitation, emissions reduction measure, or market-based compliance mechanism that it adopts.

In June 2007, the California Air Resources Board directed staff to pursue 37 early actions for reducing GHG emissions under AB 32. The broad spectrum of strategies to be developed – including a Low Carbon Fuel Standard, regulations for refrigerants with high global warming potentials, guidance and protocols for local governments to facilitate GHG reductions, and green ports – reflects that the serious threat of climate change requires action as soon as possible.[8]

In addition to approving the 37 GHG reduction strategies, the California Air Resources Board directed staff to further evaluate early action recommendations made at the June 2007 meeting, and to report back to the California Resources Board within six months. The general sentiment of the California Air Resources Board suggested a desire to try to pursue greater GHG emissions reductions in California in the near-term. Since the June 2007 California Air Resources Board hearing, the California Air Resources Board staff has evaluated all 48 recommendations submitted by stakeholders and several internally-generated staff ideas and published the *Expanded List of Early Action Measures To Reduce Greenhouse Gas Emissions In California Recommended For Board Consideration* in October 2007.[9] The California Air Resources Board adopted nine Early Action measures for implementation: (1) Ship Electrification at Ports; (2) Reduction of High Global-Warming-Potential Gases in Consumer Products; (3) Heavy-Duty Vehicle Greenhouse Gas Emission Reduction (Aerodynamic Efficiency); (4) Reduction of Perfluorocarbons from Semiconductor Manufacturing; (5) Improved Landfill Gas Capture; (6) Reduction of Hydroflourocarbon-134a from Do-It-Yourself Motor Vehicle Servicing;

6 California Air Resources Board (CARB), *Climate Change Scoping Plan: A Framework for Change*, available online: http://www.arb.ca.gov/cc/scopingplan/document/adopted_scoping_plan.pdf; published December 2008, amended version included errata and Board requested modifications posted May 11, 2009 (2009a).

7 In January 2011, a San Francisco Superior Court judge issued an injunction barring the Air Resources Board from further implementing the AB 32 Scoping Plan. In the decision, the court found that ARB had not properly considered alternatives to the cap-and-trade system in the CEQA-equivalent document that the Board had prepared. This decision could delay implementation of the cap-and-trade system beyond its intended January 2012 start date.

8 California Air Resources Board (CARB), *Draft List of Early Action Measures To Reduce Greenhouse Gas Emissions In California Recommended For Board Consideration.* September 2007 (2007a).

9 California Air Resources Board (CARB), *Expanded List of Early Action Measures To Reduce Greenhouse Gas Emissions In California Recommended For Board Consideration*, October 2007 (2007b).

(7) Sulfur Hexaflouride Reductions from the Non-Electric Sector; (8) a Tire Inflation Program; and (9) a Low Carbon Fuel Standard. Implementation of these Early Action Measures is discussed later in this chronological discussion of state GHG regulation efforts by either by specific legislative bill number or as part of the Climate Change Scoping Plan.

SB 375

SB 375, signed in September 2008 by Governor Schwarzenegger (Chapter 728, Statutes of 2008), aligns regional transportation planning efforts, regional GHG reduction targets, and land use and housing allocation in order to reach California's GHG reduction goals set by AB 32. SB 375 requires Metropolitan Planning Organizations to adopt a Sustainable Communities Strategy (SCS), and, if needed, an Alternative Planning Strategy (APS) that will include land use designations into that Metropolitan Planning Organization's regional transportation plan. The California Air Resources Board, in consultation with Metropolitan Planning Organizations, on September 23, 2010, adopted reduction targets by region for GHGs emitted by passenger cars and light trucks in the region for the years 2020 and 2035. The Bay Area is required to reduce per capita emissions 7 percent by 2020 and 15 percent by 2035. These reduction targets will be updated every eight years but can be updated every four years if advancements in emissions technologies affect the reduction strategies to achieve the targets.

The purpose of the SCS is to propose feasible measures, including patterns of land use that will reduce vehicle miles traveled and otherwise reduce transportation-related GHG emissions. A Draft Bay Area SCS is expected to be released in November 2012 and to be adopted by April 2013. The California Air Resources Board is charged with reviewing each Metropolitan Planning Organization's SCS for consistency with its assigned targets. If CARB concludes that the SCS does not meet the defined targets, then an Alternative Planning Strategy must be prepared showing how the targets may be met. Metropolitan Planning Organizations that do not prepare plans meeting the GHG reduction targets, transportation projects may not be eligible for State funding programmed after January 1, 2012.

This law also extends the minimum time period for the regional housing needs allocation cycle from five years to eight years for local governments, such as Menlo Park, located within a Metropolitan Planning Organization that meets certain requirements. City or county land use policies (including general plans) are not required to be consistent with the regional transportation plan (and associated SCS), but transportation projects inconsistent with the SCS will not be funded. However, new provisions of CEQA would incentivize (through streamlining and other provisions) qualified projects that are consistent with an approved SCS or alternative Planning strategy, categorized as "transit priority projects." A transit priority project would have at least 50 percent residential use, have a minimum net density of 20 units per acre and be located within one half mile of a major transit stop or transit corridor included in a regional transportation plan. Some projects located within the Specific Plan area are likely to qualify as transit priority projects.

California Air Pollution Control Officers Association (CAPCOA) January 2008 CEQA and Climate Change White Paper

In January 2008, CAPCOA issued a "white paper" on evaluating GHG emissions under CEQA. The CAPCOA white paper strategies are not guidelines and have not been adopted by any regulatory agency; rather, the paper is offered as a resource to assist lead agencies in considering climate change in environmental documents.

The CAPCOA white paper addresses what constitutes new emissions, how baseline emissions should be established, what should be considered cumulatively considerable under CEQA, what a business as usual scenario means, and whether an analysis should include life-cycle emissions.

The CAPCOA white paper is used as a guidance tool for project and plan-level GHG analysis in jurisdictions where the local air quality district has not adopted substantive guidance, thresholds or methodologies for performing GHG impact assessment relative to CEQA. Because the Bay Area Air Quality Management District (BAAQMD) has adopted GHG impact thresholds and methodology subsequent to the white paper, its use for analysis of plans and projects in the Bay Area is primarily as a background reference source.

The CAPCOA white paper considers GHG impacts to be exclusively cumulative impacts.[10]

Climate Change Scoping Plan

In December 2008, the California Air Resources Board approved the AB 32 Scoping Plan outlining the State's strategy to achieve the 2020 GHG emissions limit.[11] This Scoping Plan, developed by the California Air Resources Board in coordination with the state-appointed Climate Action Team of regulatory chairpersons and other stakeholders, proposes a comprehensive set of actions designed to reduce overall GHG emissions in California, improve the environment, reduce dependence on oil, diversify our energy sources, save energy, create new jobs, and enhance public health. The measures in the Scoping Plan approved by the California Air Resources Board will be developed over the next two years and be in place by 2012.

The Scoping Plan expands the list of nine Early Action Measures into a list of 39 Recommended Actions contained in Appendices C and E of the Scoping Plan. These measures are presented in **Table 4.6-2**.

CEQA Guidelines Revisions

In 2007, the legislature passed SB97, which required amendment of the state CEQA Guidelines to incorporate analysis of, and mitigation for, greenhouse gas emissions from projects subject to CEQA. The California Natural Resources Agency adopted these amendments on December 30,

[10] California Air Pollution Control Officers Association (CAPCOA), *CEQA and Climate Change: Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act*, 2008

[11] California Air Resources Board (CARB), *Climate Change Scoping Plan: A Framework for Change*, available online: http://www.arb.ca.gov/cc/scopingplan/document/adopted_scoping_plan.pdf; published December 2008, amended version included errata and Board requested modifications posted May 11, 2009 (2009a).

TABLE 4.6-2
RECOMMENDED ACTIONS OF CLIMATE CHANGE PROPOSED SCOPING PLAN

ID #	Sector	Strategy Name
T-1	Transportation	Pavley I and II – Light-Duty Vehicle GHG Standards
T-2	Transportation	Low Carbon Fuel Standard (Discrete Early Action)
T-3	Transportation	Regional Transportation-Related GHG Targets
T-4	Transportation	Vehicle Efficiency Measures
T-5	Transportation	Ship Electrification at Ports (Discrete Early Action)
T-6	Transportation	Goods-movement Efficiency Measures
T-7	Transportation	Heavy Duty Vehicle Greenhouse Gas Emission Reduction Measure – Aerodynamic Efficiency (Discrete Early Action)
T-8	Transportation	Medium and Heavy-Duty Vehicle Hybridization
T-9	Transportation	High Speed Rail
E-1	Electricity and Natural Gas	Increased Utility Energy efficiency programs ; More stringent Building and Appliance Standards
E-2	Electricity and Natural Gas	Increase Combined Heat and Power Use by 30,000 GWh
E-3	Electricity and Natural Gas	Renewables Portfolio Standard
E-4	Electricity and Natural Gas	Million Solar Roofs
CR-1	Electricity and Natural Gas	Energy Efficiency
CR-2	Electricity and Natural Gas	Solar Water Heating
GB-1	Green Buildings	Green Buildings
W-1	Water	Water Use Efficiency
W-2	Water	Water Recycling
W-3	Water	Water System Energy Efficiency
W-4	Water	Reuse Urban Runoff
W-5	Water	Increase Renewable Energy Production
W-6	Water	Public Goods Charge (Water)
I-1	Industry	Energy Efficiency and Co-benefits Audits for Large Industrial Sources
I-2	Industry	Oil and Gas Extraction GHG Emission Reduction
I-3	Industry	GHG Leak Reduction from Oil and Gas Transmission
I-4	Industry	Refinery Flare Recovery Process Improvements
I-5	Industry	Removal of Methane Exemption from Existing Refinery Regulations
RW-1	Recycling and Waste Management	Landfill Methane Control (Discrete Early Action)
RW-2	Recycling and Waste Management	Additional Reductions in Landfill Methane – Capture Improvements
RW-3	Recycling and Waste Management	High Recycling/Zero Waste
F-1	Forestry	Sustainable Forest Target
H-1	High Global Warming Potential Gases	Motor Vehicle Air Conditioning Systems (Discrete Early Action)
H-2	High Global Warming Potential Gases	SF_6 Limits in Non-Utility and Non-Semiconductor Applications (Discrete Early Action)
H-3	High Global Warming Potential Gases	Reduction in Perflourocarbons in Semiconductor Manufacturing (Discrete Early Action)
H-4	High Global Warming Potential Gases	Limit High GWP Use in Consumer Products (Discrete Early Action, Adopted June 2008)
H-5	High Global Warming Potential Gases	High GWP Reductions from Mobile Sources
H-6	High Global Warming Potential Gases	High GWP Reductions from Stationary Sources
H-7	High Global Warming Potential Gases	Mitigation Fee on High GWP Gases
A-1	Agriculture	Methane Capture at Large Dairies

SOURCE: CARB, 2009a.

2009, and they took effect March 18, 2010, after review by the Office of Administrative Law and filing with the Secretary of State for inclusion in the California Code of Regulations.

The Guidelines revisions include a new section (Sec. 15064.4) specifically addressing the significance of GHG emissions. Section 15064.4 calls for a "good-faith effort" to "describe, calculate or estimate" GHG emissions; Section 15064.4 further states that the significance of GHG impacts should include consideration of the extent to which the project would increase or reduce greenhouse gas emissions; exceed a locally applicable threshold of significance; and comply with "regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions." The revisions also state that a project may be found to have a less-than-significant impact if it complies with an adopted plan that includes specific measures to sufficiently reduce GHG emissions (Sec. 15064(h)(3)).

Importantly, however, the revised guidelines do not require or recommend a specific analysis methodology or provide criteria for determining significance of GHG emissions.

CALGREEN

The State of California has adopted a green building code (CALGREEN), which took effect on January 1, 2011. The CALGREEN Code is a comprehensive and uniform regulatory code for certain categories of residential buildings and for commercial, hospital and school buildings. It is intended to ensure that most new buildings in California are built using environmentally advanced construction practices. Some of the requirements of the code are the following:

- 20 percent mandatory reduction in indoor water use, with voluntary goal standards for 30, 35 and 40 percent reductions;
- Separate water meters for nonresidential buildings' indoor and outdoor water use, with a requirement for moisture-sensing irrigation systems for larger landscape projects;
- Requiring diversion of 50 percent of construction waste from landfills, increasing voluntarily to 65 and 75 percent for new homes and 80 percent for commercial projects (Menlo Park currently implements a Construction and Demolition ordinance that requires construction projects to divert 60 percent of materials from the landfill);
- Mandatory inspections of energy systems (i.e. heat furnace, air conditioner, mechanical equipment) for nonresidential buildings over 10,000 square feet to ensure that all are working at their maximum capacity according to their design efficiencies; and
- Requiring low-pollutant emitting interior finish materials such as paints, carpet, vinyl flooring and particle board.
- While the CALGREEN Code clearly advances "green" practices in building construction, the code complements, and does not replace, the Leadership in Energy and Environmental Design (LEED) program, which takes a more comprehensive approach to sustainable design.

Local

Bay Area Air Quality Management District

The Bay Area Air Quality Management District (BAAQMD) is the primary agency responsible for comprehensive air pollution control in the entire San Francisco Bay Area Air Basin. BAAQMD in June 2010 adopted updated CEQA Guidelines, which include the adoption of recommended significance thresholds,[12] assessment methodologies, and mitigation strategies for GHG emissions. The approach that BAAQMD adopted on June 2, 2010, is set forth in its June 2010 document entitled *California Environmental Quality Act Air Quality Guidelines*.[13] This approach includes GHG thresholds for local plans and projects. With regard to construction emissions, the Guidelines do not include a quantitative threshold of significance for construction-related GHG emissions. However, the BAAQMD is encouraging lead agencies to incorporate best management practices to reduce GHG emissions during construction, as applicable. For operations, the proposed guidelines state that a project or any plan that is not a General Plan, such as the Specific Plan, must either be compliant with a qualified GHG Reduction Strategy or have a per capita emission rate of less than 4.6 metric tons of CO_2e per service population (residents + employees) per year for impacts to be less than significant.

In the context of the BAAQMD 2010 CEQA Guidelines, a "qualified GHG Reduction Strategy" is one that includes a GHG inventory for existing (baseline) and future years (2020 or other forecast year) that includes future emissions under a "business-as-usual" scenario; an adopted GHG reduction goal for 2020 of (a) 1990 GHG emission levels, (b) 15 percent below baseline (2008 or earlier) emission levels, or (c) a specified efficiency-based service population emissions rate; analysis of anticipated GHG emissions resulting from local and state policies and regulations that may be planned or adopted but not implemented; identification of specific feasible reduction measures to meet the identified target on a project-by-project basis, including quantification of each measure's effectiveness in GHG reduction; and establishment of a monitoring program, including identification of which measures apply to different types of new development projects, a mechanism for reviewing and determining if all applicable mandatory measures are being applied, implementation steps and parties responsible for ensuring implementation of each action and a schedule for implementation, procedures for monitoring and updating the GHG inventory and reduction measures at three- to five-year intervals, and annual review and reporting on the progress of implementation. In addition, a qualified GHG Reduction Strategy must have undergone CEQA review and been approved through a public process.

The updated BAAQMD CEQA Guidelines contain guidance for assessing impacts relative to emissions of GHGs. Additionally, BAAQMD has introduced the Beta version of its GHG emissions model: BAAQMD GHG Model which works in conjunction with the URBEMIS2007 model of the California Air Resources Board (CARB).

[12] BAAQMD, CEQA Guidelines Update Proposed Thresholds of Significance, May 3, 2010, approved June 2, 2010.
[13] BAAQMD, California Environmental Quality Act Air Quality Guidelines, June 2010. Available at: http://www.baaqmd.gov/Divisions/Planning-and-Research/CEQA-GUIDELINES.aspx.

All of the 2010 revisions to the CEQA thresholds of significance adopted by BAAQMD with the exception of risk and hazard thresholds for new receptors became effective June 2, 2010. These recently adopted thresholds of significance for GHGs from new sources are intended to apply to projects for which a Notice of Preparation was published or environmental analysis begun on or after the applicable effective date. Therefore, the Specific Plan would be subject to the thresholds identified in BAAQMD's 1999 CEQA Guidelines, as opposed to the recently adopted thresholds. However, because BAAQMD's 1999 CEQA Guidelines do not address or otherwise identify significance thresholds with respect to GHG emissions, this analysis applies BAAQMD's recently adopted revised thresholds of significance to the proposed Specific Plan.

In January 2012, after the public review period for the Specific Plan Draft EIR, the Alameda Superior Court issued a ruling in a lawsuit filed by the California Building Industry Association (CBIA) challenging BAAQMD's CEQA thresholds of significance. The court ruled that the adoption of the thresholds was a project under CEQA, and itself required environmental review. This EIR retains use of the BAAQMD thresholds as a conservative estimation of the Plan's GHG impacts and as thresholds that are based on substantial evidence.

City of Menlo Park

In January 2007, the Menlo Park City Council established a goal to promote and follow sustainable environmental practices aimed at reducing GHG emissions, protecting the environment, and conserving natural resources. In 2008 the City Council resolved to develop a Climate Action Plan for Menlo Park as a starting point for the City to achieve significant GHG emission reductions.[14]

In 2009 the City published its Climate Action Plan, a document that is intended to be updated yearly as new technologies arise and economic conditions change. The Plan includes an inventory of GHG emissions in 2005 for the community as a whole as well as emissions generated specifically from municipal operations. According to this inventory, community wide GHG emissions were approximately 491,000 metric tons of CO_2e or approximately 16.37 metric tons per capita in 2005. Of these emissions, approximately 0.4 percent or 2,200 metric tons were from municipal operations (excluding emission from the Marsh Landfill, which contributes 8.5 percent or 41,735 metric tons).

The Climate Action Plan puts forth two options for both the community target and municipal target for the City Council to consider for adoption. The options are as follows:

- *Municipal Operations Targets*:
  - *Option 1* – Adopt a target that is equal to the sum of the emissions reductions of all of the strategies outlined in the Climate Action Plan. This would translate to a 210 metric ton reduction in GHG emissions from municipal sources between 2009 and 2012, resulting in 2012 emission levels that would be 10 percent below 2005 emissions. Within 10 years (by 2020), the City would reduce annual emission by 560 metric tons or 26 percent below 2005 levels.

[14] City of Menlo Park, *Climate Change Action Plan*, 2009.

  - *Option 2* – Adopt the State's goal to reduce emissions to 1990 levels by 2020. This would translate roughly to reducing emission to 15 percent below 2005 levels by 2020.

- *Community Targets*:
  - *Option 1* – Adopt a target that is equal to the sum of the emissions reductions of all the strategies described in the Climate Action Plan. This would translate to a 4 percent increase from 2005 levels in 2012 which is less than the 8 percent increase that is anticipated to occur under the 'business as usual scenario'. Within 10 years (by 2020), community emissions would be 3 percent below the anticipated 2020 levels if the strategies were not implemented.
  - *Option 2* – Adopt the State's goal to reduce 1990 levels by 2020. This is roughly equivalent to reducing emissions 15 percent below 2005 levels by 2020.

Table 4.6-3 lists proposed, planned and existing strategies for reducing emissions from municipal operations and community activities. Strategies listed as 'existing' have been implemented by the City. Without implementation of the City's Climate Action Plan and other measures of the State, GHG emissions in 2020 are expected to increase by 107,227 metric tons per year in Menlo Park for a total of 598,281 metric tons per year. These emissions would be reduced depending on the combination of options adopted by the City. The Climate Action Plan itself has not been formally adopted or otherwise acted upon by the City Council. However, individual projects from the Climate Action Plan will be considered on an ongoing basis as part of the City's Five-year Capital Improvement Program.

Because the City's Climate Action Plan has not been adopted by the City or determined to be a "qualified GHG Reduction Strategy" as defined in the BAAQMD Guidelines, this analysis relies on the Guidelines' service population threshold of significance in its analysis of GHG impacts. It is noted that the City/County Association of Governments of San Mateo County is currently drafting a countywide climate action plan template for use by member jurisdictions in developing a Qualified GHG Reduction Strategy, coordinating regional climate reduction efforts, and demonstrating leadership in addressing climate change.

In 2011, the City published a supplemental report to the CAP, which updated Menlo Park's community greenhouse gas inventories between 2005 and 2009, and also provided a five year strategy of climate action initiatives. The first phase of work resulted in the City adoption of three local amendments to CALGREEN, which consist of a 15 percent reduction over baseline green building standards, mandatory duct testing for all new non-residential development, and cool roofs or alternative systems with an equal energy savings for all new residential development. The second phase of work is expected to begin in 2012-2013 and will focus on the exploration of additional sustainability building measures. All city-wide programs are applicable to the Specific Plan area.

Menlo Park General Plan

Although the General Plan does not include policies explicitly designed to address greenhouse gas emissions and climate change, a number of goals and policies in the General Plan would be expected to contribute to this end.

TABLE 4.6-3
RECOMMENDED STRATEGIES OF MENLO PARK CLIMATE ACTION PLAN

Strategy Name	Status
Municipal Operations	
Roofing for City Buildings – Reflective and Energy Star	Proposed
Solar PV Panels for Corporate Yard	Planned
Replace Existing Streetlights with LED Models	Proposed
Sharon Heights Water Supply Pump Station Upgrades	Planned
Solar Heating for Belle Haven Pool	Proposed
Enhance Transit Pass/Carpooling Programs	Proposed
Marsh Road Landfill Methane Emissions Mitigation	Existing
Enhance Recycling Collection Services	Planned
Install Water Efficient Fixtures in Municipal Facilities	Planned
PG&E ClimateSmart	Existing
Climate and Energy Coordinator	Proposed
Plant Trees	Existing and Planned
Environmentally Preferable Purchasing Program	Proposed
Green Fleet Policy	Proposed
Idling Policy	Proposed
Community Strategies	
Residential Energy Audit Program (Green@Home)	Existing
Energy Efficiency and Renewable Energy Financing Program	Proposed
Electric and Plug-in Hybrid Vehicle Charging Stations	Proposed
Expand Community Shuttle Service	Planned
Implement Bike Improvements	Planned
Enhance Recycling Collection Services	Planned
Incentives for Building Practices that Reduce Energy Consumption Beyond Current Codes	Proposed
Early Implementation of California Green Building Code Standards	Proposed
City Car Sharing Program	Proposed
Limit Commercial Vehicle Idling	Proposed
Transportation Demand Management Strategies	Existing and Proposed
Resident Education on Trip Reduction	Existing and Proposed
Transportation Management Associations	Proposed
Zero Waste Plan and Target	Proposed
Requiring Recycling Service for Commercial Facilities	Proposed
Construction & Demolition Debris Ordinance Update	Proposed
Menlo Park Municipal Water District Conservation Programs	Existing
Landscape Ordinance Update	Existing

SOURCE: City of Menlo Park, 2009.

Land Use Element

- *Policy I-B-4:* Uses and activities shall be encouraged which will strengthen and complement the relationship between the Transportation Center and the Downtown area and the nearby El Camino Real corridor.

Goal I-G: To promote the preservation of open space lands for recreation, protection of natural resources, the production of managed resources, protection of health and safety, and/or enhancement of scenic qualities.

- *Policy I-G-11:* Well-designed pedestrian facilities should be included in areas of intensive pedestrian activity.

- *Policy I-H-1:* The community design should help conserve resources and minimize waste.

- *Policy I-H-2:* The use of water-conserving plumbing fixtures in all new public and private development shall be required.

- *Policy I-H-3:* Plant material selection and landscape and irrigation design for City parks and other public facilities and in private developments shall adhere to the City's Water Efficient Landscape Ordinance.

- *Policy I-H-12:* Street orientation, placement of buildings, and use of shading should contribute to the energy efficiency of the community.

- *Policy I-I-2:* The regional land use planning structure should be integrated within a larger transportation network built around transit rather than freeways and the City shall influence transit development so that it coordinates with Menlo Park's land use planning structure.

Circulation Element

- *Policy II-A-12:* The City shall endeavor to provide for the safe, efficient, and equitable use of streets by pedestrians and bicyclists through good roadway design, maintenance, and effective traffic law enforcement.

Goal II-B: To promote the use of public transportation.

- *Policy II-B-1:* The City shall consider transit modes in the design of transportation improvements and the review and approval of development projects.

- *Policy II-B-2:* As many activities as possible should be located within easy walking distance of transit stops, and transit stops should be convenient and close to as many activities as possible.

- *Policy II-B-3:* The City shall promote improved public transit service and increased transit ridership, especially to office and industrial areas and schools.

Goal II-C: To promote the use of alternatives to the single occupant automobile.

- *Policy II-C-1:* The City shall work with all Menlo Park employers to encourage employees to use alternatives to the single occupancy automobile in their commute to work.

Goal II-D: To promote the safe use of bicycles as a commute alternative and for recreation.

- *Policy II-D-3:* The design of streets within Menlo Park shall consider the impact of street cross section, intersection geometrics and traffic control devices on bicyclists.

- *Policy II-D-4:* The City shall require new commercial and industrial development to provide secure bicycle storage facilities on-site.

Goal II-E: To promote walking as a commute alternative and for short trips.

- *Policy II-E-1:* The City shall endeavor to maintain safe sidewalks and walkways where existing within the public right-of-way.

4.6.3 Impacts and Mitigation Measures

Significance Criteria

Implementation of the Specific Plan would be considered to have significant impacts with regard to GHGs and climate change based on the 2010 amendments to the CEQA Guidelines if it would:

- Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment, based on any applicable threshold of significance; or

- Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing emissions of GHGs.

BAAQMD considers GHG impacts to be exclusively cumulative impacts (as does CAPCOA) and, as such, assessment of significance is based on a determination of whether the GHG emissions from a project represent a cumulatively considerable contribution to the global atmosphere.

With regard to the effects of global warming on the project, the Plan area is relatively flat and located at a remove from the San Francisco Bay, with elevations of between approximately 60 and 80 feet above sea level. As such, the Plan area is not located in an area that is likely subject to inundation by sea level rise. Nor is the Plan area in a high fire hazard area that could be affected by climate-change-related drought. A broader discussion of the potential for drought and its impacts on water supply are discussed in more detail in Section 4.12, *Public Services and Utilities*.

Specific Plan Initiated GHG Reduction Measures

The Specific Plan identifies a number of Guidelines that address sustainability measures and other techniques to reducing GHG emissions generated in the Specific Plan Area. Specifically, Section C.5 of the Plan is a section devoted entirely to addressing sustainability. The Specific Plan incorporates into its concepts and guidelines sustainability strategies reflected in the Leadership in Energy and Environmental Design (LEED) for Neighborhood Development 2009 rating system credits, developed by the U.S. Green Building Council. Guidelines implementing these strategies are located in Section D.6 of the Specific Plan as well as a number of other areas including: Specific Plan Guidelines D.2.47, D.4.09, D.5.05, D.5.20, E.3.6.07, E.3.7.14, Standards E.3.8.01 through E.3.8.03, E.3.8.17 and E.3.8.18, and Guidelines E.3.8.04 through E.3.8.16 and E.3.8.19 through E.3.8.26. These measures would contribute to lessening GHG impacts in the Plan Area.

Impacts

Impact GHG-1: The Specific Plan would generate GHG emissions, both directly and indirectly, that would have a significant impact on the environment. (Significant)

Construction

As discussed previously, the BAAQMD has not adopted a threshold of significance for construction related GHG emissions for either projects or plans. For projects, the BAAQMD encourages lead agencies to quantify GHG emissions that would occur during construction and to make a determination regarding their significance. The BAAQMD Guidelines do not identify a methodology for evaluating construction-related GHG emissions from plans. Agencies are encouraged to incorporate best management practices to reduce GHG emissions associated with construction.

Given that detailed construction information such as construction techniques and scheduling that would be utilized for each individual development project is not currently known, estimation of emissions from individual development projects would be too speculative to warrant quantification at this time. Projects constructed within the Plan area would be required to implement Mitigation Measure AIR-1b (see Section 4.2, *Air Quality*) which includes a number of best management practices to reduce construction related exhaust emissions. Construction would further be dispersed over several phases of redevelopment thus reducing annual GHG emissions per capita. Redevelopment under the Specific Plan would likely not involve grubbing of land or large scale rough grading phases which generate large quantities of diesel equipment emissions, because the Plan area does not include undeveloped sites or sites where such large-scale topographic alterations would be necessary prior to development. Given that detailed construction information such as construction techniques and scheduling that would be utilized for each individual development project is not currently known, estimation of annualized emissions from individual development projects would be too speculative to warrant evaluation. Individual projects in the Specific Plan area undergoing CEQA review would have the ability to estimate construction-related GHG emissions and these emissions may be amortized over the lifetime of the project and included in the individual project inventory for comparison to project-level GHG thresholds.

GHG emissions created by construction would add to the operational emissions described in the next section. However, such emissions would not be expected to exceed any adopted threshold of significance, nor conflict with any adopted plan or policy, nor would they be expected to interfere with the ability of the state to meet the AB 32 GHG reduction goals. This is because any given project's *total* GHG emissions from construction are likely to be less (perhaps substantially less) than half of the same project's *annual* GHG emissions from operations; when annualized over an anticipated project's typical 40-year lifespan, construction GHG emissions thus would be typically less than one percent of a project's total annual GHG emissions. Moreover, construction-related GHG impacts may be further reduced through implementation "best management practices" during construction, as recommended by the BAAQMD. Such practices might include the use of alternative fueled (e.g., biodiesel, electric) construction vehicles and

equipment and locally sourced building materials that require less transportation, and recycling or reusing construction waste and demolition materials.

Operations

Operational project-related greenhouse gas emissions would be approximately 16,646 metric tons/year of CO_2e (including emissions from vehicle trips, space heating, and indirect emissions from the use of electricity, solid waste generation, and water and wastewater treatment and conveyance). These emissions are presented in **Table 4.6-4** and were calculated using the GHG Model of the BAAQMD. Default assumptions of the BAAQMD GHG Model (BGM) were used based on increased square footage of commercial and retail space and units of residential space, and an increase in vehicle miles travelled of 90,000 trips per day. Electrical emissions of BGM were adjusted to account for a PG&E specific emission factor instead of the statewide default factor. Electrical and natural gas emissions were also adjusted to reflect BAAQMD-identified sector adjustments for meeting green building standards. These calculations do not reflect other sustainable building guidelines of the Specific Plan such as non-Green Building Council (GBC) related elements that might be identified within the LEED certification for building elements.

TABLE 4.6-4
EMISSIONS OF GHG FROM THE SPECIFIC PLAN

	Emissions (metric tons CO_2e per year)
Emission Source/Sink	**Total CO_2e**
Motor Vehicle Trips	10,459
Natural Gas	1,466
Grid Electricity	1,959
Solid Waste Generation	2,612
Water and Wastewater Conveyance and Treatment	150
Area Source (landscape maintenance)	6
Total Proposed Project Operational Greenhouse Gas Emissions	**16,646**
Tons per Year per Service Population (residents + employees)	**5.8**
BAAQMD Threshold (Service Population)	**4.6**

SOURCE: Environmental Science Associates, 2011.

Motor vehicle emissions are estimated using vehicle miles traveled calculated by the URBEMIS model that was used in the air quality analysis. The BGM model uses this data to estimate GHG emissions that account for state adopted GHG reduction strategies such as phase-in of Pavley efficiency standards in the vehicle fleet and the low carbon fuel standards. Natural gas emissions are estimated by BGM using land use type and size and climate-specific natural gas demand rates and natural gas emissions factors of the California Climate Action Registry. Electrical GHG emissions are also estimated by BGM using land use type and size. Solid waste emissions are calculated by BGM using land use specific waste generation rates of CalRecycle.

Water and wastewater treatment and conveyance require electricity for the pumping and treatment processes and these are calculated by BGM based on land use water demand estimates of the San Francisco Public Utilities Commission. These emissions were adjusted to reflect implementation of the City's 2010 Water Efficient Landscaping Ordinance using the mitigation tab for drought tolerant landscaping in BGM.

Assuming that the proposed Specific Plan would have a service population of 2,894 (1,357 new jobs and 1,537 residents), the per capita emission rate would be 5.8 metric tons per service population per year. This would exceed the BAAQMD adopted threshold of 4.6 metric tons per service population per year. Therefore, GHG emissions under implementation of the Specific Plan would have a significant impact using the methodology and significance criteria of the BAAQMD, the air quality regulatory agency with jurisdiction over the Specific Plan area.

Mitigation Measure GHG-1: Implement feasible BAAQMD-identified GHG Mitigation Measures and Proposed City CALGreen Amendments. BAAQMD has identified a menu of over 100 available mitigation measures for the purposes of addressing significant air quality impacts, including GHG impacts that arise from implementation of plans including Specific Plans. Many of the GHG reduction measures are already part of the proposed Specific Plan and discussed in the Project Description. Several BAAQMD identified mitigation measures are not applicable to a Specific Plan as they are correlated to specific elements of a general plan. As an example, **Table 4.6-5** presents the mitigation measures contained in the BAAQMD CEQA Guidelines related to Land Use elements and either correlates each to a specific element of the project, explains why it is inapplicable to the proposed project or identifies it as a mitigation measure to be implemented by the proposed project. This method was used in consideration of all BAAQMD identified GHG mitigation measures for plans to develop the following list of available mitigation measures (with BAAQMD-identified category) for the proposed Specific Plan:

- Facilitate lot consolidation that promotes integrated development with improved pedestrian and vehicular access (Land Use Element: Compact Development). The Specific Plan's increased intensities encourage lot consolidation for developers wishing to maximize efficiencies and new standards and guidelines will result in improved pedestrian (Section E.5) and vehicular (Section E.3.7) access.

- Ensure that new development finances the full cost of expanding public infrastructure and services to provide an economic incentive for incremental expansion (Land Use Element: Compact Development). Specific Plan Section E.3.1 describes a process for public benefit negotiations to obtain additional financing for public infrastructure beyond required payments for impact fees such as park dedication and Transportation Improvement Fees.

- Ensure new construction complies with California Green Building Code Standards and local green building ordinances (Land Use Element: Sustainable Development). The City currently requires compliance with both California Green Building Code Standards and locally-adopted amendments citywide. Standard E.3.8.01 states that all citywide sustainability codes or requirements shall apply to the Plan area, unless the Plan area is explicitly exempted, which it is not.

TABLE 4.6-5
BAAQMD-IDENTIFIED GHG MITIGATION MEASURES FOR PLAN LAND USE ELEMENTS

BAAQMD Mitigation Measure	Elements of the Proposed Project Consistent with the Mitigation Measure, Justification for Non-applicability, or Available Mitigation Measure
Urban Form	
Create and enhance landscaped greenway, trail, and sidewalk connections between neighborhoods, commercial areas, activity centers, and parks.	Addressed in Specific Plan – Improved interconnectivity of neighborhoods is a guiding principle (Section C.2) of the Specific Plan
Adopt policies supporting infill development	Addressed in Specific Plan – As discussed in the Project Description, the Specific Plan uses a combination of both standards and guidelines to manage the design and construction of new buildings. The standards and guidelines are intended to encourage infill development on underutilized parcels of land.
Ensure that proposed land uses are supported by a multi-modal transportation system and that the land uses themselves support the development of the transportation system.	Addressed in Specific Plan – The Specific Plan is located within a multi-modal transit corridor that has regional rail service and regional and local bus service. Guideline D.4.01 directs the city to take into consideration recommended criteria of the Grand Boulevard Initiative's *Multi-Modal Access Strategy & Context-Sensitive Design Guidelines.*
Designate a central city core for high-density and mixed-use development.	Addressed in Specific Plan – Figure B.3 of the Specific Plan identifies a focus area for higher density development in proximity to the train station area.
Discourage high intensity office and commercial uses from locating outside of designated centers or downtowns, or far from residential areas and transit stations.	Addressed in Specific Plan (indirectly) – While this measure is not directly applicable to the proposed Specific Plan, the proposed Plan does call for increased density in an area in close proximity to downtown and transit stations, and therefore is implicitly consistent with this measure.
Provide financial incentives and density bonuses to entice development within the designated central city.	Addressed in Specific Plan – Tables E.6 through E.14 of the Specific Plan provide density bonuses for areas within the Plan area.
Provide public education about benefits of well-designed, higher-density housing and relationships between land use and transportation.	Addressed in Specific Plan (indirectly) – This measure is not directly applicable to a Specific Plan, except insofar as development consistent with the proposed Plan would demonstrate the benefits of the higher-density housing in proximity to transportation.
Compact Development	
Achieve a jobs/housing balance or improve the jobs/housing ratio within the plan area.	Addressed in Specific Plan – As discussed in EIR Section 4.11, if full buildout occurs, the Specific Plan's ratio of new population to job growth ratio of 1.56 is only slightly greater than the current ratio of 1.78 indicating that the Specific Plan would result in a very slight net increase of housing capacity for Menlo Park. This would contribute towards reducing the projected comparative undersupply of housing relative to the job growth expected to occur over the next twenty years within Menlo Park.
Create incentives to attract mixed-use projects to older commercial and industrial areas.	Addressed in Specific Plan – As presented in Figure C-2 and C-3 of the Specific Plan, residential mixed use development is proposed within the Plan area.
Adopt incentives for the concurrent development of retail, office, and residential land uses within mixed-use projects or areas. Require mixed-use development to include ground-floor retail.	Addressed in Specific Plan – The Specific Plan provides the guiding principles for the concurrent development of mixed uses and identifies ground floor retail within the downtown area.
Provide adaptive re-use alternatives to demolition of historic buildings. Provide incentives to prevent demolition of historic buildings.	Addressed in EIR – Mitigation Measure CUL-1 of this EIR would require identified historic resources to conform to the *Secretary of the Interior's Standards for the Treatment of Historic Properties and Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic*

TABLE 4.6-5 (Continued)
BAAQMD-IDENTIFIED GHG MITIGATION MEASURES FOR PLAN LAND USE ELEMENTS

BAAQMD Mitigation Measure	Elements of the Proposed Project Consistent with the Mitigation Measure, Justification for Non-applicability, or Available Mitigation Measure
Compact Development (cont.)	
	Buildings (1995). Additionally, Section E.3.1 of the Specific Plan allows for the preservation and reuse of historic resources as a consideration for a public benefit intensity or height bonus.
Facilitate lot consolidation that promotes integrated development with improved pedestrian and vehicular access.	Addressed in Specific Plan – The Specific Plan's increased intensities encourage lot consolidation for developers wishing to maximize efficiencies and new standards and guidelines will result in improved pedestrian (Section E.5) and vehicular (Section E.3.7) access.
Reinvest in existing neighborhoods and promote infill development as a preference over new, Greenfield development.	Addressed in Specific Plan – The proposed Specific Plan addresses development within an existing developed area and promotes infill development.
Ensure that new development finances the full cost of expanding public infrastructure and services to provide an economic incentive for incremental expansion.	Addressed in Specific Plan – Specific Plan Section E.3.1 describes a process for public benefit negotiations to obtain additional financing for public infrastructure beyond required payments for impact fees such as park dedication and Transportation Improvement Fees.
Require new developments to extend sewer and water lines from existing systems or to be in conformance with a master sewer and water plan.	Not Applicable – Proposed development within the Specific Plan area would use existing water and sewer infrastructure.
Green Economy and Business	
Work with businesses to encourage employee transit subsidies and shuttles from transit stations.	Addressed in Specific Plan – Plan would facilitate transit use by increasing density in proximity to transit and to shuttles, including City-operated shuttles that currently serve the Menlo Park Caltrain Station. Proposed Plan supports additional shuttle service and other transit improvements (Section F.6).
Encourage businesses to participate in local green business programs.	Not Applicable – Refers to local government economic development policy and not to Specific Plan land use policies.
Offer incentives to attract businesses to city core and infill areas.	Addressed in Specific Plan – Proposed Plan calls for increased commercial density and increased height limits that would encourage higher-density commercial development in and near Downtown.
Work to attract green businesses and promote local green job training programs.	Not Applicable – Refers to local government economic development policy and not to Specific Plan land use policies.
Support regional collaboration to strengthen the green economy.	Not Applicable – Refers to local government economic development policy and not to Specific Plan land use policies.
Provide outreach and education to local businesses on energy, waste, and water conservation benefits and cost savings.	Addressed in Specific Plan – Section C.5 of proposed plan calls for green buildings that reduce energy and water consumption and for stormwater management best practices.
Support innovative energy technology companies.	Not Applicable – Refers to local government economic development policy and not to Specific Plan land use policies.

- Provide permitting incentives for energy efficient and solar building projects (Land Use Element: Sustainable Development). Section E.3.8 of the Specific Plan provides specific standards and guidelines for sustainable practices. Section E.3.1 would allow for the consideration of public benefit bonus intensity or height if a project were to exceed the standards stated Section E.3.8.

- Support the use of electric vehicles; where appropriate. Provide electric recharging facilities (Circulation Element: Local Circulation; see also Mitigation Measure GHG-2 below). Mitigation Measure GHG-2a (below) has been incorporated into the Specific Plan.

- Allow developers to reach agreements with auto oriented shopping center owners to use commercial parking lots as park and ride lots and multi-modal transfer sites (Circulation Element: Regional Circulation). The intent of the Specific Plan is to preserve and enhance community life, character and vitality through public space improvements, mixed use infill projects sensitive to the small town character of Menlo Park and improved connectivity. Auto oriented shopping centers are not envisioned in the Plan area.;

- Eliminate [or reduce] parking requirements for new development in the Specific Plan area (Circulation Element: Parking). The Final Specific Plan has been modified to provide for lower parking rates in the station area and station area sphere of influence;

- Encourage developers to agree to parking sharing between different land uses (Circulation Element: Parking). This is permitted by existing City policies and reinforced in the Specific Plan through allowed shared parking reductions (Section F.8).

- Require developers to provide preferential parking for low emissions and carpool vehicles (Circulation Element: Parking). These are included as strategies that may be included in a Transportation Demand Management (TDM) program (Section F.10).

- Minimize impervious surfaces in new development and reuse project in the Specific Plan area (Conservation Element: Water Conservation). Section 4.8, *Hydrology and Water Quality*, of this EIR includes a discussion of existing grading, drainage and hydrology requirements and Specific Plan guidelines to limit impervious surfaces in the Plan area.

- Require fireplaces installed in residential development to be energy efficient in lieu of open hearth. Prohibit the installation of wood burning devices (Conservation Element: Energy Conservation). The City of Menlo Park Municipal Code includes Section 12.52, *Wood Burning Appliances*, to control the use of wood burning devises.

- Sealing of HVAC ducts. This is a project level BAAQMD measure that requires the developer to obtain third party HVAC commissioning to ensure proper sealing of ducts and optimal heating and cooling efficiencies. BAAQMD estimated that this measure reduces air conditioning electrical demand by 30 percent. The California Energy commission estimates that air conditioning electrical demand represents approximately 20 percent of total demand for a single family residence and this measure would reduce electrical-related GHG emissions by approximately 100 metric tons/year of CO_2e. The City currently requires testing of heating and cooling ducts for all newly constructed buildings.

Additionally, the City of Menlo Park has implemented its own amendments to the CALGreen building code (California Green Building Standards Code, Title 24, Part 11). These amendments will be designed to require a further 15 percent reduction over baseline Title 24 green building standards requirements for all new development in the City, as well as mandatory duct testing (discussed above) and cool roof or equivalent energy savings materials. Reductions in GHG emissions from these amendments were calculated using the mitigations tab in the BGM model.

While BAAQMD also identifies use of cool roof materials as a potential GHG mitigation measure, per CAPCOA[15], reflective roofs are covered under Title 24 Part 6 and the electricity savings is therefore incorporated in savings due to Title 24 (CALGreen) and no further reduction was taken for this measure as reductions up to 15 percent beyond Title 24 have already been included.

Significance after Mitigation: The above mitigation measures (in particular the CALGreen 15 percent improvement) would reduce GHG emissions to 16,038 metric tons/year of CO_2e within the Specific Plan Area as shown in **Table 4.6-6**. With a service population of 2,894, the per capita emission rate would be 5.5 metric tons per service population per year. This would exceed the BAAQMD adopted threshold of 4.6 metric tons per service population per year. The non-quantifiable mitigation measures would likely reduce this emission rate further, but this effect cannot be calculated, and would likely still be above the threshold. Therefore, GHG emissions under implementation of the Specific Plan with all feasible mitigation would have a significant impact using the methodology and significance criteria of the BAAQMD, the air quality regulatory agency with jurisdiction over the Specific Plan area. Therefore the project would have a significant and unavoidable impact resulting from GHG emissions.

TABLE 4.6-6
MITIGATED EMISSIONS OF GHG FROM THE SPECIFIC PLAN

	Emissions (metric tons CO_2e per year)
Emission Source/Sink	**Total CO_2e**
Motor vehicle trips	10,459
Natural gas	1,246
Grid Electricity	1,565
Solid Waste generation	2,612
Water and Wastewater Conveyance and treatment	150
Area Source (landscape maintenance)	6
Total Proposed Project Operational Greenhouse Gas Emissions with Mitigation	**16,038**
Tons per Year per Service Population (residents + employees)	**5.5**
BAAQMD Threshold (Service Population)	**4.6**

SOURCE: Environmental Science Associates, 2011.

[15] CAPCOA, Quantifying Greenhouse Gas Mitigation Measures, August 2010, p. 456.

Impact GHG-2: The Specific Plan could conflict with applicable plans, policies or regulations of an agency with jurisdiction over the Specific Plan adopted for the purpose of reducing the emissions of GHGs. (Significant)

The Specific Plan does not pose any explicit conflict with the applicable list of California Air Resources Board GHG reduction strategies (see Table 4.6-2). As can be seen in the table, many of the measures—such as implementation of increased fuel efficiency for vehicles (the "Pavley" standards), increased efficiency in utility operations, and development of more renewable energy sources—require statewide action by government, industry, or both. Some of the measures are at least partially applicable to development projects, such as increasing energy efficiency in new construction, installation of solar panels on individual building roofs, and a "green building" strategy—although, arguably, some of these measures could require government action, such as strengthening of building codes, to realize meaningful reductions in GHG emissions. The Specific Plan includes sustainability strategies that promote reduced automobile dependence and certified green buildings (LEED Silver certification required for most building projects).

With respect to consistency with AB 32 and its Climate Change Scoping Plan, this analysis acknowledges that BAAQMD derived the per-capita efficiency threshold that was applied in Impact GHG-1 from emission levels required to be met in order to achieve AB 32 goals.[16] Therefore, these quantitative thresholds also may be used to assess whether or not the proposed Specific Plan would conflict with AB 32. Because the proposed Specific Plan would emit GHGs greater than the service population-based efficiency thresholds of the BAAQMD which were derived based on AB 32 attainment goals, implementation of the Specific Plan would therefore conflict with AB 32 and its associated planning efforts.

The City of Menlo Park General Plan does not include policies explicitly designed to address greenhouse gas emissions and climate change. However, a number of goals and policies in the General Plan would play a role in planning efforts to reduce GHG emissions. The Specific Plan would implement development guidelines that are consistent and would not conflict with a variety of General Plan policies, such as:

- *Policy I-B-4:* Uses and activities shall be encouraged which will strengthen and complement the relationship between the Transportation Center and the Downtown area and the nearby El Camino Real corridor.

- *Policy II-A-12:* The City shall endeavor to provide for the safe, efficient, and equitable use of streets by pedestrians and bicyclists through good roadway design, maintenance, and effective traffic law enforcement.

- *Policy II-B-1:* The City shall consider transit modes in the design of transportation improvements and the review and approval of development projects.

- *Policy II-B-3:* The City shall promote improved public transit service and increased transit ridership, especially to office and industrial areas and schools.

[16] BAAQMD, *CEQA Guidelines Update Proposed Thresholds of Significance*, May 3, 2010, page 11

- *Policy II-D-3:* The design of streets within Menlo Park shall consider the impact of street cross section, intersection geometrics and traffic control devices on bicyclists.

- *Policy II-E-1:* The City shall endeavor to maintain safe sidewalks and walkways where existing within the public right-of-way.

In 2009, Menlo Park published a Climate Action Plan that outlines a number of municipal and community emissions reduction strategies. The Specific Plan would not conflict with implementation of the Climate Action Plan; in fact, many sustainability strategies set forth in the Specific Plan would be consistent with the Climate Action Plan. **Table 4.6-7** below presents the community strategies contained in the Climate Action Plan and correlates each to a specific element or mitigation measure of the project that address the strategy. A review of the table indicates that the proposed Specific Plan is consistent with all but one of the strategies that would reasonably be applicable to a land use development project.

For example, the Specific Plan would aim to reduce automobile dependence by improving pedestrian and bicycle infrastructure. This goal would help reinforce the Climate Action Plan's strategies to implement bike improvements and to implement transportation demand management strategies. Furthermore, the Specific Plan aims to encourage infill development and locate residents near transit facilities, which would also be generally consistent with the Climate Action Plan's strategy to implement transportation demand management strategies. The one outstanding strategy not included in the Specific Plan guidelines relates to the Climate Action Plan's goal to encouraging larger local businesses to install recharging stations for electric vehicles and plug-in hybrid electric vehicles. Consequently, a mitigation measure is identified to amend the Specific Plan to include a guideline that would implement this strategy of the City's Clean Air Plan.

Given that the Specific Plan would conflict with implementation of AB 32 although it includes a variety of sustainability measures and guidelines that would serve to initiate implementation of Menlo Park's Climate Action Plan, it would have a significant impact with regard to climate change planning. Mitigation Measure GHG-2 below is identified to complete the Specific Plan's implementation of strategies identified in the Climate Action Plan. Implementation of Mitigation Measure GHG-1 will also reduce the effect of this impact.

> **Mitigation Measure GHG-2a:** All residential and/or mixed use developments of sufficient size to require LEED certification under the Specific Plan shall install one dedicated electric vehicle/plug-in hybrid electric vehicle recharging station for every 20 residential parking spaces provided. Per the Climate Action Plan the complying applicant could receive incentives, such as streamlined permit processing, fee discounts, or design templates.
>
> **Mitigation Measure GHG-2b:** The City could implement a pilot program in the Specific Plan area to require mandatory commercial recycling, either at all buildings or, at a minimum, at newly constructed buildings. Such a program, identified in the AB 32 Scoping Plan and included in the City's Climate Action Plan as a measure for future study, could reduce GHG emissions in the Plan area and, if successful, could be implemented citywide.
>
> **Significance after Mitigation:** Significant and unavoidable.

TABLE 4.6-7
CLIMATE ACTION PLAN STRATEGIES TO BE IMPLEMENTED AT THE COMMUNITY LEVEL

CAP Community Strategy	Elements of the Proposed Project Consistent with the Strategy
1. Residential Energy Audit Program. This program uses community volunteers to conduct energy audits in their neighborhood to determine improvements to be made in infrastructure to realize energy savings and associated GHG reductions	The Specific Plan incorporates into its concepts and guidelines sustainability strategies reflected in the Leadership in Energy and Environmental Design (LEED) for Neighborhood Development (ND) rating system developed by the U.S. Green Building Council. These programs include the types of improvements that would be targeted by the Residential Energy Audit Program.
2. Energy Efficiency and Renewable Energy Financing Program. Under this program, the City provides low-interest loan funding for solar and energy efficiency installations	The proposed Specific Plan would include certified green buildings by encouraging a high level of certification for new buildings as well as retrofit of existing structures. Any additional owner-occupant efforts to add solar installations would be able to use this funding mechanism, as regulatory lending allows.
3. Electric and Plug-in Hybrid Vehicle Charging Stations. Under this strategy the City would provide infrastructure to recharge electric vehicles or encourage contractors and developers to incorporate recharging facilities into multi-unit housing projects.	The Specific Plan has been revised to include Mitigation Measure 2a below.
5. Expand Community Shuttle Service	Section F.10 of the Specific Plan proposes requiring all new developments to establish a Transportation Demand Management (TDM) program. Section F.10 and Mitigation Measure TR-2 of this Draft EIR identify transportation demand management strategies to be implemented by individual project applicants. These strategies may include operation of a dedicated shuttle service or buy-in to a shuttle consortium.
6. Implement Bike Improvements	Alternative transportation modes are addressed in Sections F.3, F.4 and F.5 of the Specific Plan. The Specific Plan establishes a comprehensive bicycle network for the area as well as new parking standards. Additionally, Mitigation Measure TR-2a of this DEIR identifies transportation demand management strategies to be implemented by individual project applicants. These strategies may include bicycle storage facilities and showers and changing rooms.
7. Enhance Recycling Collection Services.	This strategy is not applicable to local development as it is a City sponsored infrastructure program to implement single stream recycling.
8. Incentives for Building Practices that Reduce Energy Consumption Beyond Current Codes	The Specific Plan incorporates into its concepts and guidelines sustainability strategies reflected in the Leadership in Energy and Environmental Design (LEED) for Neighborhood Development (ND) rating system developed by the U.S. Green Building Council. These programs would reduce energy consumption beyond current code requirements.
9. Early Implementation of California Green Building Code Standards	The City has been implementing the Code since January 1, 2011.
10. City Car Sharing Program	Mitigation Measure TR-2 of this DEIR identifies transportation demand management strategies to be implemented by individual project applicants. These strategies may include implementation of car share programs.
11. Limit Commercial Vehicle Idling	This strategy is designated for further study and would not be enforceable by the Specific Plan. Additionally, the California Air Resources Board has already implemented a heavy-duty truck idling emission reduction program that restricts truck idling to 5 minutes.
12. Transportation Demand Management Strategies.	Section F.10 of the Specific Plan proposes that new developments establish a Transportation Demand Management (TDM) program. Developers may choose from a menu of TDM strategies including transit subsidies, applicable to customers, visitors, and/or employees.

TABLE 4.6-7 (Continued)
CLIMATE ACTION PLAN STRATEGIES TO BE IMPLEMENTED AT THE COMMUNITY LEVEL

CAP Community Strategy	Elements of the Proposed Project Consistent with the Strategy
13. Resident Education on Trip Reduction	This strategy is not applicable to local development as it is a City sponsored education program designated for further study.
14. Zero Waste/Commercial Recycling and Construction Debris Ordinance Updates.	These strategies are designated for further study and would be City sponsored infrastructure and/or ordinance efforts to reduce solid waste disposal that would not be applicable to a land use project.
15. Menlo Park Municipal Water District Conservation Program	This strategy designated for further study would implement further water conservation programs such as installation of artificial turf at playing fields and gray-water recycling. LEED designated construction strategies proposed by the Plan would not conflict with this pending effort to reduce water demand.
16. Landscape Ordinance Update	This strategy designated for further study is not applicable to local development as it would be a City sponsored update to its existing ordinance required by State law (AB1881). Development under the Specific Plan would be required to comply with the conditions of this updated ordinance once it is fully implemented.

SOURCE: Environmental Science Associates, 2010.

As discussed in Impact GHG-1, even with the adoption of all identified mitigation measures, the proposed project would still result in GHG emissions greater than the significance threshold developed by BAAQMD based on AB 32 attainment goals. Therefore the project would result in a significant and unavoidable impact with regard to its conflict with the planning goals of AB 32.

4.7 Hazardous Materials and Hazards

This section discusses the hazardous materials issues related to the existence of hazardous materials associated with the Plan area, as well as construction and operation of subsequent development projects. This section provides an overview of the regulatory setting that is applicable to health and safety regarding hazardous materials in the Plan area and potential project impacts and appropriate mitigation measures, as necessary.

4.7.1 Environmental Setting

Definitions

Materials and waste are generally considered hazardous if they are poisonous (toxicity), can be ignited by open flame (ignitability), corrode other materials (corrosivity), or react violently, explode or generate vapors when mixed with water (reactivity). The term "hazardous material" is defined in the State Health and Safety Code (Chapter 6.95, Section 25501[o]) as any material that, because of quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment.

A hazardous waste, for the purpose of this EIR, is any hazardous material that is abandoned, discarded, or recycled, as defined in the State Health and Safety Code (Chapter 6.95, Section 25125). The transportation, use, and disposal of hazardous materials, as well as the potential releases of hazardous materials to the environment, are closely regulated through many state and federal laws.

The Plan area currently includes a variety of land uses: commercial and light industrial developments; residential developments, open spaces; and railroad tracks. Commercial and industrial land uses involving hazardous materials and other substances can become a health hazard to humans or the environment if not properly contained or managed. A wide array of potential hazardous materials sources originate from commercial land uses, such as gasoline service stations, dry cleaners, and other facilities that utilize or store solvents, chemicals or other hazardous materials. Industrial land use typically involves storage of large quantities of fuel or hazardous materials in above-ground or underground storage tanks. These sources of hazardous materials are present in the existing environment within the project area, and if encountered by construction workers or the general public, can cause exposures that may result in adverse environmental and health effects.

This project setting section discusses the potential presence of soil and groundwater contamination within the project area and hazardous materials commonly found in building materials, as buildings may be demolished in connection with this project.

Soil and Groundwater

To identify sites with soil and groundwater contamination in the project vicinity, ESA performed a regulatory agency database search for the project area using the California Regional Water Quality Control Board (RWQCB) GeoTracker and the California Department of Toxic

Substances Control (DTSC) Envirostor databases. These databases search regulatory agency lists of sites with a documented release of hazardous materials or petroleum products. Regulatory agency lists included in the database search included: Federal Superfund (EPA National Priorities List); State Response; Voluntary Cleanup; Landfill Disposal Sites; Military Sites, Leaking Underground Fuel Tank (LUFT) Sites; and Other Sites.

Project construction would involve excavation for facility improvements and, therefore, could potentially encounter contaminated soil or groundwater. In the investigations discussed below, groundwater has been reported at depths ranging from 29 to 45 feet below ground surface. Sites located within the planning area with documented releases to soil or groundwater that could potentially expose construction workers or the public to impacted soil or groundwater are listed in **Table 4.7-1**. These cases are discussed further below.

TABLE 4.7-1
HAZARDOUS MATERIALS RELEASE SITES IDENTIFIED WITHIN THE PLAN AREA

Site Name	Address	Cleanup Status	List
Tosco #3652	1380 El Camino Real	Completed – Case Closed	LUFT
Rayberg Lumber	1460 El Camino Real	Completed – Case Closed	LUFT
Beltramo Property	1452, 1458 and 1460 El Camino Real	Open – Site Assessment	Other
Red Carpet Car Wash	1436 El Camino Real	Open - Remediation	LUFT
Norge/Atherton Cleaners	1438 El Camino Real	Open – Site Assessment	Other
Shell	1400 El Camino Real	Completed – Case Closed	LUFT
Chevron 9-6375	1377 El Camino Real	Completed – Case Closed	LUFT
Stanford Cadillac	1300 El Camino Real	Completed – Case Closed	LUFT
Wo Sing Cleaners	570 Derry Lane	Open – Site Assessment	Other
BP Oil (Independent)	1200 El Camino Real	Completed – Case Closed	LUFT
Kulakoff Development	1190 El Camino Real	Completed - Case Closed	LUFT
College Park Convalescent	1275 Crane Street	Completed – Case Closed	LUFT
Nicholson Property	931 Menlo Oaks Drive	Completed – Case Closed	LUFT
Magnussen Buick-GMC	550 El Camino Real	Completed – Case Closed	LUFT
Stanford Lincoln Mercury	444 El Camino Real	Open – Site Assessment	LUFT
Exxon 7-0225	389 El Camino Real	Completed – Case Closed	LUFT
Exxon 7-3910	145 El Camino Real	Completed – Case Closed	LUFT
Former Anderson Chevrolet	300 El Camino Real	Completed – Case Closed	SLIC
Former Lutz Ford	350 El Camino Real	Completed – Case Closed	LUFT

LUFT – Leaking Underground Fuel Tank List
SLIC – Spills, Leaks, Investigation and Clean Up

Bold face type indicates ongoing investigation or remediation

SOURCE: RWQCB GeoTracker, DTSC EnviroStor 2009

Closed Leaking Underground Fuel Tank (LUFT) Sites

As shown in Table 4.7-1, the project area contains 13 closed LUFT sites. Cleanup of LUFT facilities is performed under the direction of the lead agency, either the San Mateo County Health Department Groundwater Protection Program (GPP) or the RWQCB. Case closure is typically granted by the oversight agency when soil or groundwater affected by a release of petroleum hydrocarbons and its constituents (such as benzene, toluene, ethylbenzene, xylenes (BTEX) and methyl-tertbutylether (MTBE)) has been substantially cleaned up and no longer poses a threat to the quality of groundwater beneath the site. It should be noted that residual contaminants may remain in soil or groundwater at closed sites. Low levels of hydrocarbons tend to degrade over time. Excavation for project construction at closed LUFT sites, however, may encounter low levels of petroleum hydrocarbons in soil or groundwater. The risks associated with encountering subsurface contamination is discussed further in the Impacts and Mitigations section below.

Beltramo Property

This property consists of four large one-story buildings on 1.5 acres. The site was reportedly occupied by a welding shop in the 1920s and early 1930s, followed by a lumber yard and hardware store until 2001. As of 2006, the property was occupied by a variety of tenants: small businesses including a nail salon, a garden furniture store, a flooring store, a window retail store, and various open space storage areas.[1] In 2006, the owners of the property received land use entitlements from the City for redevelopment of the property with 26,800 square feet of new commercial development and 16 residential units. The approvals were valid for two years. In 2008, the property owners requested and were granted a two-year extension of the approvals. A second extension request is currently pending with the City.

Contamination by tetrachloroethene (PCE) and its daughter products was discovered in April 2006 during decommissioning of three dry wells. The source of the contamination appears to have been a neighboring former dry cleaner.[2] PCE concentrations in groundwater exceeded the RWQCB Environmental Screening Level for commercial land. Over the next two years, 22 soil borings were advanced to evaluate the presence of PCE in soil and groundwater. PCE exceeded the commercial Environmental Screening Level for numerous soil and groundwater samples collected in those borings.

In September 2008, 17 soil vapor probes were installed for the collection of soil gas samples for laboratory analysis. Concentrations of PCE in soil vapor were detected between 12 and 10,000 µg/m3[3] in the area planned for residential development and between 90 and 280,000 µg/m3 in the area planned for commercial development. PCE concentrations in both these areas exceed their respective residential and commercial California Human Health Screening Levels (CHHSLs). TRC, the environmental consultant, recommended the following measures prior to redevelopment: (1) engineering controls be installed, such as a vapor barrier to prevent intrusion of PCE-impacted

1 TRC, Inc., *Human Health Risk Assessment Report, Beltramo Property at 1452, 1458, and 1460 El Camino Real, and 1457 and 1473 San Antonio Street, Menlo Park, CA*, March 26, 2010.
2 TRC, Inc., *Human Health Risk Assessment Report, Beltramo Property at 1452, 1458, and 1460 El Camino Real, and 1457 and 1473 San Antonio Street, Menlo Park, CA*, March 26, 2010.
3 µg/m3 = micrograms per cubic meter, or parts per billion

soil vapor from intruding into planned structures; (2) a deed restriction prohibit groundwater use at the site due to PCE concentrations exceeding ESLs; (3) and a soil and groundwater management plan addressing handling of PCE-impacted soil and groundwater during construction. A human health risk assessment was prepared for the Plan area and upon review the DTSC recommended engineering measures to control future indoor air intrusion, preparation of a soil management plan to manage soils during construction, and preparation of a health and safety plan to protect workers from hazards.[4] The site will remain as an open case until it has been demonstrated to the satisfaction of DTSC that no threat to human health or the environment remains.

Red Carpet Car Wash

This site was operated as a car wash and fueling system as early as 1966. The site is contaminated primarily with TPH-gasoline, BTEX and MTBE from a former underground storage tank leak. Trace concentrations of volatile organic compounds (VOCs), primarily chlorinated solvents, have been detected and may have originated from dry cleaners formerly located in the site vicinity. TPH-gasoline remains in soil at concentrations up to 3,900 mg/kg in the vadose zone (the depth where the groundwater surface fluctuates) between 24 and 37 feet below ground surface. Floating hydrocarbon product has been observed in one well since 2005. As an interim remedial measure, an absorbent sock has been installed in this well and is replaced at bi-monthly to monthly intervals. Several remedial actions for site cleanup have been considered, and the injection of a chemical oxidant to break down hydrocarbons in the saturated zone has been proposed as a recommended cleanup method (E2C, Inc, 2006). However, to date the site is still undergoing investigation to determine the full vertical and lateral extent of contamination.[5] Further evaluation and approval by Department of Toxic Substances Control would be needed prior to any redevelopment.

Norge/Atherton Cleaners

The owners of this site were identified by San Mateo County Groundwater Protection Program as potentially responsible parties for the PCE contamination identified at the Beltramo property, discussed above. As the owners have not responded to the County Groundwater Protection Program requests, the Groundwater Protection Program is referring this case to the Department of Toxic Substances Control for environmental oversight and enforcement.[6]

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4 Department of Toxic Substances Control (DTSC), *EnviroStor Database for Belatramo Property*, http://www.envirostor.dtsc.ca.gov/public/profile_report.asp?global_id=60001067, accessed June 30, 2010.; Department of Toxic Substances Control (DTSC), *EnviroStor Database*, http://www.envirostor.dtsc.ca.gov/public/map.asp?global_id=&x=-119.1357421875&y=37.82280243352756&zl=5&ms=640,480&mt=m&findaddress=True&city=MENLO%20PARK&zip=&county=&federal_superfund=true&state_response=true&voluntary_cleanup=true&school_cleanup=true&corrective_action=true&permit_site=true&permit_and_ca_site=true, accessed July 15, 2009.

5 State Water Resources Control Board (SWRCB), *Geotracker Database, Red Carpet* http://www.geotracker.swrcb.ca.gov/profile_report.asp?global_id=T0608100964, accessed June 30, 2010a.

6 San Mateo County Health Department (SMCHD), *Potential Release of Tetrachloroethylene at 1438 El Camino Real, Menlo Park, CA*, December 23, 2008.

Wo Sing Cleaners

Since 2002, several subsurface investigations by one or more environmental consultants have been performed at the site to evaluate soil, soil gas, and groundwater quality. The results of these investigations have indicated that elevated concentrations of VOCs, primarily PCE, are located below the site. A soil gas investigation delineated one zone approximately 7,400 square feet in size with PCE concentrations in soil gas ranging from 8,900 µg/m3 to 140,000 µg/m3. Another zone of lesser contamination, up to 540 µg/m3 was also identified. A risk assessment performed for the site based on this data indicates that the risk to future occupants from existing contamination exceed the one in one million cancer risk used as a threshold for five of six potential residential scenarios. A remedial action plan has been prepared for the site but the project is still undergoing monitoring and remediation.[7] Further evaluation and approval by Department of Toxic Substances Control would be needed prior to any redevelopment.

Stanford Lincoln Mercury

Two 400-gallon underground storage tanks, formerly containing gasoline and waste oil, were removed from this site in November 2007. Site investigations identified soil contamination at depths between 25 and 35 feet below ground surface and the presence of TPH-gasoline, TPH-diesel, ethyl benzene, xylenes, and naphthalene in groundwater at concentrations exceeding Environmental Screening Levels.[8] Additional soil and groundwater investigation has been implemented as of June 2010 to further evaluate the contamination at this site as overseen by the San Mateo County Environmental Health department.[9]

Structural and Building Components

Hazardous materials, such as asbestos, lead, and polychlorinated biphenyls (PCBs), may be contained in older building materials and released during demolition or renovation of existing facilities. Redevelopment in the planning area would most likely involve the demolition of some existing structures. It is possible that some hazardous building material may be encountered depending upon whether the buildings were constructed prior to the dates these hazardous building materials were phased out of use.

Asbestos Potential

Asbestos is a naturally-occurring fibrous material that was used as a fireproofing and insulating agent in building construction before such uses were banned by the U.S. Environmental Protection Agency (EPA) in the 1970's, although some nonfriable[10] use of asbestos in roofing materials still exists. The presence of asbestos can be found in such materials as ducting

7 State Water Resources Control Board (SWRCB), *Geotracker Database, Wo Sing Cleaners* http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0608132242&assigned_name=SLIC, accessed June 30, 2010b.

8 Aqua Science Engineers, *Workplan for Additional Soil and Groundwater Assessment*, also available at http://www.geotracker.swrcb.ca.gov/esi/uploads/geo_report/6600612819/T0608126581.PDF. November 30, 2008.

9 State Water Resources Control Board (SWRCB), *Geotracker Database, Stanford Lincoln Mercury,* http://www.geotracker.swrcb.ca.gov/profile_report.asp?global_id=T0608126581, accessed July 1, 2010c.

10 Nonfriable asbestos refers to asbestos-containing materials (ACMs) that contain asbestos fibers in a solid matrix that does not allow for them to be easily released.

insulation, wallboard, shingles, ceiling tiles, floor tiles, insulation, plaster, floor backing, and many other building materials. Asbestos and asbestos-containing materials (ACMs) are considered both a hazardous air pollutant and a human health hazard. The risk to human health is from inhalation of airborne asbestos, which commonly occurs when asbestos-containing materials are disturbed during demolition and renovation activities.

Lead Potential

Lead and lead compounds can be found in many types of paint. In 1978, the Consumer Product Safety Commission set the allowable lead levels in paint at 0.06 percent by weight in a dry film of newly applied paint. In the 1970s, the chief concern of lead paint was its cumulative effect on bodily systems, primarily when paint chips containing lead were ingested by children. Research in the early 1980s showed that lead dust is of special concern, because the smaller particles are more easily absorbed by the body. Common methods of paint removal, such as sanding, scraping, and burning, create excessive amounts of dust. Lead dust is especially hazardous to young children because they play on the floor and engage in a great deal of hand-to mouth activity, increasing their potential for exposure. Lead-based paints are considered likely present in buildings constructed prior to 1960, and potentially present in buildings built prior to 1978.

PCBs Potential

PCBs are organic oils that were formerly placed in many types of electrical equipment, such as transformers and capacitors, primarily as electrical insulators. They may also be found in hydraulic fluid used for hoists, elevators, etc. Years after widespread and commonplace installation, it was discovered that exposure to PCBs may cause various health effects and that PCBs are highly persistent in the environment. The EPA has listed these substances as carcinogens. PCBs were banned from use in electrical capacitors, electrical transformers, vacuum pumps, and gas turbines in 1979.

Underground Storage Tanks

An underground storage tank system is a tank and any underground piping connected to the tank that has at least 10 percent of its combined volume underground. Until the mid-1980s, most underground storage tanks were made of single-walled bare steel which can corrode over time resulting in leakage. Faulty installation or maintenance procedures also lead to underground storage tank leakage, in addition to potential releases associated with spills. Recently revised underground storage tank regulations have significantly reduced the incidents of underground storage tank leakage from new underground storage tank systems and the consequential soil and groundwater contamination. However, there are some older underground storage tank systems that remain in service and many sites contaminated by leaking underground storage tanks that are still under investigation and clean-up. Underground storage tanks installed prior to the mid-1980's that have leaked as well as improperly installed underground storage tanks have resulted in fuel spills that can present contamination issues in the region. In addition, it is not uncommon for older underground storage tanks to have been abandoned in place with no documentation of location or abandonment technique.

4.7.2 Regulatory Setting

The Specific Plan is subject to government health and safety regulations applicable to the transportation, use, and disposal of hazardous materials. This section provides an overview of the regulatory setting that is applicable to the health and safety in the Plan area.

Federal

Hazardous Materials Management

The primary federal agencies with responsibility for hazardous materials management include the EPA, U.S. Department of Labor Occupational Safety and Health Administration (Fed/OSHA), and the U.S. Department of Transportation (DOT). Federal laws, regulations, and responsible agencies are summarized in **Table 4.7-2** and are discussed in detail in this section.

TABLE 4.7-2
FEDERAL LAWS AND REGULATIONS RELATED TO HAZARDOUS MATERIALS MANAGEMENT

Classification	Law or Responsible Federal Agency	Description
Hazardous Materials Management	Community Right-to-Know Act of 1986 (also known as Title III of the Superfund Amendments and Reauthorization Act (SARA)	Imposes requirements to ensure that hazardous materials are properly handled, used, stored, and disposed of and to prevent or mitigate injury to human health or the environment in the event that such materials are accidentally released.
Hazardous Waste Handling	Resource Conservation and Recovery Act of 1976 (RCRA)	Under RCRA, the EPA regulates the generation, transportation, treatment, storage, and disposal of hazardous waste from “cradle to grave.”
	Hazardous and Solid Waste Act	Amended RCRA in 1984, affirming and extending the “cradle to grave” system of regulating hazardous wastes. The amendments specifically prohibit the use of certain techniques for the disposal of some hazardous wastes.
Hazardous Materials Transportation	U.S. Department of Transportation (DOT)	Has the regulatory responsibility for the safe transportation of hazardous materials. The DOT regulations govern all means of transportation except packages shipped by mail (49 CFR).
	U.S. Postal Service (USPS)	USPS regulations govern the transportation of hazardous materials shipped by mail.
Occupational Safety	Occupational Safety and Health Act of 1970	Fed/OSHA sets standards for safe workplaces and work practices, including the reporting of accidents and occupational injuries (29 CFR).
Structural and Building Components (Lead-based paint, PCBs, and asbestos)	Toxic Substances Control Act (TSCA)	Regulates the use and management of PCBs in electrical equipment, and sets forth detailed safeguards to be followed during the disposal of such items.
	U.S. EPA	The EPA monitors and regulates hazardous materials used in structural and building components and effects on human health.

CFR – Code of Federal Regulations.
RCRA – Resource Conservation Recovery Act

State and local agencies often have either parallel or more stringent regulations than federal agencies. In most cases, state law mirrors or overlaps federal law and enforcement of these laws is the responsibility of the state or of a local agency to which enforcement powers are delegated. For these reasons, the requirements of the law and its enforcement are discussed under either the state or local agency section.

State

Unified Program

In January 1996, the California Environmental Protection Agency (Cal EPA) adopted regulations implementing a Unified Hazardous Waste and Hazardous Materials Management Regulatory Program (Unified Program). The program has six elements: hazardous waste generators and hazardous waste on-site treatment; underground storage tanks; aboveground storage tanks; hazardous materials release response plans and inventories; risk management and prevention programs; and Unified Fire Code hazardous materials management plans and inventories. The plan is implemented at the local level. The Certified Unified Program Agency (CUPA) is the local agency that is responsible for the implementation of the Unified Program.

Hazardous Materials Management

The California Hazardous Materials Release Response Plans and Inventory Law of 1985 (Business Plan Act) requires that any business that handles hazardous materials prepare a business plan, which must include the following:

- Details, including floor plans, of the facility and business conducted at the site;
- An inventory of hazardous materials that are handled or stored on site;
- An emergency response plan; and
- A safety and emergency response training program for new employees with annual refresher courses.

The Office of Emergency Services serves as the central point in state government for the emergency reporting of spills, unauthorized releases, or other accidental releases of hazardous materials and shall coordinate the notification of the appropriate state and local administering agencies that may be required to respond to those spills, unauthorized releases, or other accidental releases.

Hazardous Waste Handling

The Department of Toxic Substances Control (DTSC), under the umbrella of Cal EPA, regulates hazardous waste, cleans up existing contamination, and looks for ways to reduce the hazardous waste produced in California. State and federal laws require detailed planning to ensure that hazardous materials are properly handled, used, stored, and disposed of, and, in the event that such materials are accidentally released, to prevent or to mitigate injury to health or the environment.

Laws and regulations require hazardous materials users to store these materials appropriately and to train employees to manage them safely.

Under the federal Resource Conservation and Recovery Act of 1976 (RCRA), whose responsibilities are described in Table 4.7-2, above, individual states may implement their own hazardous waste programs in lieu of RCRA, as long as the state program is at least as stringent as federal RCRA requirements. In California, DTSC regulates the generation, transportation, treatment, storage, and disposal of hazardous waste. The hazardous waste regulations establish criteria for identifying, packaging, and labeling hazardous wastes; prescribe management of hazardous waste; establish permit requirements for hazardous waste treatment, storage, disposal, and transportation; and identify hazardous wastes that cannot be disposed of in landfills.

Hazardous Materials Transportation

The State of California has adopted DOT regulations for the intrastate movement of hazardous materials. State regulations are contained in Title 26 of the California Code of Regulations (CCR). In addition, the State of California regulates the transportation of hazardous waste originating in the state and passing through the state (26 CCR). Both regulatory programs apply in California. The two state agencies that have primary responsibility for enforcing federal and state regulations and responding to hazardous materials transportation emergencies are the California Highway Patrol (CHP) and the California Department of Transportation (Caltrans).

Medical Waste

Within the regulatory framework of the California Medical Waste Management Act, the Medical Waste Management Program of the California Department of Health Services (CDHS) ensures the proper handling and disposal of medical waste by permitting and inspecting medical waste offsite treatment facilities and transfer stations throughout the state. The CDHS also oversees all medical waste transporters. The Medical Waste Management Program provides support and oversight to the San Mateo County Health Department (SMCHD), which enforces the Medical Waste Management Act locally.

Occupational Safety

The California Occupational Safety and Health Administration (Cal/OSHA) assumes primary responsibility for developing and enforcing workplace safety regulations in California. Because California has a federally approved OSHA program, it is required to adopt regulations that are at least as stringent as those found in Title 29 of the Code of Federal Regulations. Cal/OSHA standards are generally more stringent than federal regulations.

Cal/OSHA regulations (8 CCR) concerning the use of hazardous materials in the workplace require employee safety training, safety equipment, accident and illness prevention programs, hazardous substance exposure warnings, and emergency action and fire prevention plan preparation. Cal/OSHA enforces hazard communication program regulations, which contain training and information requirements, including procedures for identifying and labeling hazardous substances, and communicating hazard information relating to hazardous substances

and their handling. The hazard communication program also requires that Materials Safety Data Sheets (MSDS) be available to employees, and that employee information and training programs be documented. These regulations also require preparation of emergency action plans (escape and evacuation procedures, rescue and medical duties, alarm systems, and training in emergency evacuation).

State laws, like federal laws, include special provisions for hazard communication to employees in research laboratories, including training in chemical work practices. Specific, more detailed training and monitoring is required for the use of carcinogens, ethylene oxide, lead, asbestos, and certain other chemicals listed in 29 CFR. Emergency equipment and supplies, such as fire extinguishers, safety showers, and eye washes, must also be provided and maintained in accessible places.

Cal/OSHA (8 CCR), like Fed/OSHA (29 CFR) includes extensive, detailed requirements for worker protection applicable to any activity that could disturb asbestos-containing materials, including maintenance, renovation, and demolition. These regulations are also designed to ensure that persons working near the maintenance, renovation, or demolition activity are not exposed to asbestos.

Emergency Response

California has developed an emergency response plan to coordinate emergency services provided by federal, state, and local government and private agencies. Responding to hazardous materials incidents is one part of this plan. The plan is administered by the State Office of Emergency Services (OES), which coordinates the responses of other agencies, including Cal EPA, CHP, CDFG, the San Francisco Bay RWQCB, and the San Mateo County Hazardous Materials Emergency Response Team (ERT). The ERT provides first response capabilities, if needed, for hazardous materials emergencies within the Plan area. In addition, the Menlo Park Fire Protection District provides a primary role in initial response to emergency hazardous materials incidents.

Structural and Building Components

Implementation of the project would include demolition of structures, which, due to their age, may contain asbestos, PCBs, or lead and lead-based paint. In addition, removal of existing aboveground tanks or underground storage tanks may be required.

Asbestos

State laws and regulations prohibit emissions of asbestos from asbestos-related manufacturing, demolition, or construction activities; require medical examinations and monitoring of employees engaged in activities that could disturb asbestos; specify precautions and safe work practices that must be followed to minimize the potential for release of asbestos fibers; and require notice to federal and local governmental agencies prior to beginning renovation or demolition that could disturb asbestos. Asbestos represents a human health risk when asbestos fibers become airborne (friable) and are inhaled into the lungs.

The Bay Area Air Quality Management District (BAAQMD) is vested by the California legislature with authority to regulate airborne pollutants, including asbestos, through both inspection and law enforcement, and is to be notified ten days in advance of any proposed demolition or abatement work. Cal/OSHA regulates asbestos removal to ensure the health and safety of workers removing asbestos containing materials and also must be notified of asbestos abatement activities.

Polychlorinated Biphenyls (PCBs)

As previously discussed, PCBs are organic oils that were formerly placed in many types of electrical equipment and in fluorescent lighting ballasts. PCBs are highly persistent in the environment and are toxic. In 1979, the EPA banned the use of PCBs in most new electrical equipment and began a program to phase out certain existing PCB-containing equipment. The use and management of PCBs in electrical equipment is regulated pursuant to the Toxic Substances Control Act (40 CFR). PCB regulations are found in 40 Code of Federal Regulations 761.TSCA gives EPA's Office of Solid Waste and Emergency Response the authority to develop, implement and enforce regulations concerning the use, manufacture, cleanup and disposal of PCBs. Fluorescent lighting ballasts that contain PCBs, regardless of size and quantity, are regulated as hazardous waste and must be transported and disposed of as hazardous waste in accordance with CHP and Caltrans.

Lead and Lead-based Paint

The California Code of Regulations, Title 22, considers waste soil with concentrations of lead to be hazardous if it exceeds a total concentration of 1,000 ppm and a soluble[11] concentration of 5 ppm. Requirements for lead hazard evaluation and abatement activities, accreditation of training providers, and certification of individuals engaged in lead-based paint activities is found in California Code of Regulations Title 17, Section 35001 et seq. Both the federal and California OSHAs regulate all worker exposure during construction activities that involve lead-based paint. The Interim Final Rule found in 29 CFR Part 1926.62 covers construction work where employees may be exposed to lead during such activities as demolition, removal, surface preparation for re-painting, renovation, clean up and routine maintenance. The OSHA-specified method of compliance includes respiratory protection, protective clothing, housekeeping, hygiene facilities, medical surveillance, training, etc.

Local

Soil and Groundwater Contamination

In San Mateo County, remediation of contaminated sites is performed under the oversight of the San Mateo County Environmental Health (SMCEH) and the San Francisco Bay Regional Water Control Board (RWQCB). The SMCEH implements a local oversight program under contract with the State Water Resources Control Board to provide regulatory oversight of the investigation and cleanup of soil and groundwater contamination from leaking petroleum underground storage tanks

[11] Capable of being dissolved, especially in water.

and aboveground storage tanks. At sites where contamination is suspected or known to have occurred, the project sponsor is required to perform a site investigation and prepare a remediation plan, if necessary. For typical development projects, actual site remediation is completed either before or during the construction phase of the project. Site remediation or development may be subject to regulation by other agencies. As noted above, several properties slated for redevelopment have contaminated soil and groundwater which is currently subject to oversight by SMDEH. Future investigation and remediation of soil or groundwater contamination that is known, or has not yet been identified, would be subject to oversight by SMCEH.

San Mateo County Hazardous Waste Management Program

Assembly Bill (AB) 2948 requires counties and cities either to adopt a county hazardous waste management plan as part of their general plan, or enact an ordinance requiring that all applicable zoning subdivision, conditional use permit, and variance decisions be consistent with the county hazardous waste management plan. Once each County had its Hazardous Waste Management Program approved by the State, each city had 180 days to either: 1) adopt a City Hazardous Waste Management Plan containing specified elements consistent with the approved County Hazardous Waste Management Plan; 2) incorporate the applicable portions of the approved Plan, by reference, into the City's General Plan; or 3) enact an ordinance which requires that all applicable zoning, subdivision, conditional use permits, and variance decisions be consistent with the specified portions of the plan. San Mateo County has adopted a Hazardous Waste Management Program that addresses procedures for hazardous materials incidents. The City of Menlo Park adopted the county plan in 1989.

Under the San Mateo County plan, businesses must complete a Hazardous Materials Business Plan (Business Plan) for the safe storage and use of chemicals. Firefighters, health officials, planners, public safety officers, health care providers and others rely on the Business Plan in an emergency. They use it to prevent or lessen damage to the health and safety of people and the environment when a hazardous material is released. The Hazardous Materials Business Plan Program is also known as the Community Right to Know Program and any citizen has the right to review these plans upon request.

Local Plans and Policies

The City of Menlo Park does not currently include any policies or goals that specifically relate to the use of hazardous materials in their existing General Plan. However, the City's Municipal Code, Chapter 16 Zoning Ordinance requires a conditional use permit for hazardous materials use in the M1, M-2, and M-3 zoning districts. In addition, fuel storage for emergency generators associated with office uses can be reviewed through the use permit process in any zoning district that permits office uses. Hazardous materials use permit applications are routed to the Menlo Park Fire Protection District, San Mateo County Environmental Health, West Bay Sanitary District, and City of Menlo Park Building Division for their review and approval prior to Planning Commission review and action. The Menlo Park Fire Protection District would require a tank removal permit and inspection for the removal of any fuel tanks.

4.7.3 Impacts and Mitigation Measures

Retail as well as office and other commercial activities in the proposed Plan area would use hazardous chemicals common in these types of settings. These chemicals would include familiar materials, such as toners, paints, lubricants, kitchen and restroom cleaners, and other maintenance materials as well as chemicals used during operations. These common consumer products would be used for the same purposes as in any office or support setting, including residences. Retail uses can also handle hazardous materials that are stored in containers provided by manufacturer. The amounts of hazardous materials that would be stored or handled cannot be determined at this time; however, assumptions can be made that the amounts of hazardous materials and waste would not significantly change from existing conditions. Active automobile service stations are also present within the Plan area that store petroleum products in underground storage tanks. In addition, El Camino Real is a major transportation route that could include the transport of hazardous materials.

Significance Criteria

Implementation of the Plan would be considered to have significant hazardous materials and hazards impacts if it would:

- Create a significant hazard to the public or the environment through the routine transport, use, 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 one-quarter mile of an existing or proposed school;
- Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, create a significant hazard to the public or the environment;[12]
- Result in a safety hazard for people residing or working in the project area for a project within the vicinity of a private airstrip; or
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

Based on the proposed plan and its geographical location, the proposed plan would not result in impacts related to the following criteria. No impact discussion is provided for these topics for the reasons listed below.

[12] Government Code Section 65962.5, also referred to as the Cortese List, was originally visioned as a comprehensive list of release sites maintained by various agencies. However, this list is not currently actively maintained and a search of available databases as has been done for this analysis is considered the equivalent.

- *Private Airstrip.* There are no private airstrips or airports within a two-mile radius of the Plan area. The nearest airport is the Palo Alto Airport of Santa Clara County which is approximately 3 miles east of the Plan area. Therefore, there would be no impact related to airstrips or airports.

- *Emergency Response Plan.* New development in the Plan area would not permanently interfere with the existing road network or with the ability for emergency response vehicles to access all areas within the Plan area. Overall, future development would not impede emergency access routes and would continue to maintain the existing city grid systems. Additionally, the project would not result in permanent road closures that would physically interfere with emergency response or evacuation plans. The proposed closure at Chestnut Street for the Marketplace/Paseo is a one block street that would not overall interfere with emergency response or evacuation plans, as this segment is not a designated emergency evacuation route. Therefore, development within the Plan area would not impair or interfere with any emergency response or emergency evacuation plans.

Impacts

Impact HAZ-1: Disturbance and release of contaminated soil during demolition and construction phases of the project, or transportation of excavated material, or contaminated groundwater could expose construction workers, the public, or the environment to adverse conditions related to hazardous materials handling. (Potentially Significant)

Contaminated Soils and Groundwater

Future development within the Plan area could include excavation for installation of utilities, building foundations, subterranean development, or for regrading purposes. Disturbance of subsurface soils and groundwater at locations that may have been previously contaminated by prior uses could further disperse existing contamination into the environment and expose construction workers or the public to contaminants.

If high enough levels of hazardous materials in excavated soils should go undetected, health and safety risks to workers and the public could occur. Exposure to hazardous materials could cause various short-term and/or long-term health effects. Possible health effects could be acute (immediate, or of short-term severity), chronic (long-term, recurring, or resulting from repeated exposure), or both. Acute effects, often resulting from a single exposure, could result in a range of effects from minor to major, such as nausea, vomiting, headache, dizziness, or burns. Chronic exposure could result in systemic damage or damage to organs, such as the lungs, liver, or kidneys. Health effects would be specific to each hazardous material.

As identified in the setting section above, identified leaking underground storage tanks or spills, leaks, investigations and cleanup databases (SLIC) sites are present within the Plan area. These sites have had identified releases of hazardous materials which has impacted the subsurface soil or groundwater or both. These sites are in varying stages of investigation and cleanup with some having already received site closure. Contamination may also be present at some other unidentified locations where unidentified releases have occurred. It is not uncommon to encounter unexpected conditions once groundbreaking activities commence. Implementation of

the mitigation measure below would minimize the potential exposure to workers, the public and the environment.

> **Mitigation Measure HAZ-1:** Prior to issuance of any building permit for sites where ground breaking activities would occur, all proposed development sites shall have a Phase I site assessment performed by a qualified environmental consulting firm in accordance with the industry required standard known as ASTM E 1527-05. The City may waive the requirement for a Phase I site assessment for sites under current and recent regulatory oversight with respect to hazardous materials contamination, If the Phase I assessment shows the potential for hazardous releases, then Phase II site assessments or other appropriate analyses shall be conducted to determine the extent of the contamination and the process for remediation. All proposed development in the Plan area where previous hazardous materials releases have occurred shall require remediation and cleanup to levels established by the overseeing regulatory agency (San Mateo County Environmental Health (SMCEH), Regional Water Quality Control Board (RWQCB) or Department of Toxic Substances Control (DTSC) appropriate for the proposed new use of the site. All proposed groundbreaking activities within areas of identified or suspected contamination shall be conducted according to a site specific health and safety plan, prepared by a licensed professional in accordance with Cal/OHSA regulations (contained in Title 8 of the California Code of Regulations) and approved by SMCEH prior to the commencement of groundbreaking.
>
> **Significance after Mitigation:** Less than Significant.

Impact HAZ-2: Disturbance and release of hazardous structural and building components (i.e., asbestos, lead, PCBs, underground storage tanks, and above ground storage tanks) during demolition and construction phases of development or transport of these materials could expose construction workers, the public, or the environment to adverse conditions related to hazardous materials handling. (Less than Significant)

Based on the age of some of the structures within the Plan area, some of the existing buildings in the Plan area may contain asbestos, lead-based paint, and/or PCBs.

Asbestos

Potential exposure to asbestos, and its related chronic adverse health effects, is possible throughout demolition and renovation if materials that contain asbestos are present during operations. Based on the age of some of the buildings within the Plan area, it is likely that some asbestos containing materials (ACMs) are present. Affected buildings would need appropriate abatement of identified asbestos prior to demolition or renovation. ACMs are regulated both as a hazardous air pollutant under the Clean Air Act and as a potential worker safety hazard under the authority of Cal-OSHA. The renovation or demolition of buildings containing asbestos would require retaining contractors who are licensed to conduct asbestos abatement work and notify the Bay Area Air Quality Management District (BAAQMD).

Section 19827.5 of the California Health and Safety Code, adopted January 1, 1991, requires that local agencies not issue demolition or alteration permits until an applicant has demonstrated compliance with notification requirements under applicable federal regulations regarding hazardous air pollutants, including asbestos. The BAAQMD is vested by the California legislature with authority to regulate airborne pollutants, including asbestos, through both inspection and law enforcement, and is to be notified ten days in advance of any proposed demolition or abatement work. However, abatement of known or suspected ACMs, as verified by survey, would occur prior to demolition or construction activities pursuant to an asbestos abatement plan developed by a State-certified asbestos consultant as required by law. All ACMs would be removed and appropriately disposed of by a State-certified asbestos contractor. The City Building Division enforces these requirements through its requirements for demolition permits, which require an approved permit from the BAAQMD verifying the complete abatement of asbestos from any structure to be demolished, prior to issuance of a demolition permit. Adherence to all the aforementioned regulatory requirements would ensure that potential impacts related to ACMs would be less than significant, and no mitigation is required.

Lead and Lead-based Paint

Lead-based paint could be separated from building materials during any demolition processes. Separated paint can be classified as a hazardous waste if the lead content exceeds 1,000 parts per million and would need to be disposed of accordingly. Additionally, lead-based paint chips can pose a hazard to workers and adjacent sensitive land uses. Both the Federal and California OSHAs regulate all worker exposure during construction activities that impact lead-based paint. Interim Final Rule found in 29 CFR Part 1926.62 covers construction work where employees may be exposed to lead during such activities as demolitions, removal, surface preparation for re-painting, renovation, clean up and routine maintenance. The OSHA-specified method of compliance includes respiratory protection, protective clothing, housekeeping, hygiene facilities, medical surveillance, training, etc. Potential violations related to lead can be reported to the EPA and the County Environmental Health Division for enforcement.

Demolition and renovation work could create exposure to lead-based paint present in building structures. Dust generating activities that include removal of walls, sanding, welding, and material disposal could produce airborne quantities of lead-laden material. These materials could expose workers and persons in close proximity, including occupants of offsite locations. The Plan area contains buildings with painted surfaces, such as drywall, ceilings, and exterior stucco, which could contain lead-based paint.

Requirements for lead hazard evaluation and abatement activities, accreditation of training providers, and certification of individuals engaged in lead-based paint activities is found in California Code of Regulations Title 17, Section 35001 et seq. California's lead accreditation and certification program began in June, 1994. At that time, new childhood lead poisoning prevention legislation (codified in Health and Safety Code 105250 et seq.) required the California Department of Public Health (CDPH, formerly Department of Health Services) to create a program to certify lead-related construction trades-people and accredit lead-related construction training providers. Final regulations establishing this program took effect April 5, 1995.

Revisions to these regulations that established work practice standards for lead-related construction and amended the previously established accreditation and certification requirements went into effect in January, 1999. These regulations were updated in April 2008.

With implementation of an abatement plan, as required, and all the regulatory requirements regarding identification, handling, and disposal of lead based paint, the potential impacts related to demolition activities of lead-based paint materials would be reduced to less-than-significant levels. No mitigation is required.

PCB-containing Materials

The presence of PCB-containing materials may be present within the existing structures in the Project Area. The detection of significant concentrations of PCBs indicates the former use and/or storage of PCBs in the Plan area. Demolition of these structures could disturb these materials and expose workers or the public to adverse effects. Similar to the concerns of asbestos containing materials, an initial survey to determine the presence of PCBs would need to be conducted for a specific site followed by implementation of appropriate measures to handle any materials with PCBs.

Generally, the majority of PCB containing electrical transformers has been abated of PCBs. For the isolated locations where PCBs remain, appropriate identification and removal work would be required according to Federal and State standards. PCBs are managed under the Toxic Substances Control Act (TSCA) and the PCB regulations found at 40 Code of Federal Regulations 761. TSCA gives EPA's Office of Solid Waste and Emergency Response the authority to develop, implement and enforce regulations concerning the use, manufacture, cleanup and disposal of PCBs. Therefore, with adherence to regulatory requirements, the potential for PCBs in aboveground structures to impact Specific Plan activities would be reduced to less-than-significant levels.

Therefore, with adherence to the regulatory requirements that apply to hazardous building materials, the potential impacts from disturbance of these materials during demolition activities are reduced to less-than-significant levels.

Significance: Less than Significant.

Impact HAZ-3: Hazardous materials used on any individual site during construction activities (i.e., fuels, lubricants, solvents) could be released to the environment through improper handling or storage. (Potentially Significant)

Any future construction activities would require the use of certain hazardous materials, such as fuels, oils, lubricants, solvents, and glues. Inadvertent release of these materials into the environment could adversely impact soil, surface waters, or groundwater quality. Larger developments could potentially include onsite storage and/or use of quantities of materials capable of significantly impacting soil and groundwater. Projects that disturb more than one acre

would be required to adhere to the requirements of the General Construction Permit issued by the Regional Water Quality Control Board as discussed in Section 4.8, *Hydrology and Water Quality*. One of the requirements of the permit is the implementation of a storm water pollution prevention plan which includes measures to prevent the accidental release of hazardous materials used during construction. Implementation of the mitigation measure provided below would reduce the impacts to a less-than-significant level.

> **Mitigation Measure HAZ-3.** All development and redevelopment shall require the use of construction Best Management Practices (BMPs) to control handling of hazardous materials during construction to minimize the potential negative effects from accidental release to groundwater and soils. For projects that disturb less than one acre, a list of BMPs to be implemented shall be part of building specifications and approved of by the City Building Department prior to issuance of a building permit.
>
> **Significance after Mitigation:** Less than Significant.

Impact HAZ-4: Future development would include land uses that would handle various commercial, transportation and household hazardous materials in a range of quantities, and could cause an adverse effect on the environment through accidental upset. (Less than Significant)

Development and redevelopment in the Plan area would include commercial/retail, and residential uses that may handle, store, and transport various hazardous materials and consequently generate hazardous wastes. In general, current regulations require that all hazardous materials and wastes are stored, handled, and disposed of according to a host of safety requirements that are intended to protect human health and the environment. For general commercial/retail land uses as well as residential uses, hazardous materials are generally handled and transported in relatively small quantities and because the health effects associated with them are generally not as serious as industrial uses, significant adverse effects on the environment are less common.

As noted previously, the City of Menlo Park conditionally permits the use of hazardous materials only in the M-1, M-2, and M-3 zoning districts, with the exception of fuel storage for emergency generators in association with office buildings, which can be conditionally permitted in any zoning district that permits offices (including the Plan area). Any applicant proposing an emergency generator in the Plan area that would handle hazardous materials would be required to submit a Hazardous Materials Business Plan for review and approval by the San Mateo County Environmental health (SMCEH). The City of Menlo Park has a policy for reviewing the use of hazardous materials that it coordinates with the county and the Menlo Park Fire Protection District. Once approved this plan will be kept on file and updated as necessary. The purpose of the Hazardous Materials Business Plan is to ensure that employees are adequately trained to handle the materials and provides information to the Menlo Park Fire Protection District should emergency response be required. The Hazardous Materials Business Plan typically includes the following:

- The types of hazardous materials or chemicals stored and/or used on site;
- The location of such hazardous materials;
- An emergency response plan including employee training information; and
- A plan that describes the manner in which these materials are handled, transported and disposed.

Although portions of the Plan area would be within one-quarter mile of a school (such as Menlo School, Nativity School, and St. Raymond's School), hazardous materials use would be limited to either small quantities or emergency generator fuel that has been reviewed and approved by relevant agencies for adequate protections. As a result, the impact on nearby schools would be less than significant.

Significance: Less than Significant.

Cumulative Impacts

Hazardous material impacts typically occur in a local or site-specific context versus a cumulative context combined with other development projects. It is possible, however for combined effects of transporting and disposal of hazardous materials to be affected by cumulative development.

Future development, with implementation of the identified mitigation measures above, would have a less than significant hazardous materials impact to the public or the environment within the vicinity of the project area. Other foreseeable development within the area, although likely increasing the potential to disturb existing contamination and potentially increase the handling of hazardous materials, would be required to comply with the same regulatory framework as the proposed Specific Plan. These stringent regulatory requirements includes federal and state regulatory requirements for transporting (CalEPA and Caltrans) hazardous materials or cargo (including fuel and other materials used in all motor vehicles) on public roads or disposing of hazardous materials (CalEPA, Department of Toxic Substances Control, San Mateo County Environmental Health). Therefore, the effect of the project on hazardous materials, in combination with other foreseeable projects, would be less than significant. Therefore, no mitigation is required.

Mitigation: None required.

4.8 Hydrology and Water Quality

This section discusses the hydrology and water quality issues related to the proposed development within the planning area. This section provides an overview of the regulatory setting that is applicable to hydrology and water quality within the planning area and potential impacts and appropriate mitigation measures, as necessary.

4.8.1 Environmental Setting

The Plan area is located in San Mateo County, California in a region characterized by intermittent and perennial drainages that generally flow eastward from the Santa Cruz Mountains towards the sloughs and tidal flats of south San Francisco Bay. The drainages in the region include both unlined daylighted segments where surface water flows similar to how it did prior to any development, concrete lined segments, and culverted segments that were engineered for the purpose of accommodating urban development.

Surface Water Features

Regional Drainage Patterns

The Plan area lies within the San Francisco Bay hydrologic region. The San Francisco Bay hydrologic region extends from southern Santa Clara County north to Tomales Bay in Marin County, and inland to the confluence of the Sacramento and San Joaquin rivers. The eastern boundary of the hydrologic region follows the crest of the Coast Range Mountains. Creeks and streams in the region flow to the San Francisco Bay estuary or directly to the Pacific Ocean. Along the peninsula, watershed boundaries are formed by natural topographic divides, or engineered structures that alter natural drainage patterns (such as dams, engineered channels or major roadways). The planning area is located on the San Mateo Plain, an alluvial plain just north of the Santa Clara Valley. In this area, surface drainage generally flows from southwest to northeast, conveying water from the Santa Cruz Mountains to the southern San Francisco Bay.

Local Drainage Patterns

The Plan area is bounded on the northwest by Atherton Channel (also known as Atherton Creek) and the southeast by San Francisquito Creek. Both of these creeks run perpendicular to El Camino Real and eventually drain into the southern San Francisco Bay. The project area is characterized by medium density urban development, including a mix of commercial uses, residential developments, parking lots, and streets and railroad tracks. The topography of the site is generally flat to gently sloping, and stormwater is collected via the street network and conveyed to two storm drains along El Camino Real. A drainage divide runs parallel between both creeks, crossing the middle of the Plan area. Thus, one of the storm drains conveys surface runoff from the northwestern half of the Plan area to Atherton Channel, and the other conveys water from the southeastern half of the Plan area to San Francisquito Creek.[1]

[1] Sowers, J.M., Givler, R.W., et al., *Creek and Watershed Map of the San Francisco Peninsula: a Digital Database, version 1.0*, William Lettis and Associates, Inc., Walnut Creek, CA, 1:24,000 scale, 2007.

Existing deficiencies exist within the stormwater collection system in the Plan area, which is owned and operated by the City. The City published a citywide storm drainage study in May 2003 that identified existing areas of concern and developed priorities for system repairs and upgrades. According to the Specific Plan, the study found that "existing storm drain lines, with very few exceptions, do not convey the ten year storm flow per the City's design policies." The study recommended that most storm drains in the Plan area be replaced or augmented to increase system capacity. The study assigned a high priority to installation of a new storm drain and inlet at the northeast end of Spruce Avenue—in the far north of the Plan area—and also identified the need to replace some 1,700 feet of storm drain with a larger box culvert to reduce the risk of flooding on El Camino Real.

Surface Water

The major surface water bodies in the project vicinity are the southern portion of San Francisco Bay, San Francisquito Creek, Atherton Channel, and Searsville Lake. **Table 4.8-1** describes the two primary creeks that border the Plan area, their watershed area, length, and character. Atherton Channel begins in Woodside, south of Interstate 280 and exists mostly as engineered channels and storm drains as it passes through Atherton, and then along Marsh Road and Haven Avenue in Menlo Park. Only small reaches of its headwaters exist as natural open channels.

TABLE 4.8-1
CREEKS IN THE PLAN AREA

Creek Name	Watershed Area (sq miles)	Channel Length (miles)[a]	Location Relative to Project Area	Surface Water Character
San Francisquito Creek	45.6	118.3 (90.6)	Southwestern border crossing perpendicular to El Camino Real	Open Creek
Atherton Channel	8.9	30.7 (3.6)	Northeastern border crossing perpendicular to El Camino Real	Concrete Channel west of El Camino Real, Storm Drain and Concrete Channel east of El Camino Real. Opens at reach for part of Holbrook Palmer Park and along some of Marsh Road.

[a] Channel length represents total length of main stem stream plus all tributaries. Parentheses indicate the length of the creek that has been unmodified. The rest of the creek exists as engineered channels, culverts or storm drains.

SOURCES: Sowers, J.M., Givler, R.W., et al., *Creek and Watershed Map of the San Francisco Peninsula: a Digital Database, version 1.0*, William Lettis and Associates, Inc., Walnut Creek, CA, 1:24,000 scale, 2007.;
San Mateo Countywide Water Pollution Prevention Program (SMCWPPP), July 2007. San *Mateo County Watershed Data in a GIS.* http://www.flowstobay.org/cs_watershed_studies.php, accessed January 16, 2009.

San Francisquito Creek begins at the outlet of the Searsville Reservoir, and exists largely as an unmodified, open creek. Only its lower-most reach near the San Francisco Bay exists as an engineered channel for about one mile. San Francisquito Creek is a perennial[2] stream, but it

[2] Perennial streams flow year-round.

sustains very low summer flows, and its headwaters and tributaries are intermittent drainages that flow only during the rainy season.[3] The creek is known to support a small run of steelhead trout.

Water Quality

Beneficial Uses

The beneficial uses of the surface water bodies in the Plan area have been designated by the San Francisco Bay Regional Water Quality Control Board (RWQCB) in the *Water Quality Control Plan for the San Francisco Bay Region* (Basin Plan). The beneficial uses provide the basis for determining appropriate water quality objectives that are needed to maintain the beneficial uses of these waters. The beneficial uses for water bodies in the project vicinity are shown in **Table 4.8-2**.

TABLE 4.8-2
DESIGNATED BENEFICIAL USES OF WATER BODIES IN THE PLAN AREA VICINITY

Water Body	Designated Beneficial Uses
Surface Water	
San Francisco Bay, South	COMM, EST, IND, MIGR, NAV, RARE, REC-1, REC-2, SHELL, SPWN (potential), WILD
San Francisquito Creek[a]	COLD, MIGR, SPWN, WARM, WILD, REC-1 (potential), REC-2 (potential)
Groundwater Basins[b]	
Searsville Lake	AGR, COLD, SPWN, WARM, WILD, REC-1, REC-2
Santa Clara Valley (San Mateo Plain Sub-Basin)	MUN, PROC, IND, AGR (potential)
Santa Clara Valley (Santa Clara Sub-Basin)	MUN, PROC, IND, AGR

NOTES:

[a] San Francisquito Creek forms the southeast boundary of the Menlo Park Downtown/El Camino Real Specific Plan Area.
[b] These two basins are separated by San Francisquito Creek. The Santa Clara Sub-Basin is also known as Coyote Valley.

Beneficial Uses Key:
MUN (Municipal and Domestic Supply); AGR (Agricultural Water Supply); REC-1 (Body Contact Recreation); REC-2 (Noncontact Recreation); WARM (Warm Freshwater Habitat); COLD (Cold Freshwater Habitat); MIGR (Fish Migration); SPWN (Fish Spawning); WILD (Wildlife Habitat); NAV (Navigation); GWR (Groundwater Recharge); FRSH (Freshwater Replenishment); RARE (Preservation of Rare and Endangered Species); SHELL (Shellfish Harvesting); COMM (Ocean, Commercial, and Sport Fishing); EST (Estuarine Habitat); IND (Industrial Service Supply); PROC (Industrial process water supply).

SOURCE: RWQCB, 2007.

[3] Harris, R.R. and S.D. Kocher, *Local Agency Policies and Procedures for Protecting Steelhead Habitat: San Francisquito Watershed, Santa Clara and San Mateo Counties, Californi*a. University of California, Berkeley, Center for Forestry, 58 pp. + app, 2006

Clean Water Act Section 303(d) List of Impaired Water Bodies and Total Maximum Daily Load

In accordance with Section 303(d) of the Clean Water Act, state governments must present the U.S. Environmental Protection Agency (EPA) with a list of impaired water bodies, defined as those water bodies that do not meet water quality standards, even after point sources of pollution have installed the minimum required levels of pollution control technology (see also discussion of impaired water bodies in Regulatory Setting below).[4] Listed impaired water bodies in the vicinity of the Plan area are presented in **Table 4.8-3**, including the planned date for the Total Maximum Daily Load (TMDL) completion. The process might take four to six years from the beginning of a TMDL project to a water quality control plan (Basin Plan) amendment (see also discussion of Basin Plan in Regulatory Setting below).

TABLE 4.8-3
SECTION 303(D) LIST OF IMPAIRED WATER BODIES

Water Body	Pollutant	Potential Source	Status of TMDL Preparation and Approval[b]
San Francisquito Creek	Diazinon	Urban runoff/storm sewers	Approved (2007)
	Sedimentation, Siltation[a]	Nonpoint Source	Planned (2013)
San Francisco Bay (Lower and South)	Chlordane	Nonpoint source	Planned (2013)
	DDT	Nonpoint source	Planned (2013)
	Dieldrin	Nonpoint source	Planned (2013)
	Dioxin compounds	Atmospheric deposition	Planned (2019)
	Invasive species	Ballast water	Planned (2019)
	Furan compounds	Atmospheric deposition	Planned (2019)
	Mercury	Industrial point sources	Approved (2008)
		Municipal point sources	
		Resource extraction	
		Atmospheric deposition	
		Natural sources	
		Nonpoint source	
	PCBs	Unknown nonpoint source	Planned (2008)
	PCBs (dioxin-like)	Unknown nonpoint source	Planned (2008)
	Selenium (south bay only)	Agriculture	Planned (2019)
		Domestic use of groundwater	

NOTES:

[a] Impairment to steelhead habitat

[b] The date of planned TMDL completion is provided in the 303(d) lists from the State Water Resources Control Board. Although the planned date of completion has been passed for many of the TMDL projects, approved TMDLs have not been completed as of January 2011.

SOURCE: State Water Resources Control Board (SWRCB), *2010 Integrated Report (Clean Water Act Section 303(d) List / 305(b) Report.* http://www.swrcb.ca.gov/water_issues/programs/tmdl/integrated2010.shtml, approved by the SWRCB on August 4, 2010; Accessed January 11, 2011.

[4] State Water Resources Control Board (SWRCB), *2010 Integrated Report (Clean Water Act Section 303(d) List / 305(b) Report*, approved by the SWRCB on August 4, 2010.

San Francisquito Creek has been recognized by the State Water Resources Control Board (SWRCB) as being impaired with Diazinon and Sediment/Silt. Diazinon is an insecticide that has been used on lawns, gardens, agricultural crops, and livestock. The use of this pesticide, however, has declined rapidly since 1999; and in 2004, the EPA phased out most urban applications of diazinon. It is important to note that the TMDL and related strategy approved for diazinon would apply to all urban creeks in the Bay Area, regardless of whether they are formally designated as impaired [5]; thus, Atherton Channel should be considered as impaired with diazinon as well. This is because all Bay Area urban creeks can reasonably be assumed to receive pesticide discharges, and because implementation actions will be most efficient if applied region-wide.

Sedimentation and siltation is the primary threat to steelhead trout, which is known to inhabit San Francisquito Creek. A TMDL strategy from sedimentation/siltation is planned for 2013. Both the Santa Clara Valley Water District and the San Mateo Countywide Water Pollution Prevention Program have jurisdiction over parts of the San Francisquito Creek Watershed, and have watershed, restoration and stormwater management programs that are addressing these issues. The San Francisquito Creek TMDL project is currently focused on gaining an understanding of the sources and impacts of excess sediment in this watershed, one of the most promising steelhead habitats in the South Bay.

Understanding water quality problems in the watershed will allow the many engaged stakeholders to work together to preserve, protect, and restore this valuable fishery. The San Francisquito Creek Joint Powers Authority (JPA) is responsible for the San Francisquito Creek Watershed Analysis and Sediment Reduction Plan which partially fulfills National Pollution Discharge Elimination System (NPDES) permit provisions that require the co-permittees of the Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP) and the San Mateo Countywide Stormwater Pollution Prevention Program (SM-STOPPP) within the San Francisquito Creek watershed to assess and implement sediment management measures in the watershed.

All Bay Area urban creeks were placed on the State Water Resources Control Board 2002 "Monitoring List[6]" due to the potential of trash to impair water quality.[7] While trash is not a pollutant in the Section 303(d) list, trash can threaten aquatic life and recreational beneficial uses designated by the Basin Plan. Trash and litter in creeks vary greatly depending on nearby land uses and proximity to road over-crossings. This indicated that trash is a water quality concern for both San Francisquito Creek and Atherton Channel.

5 California Regional Water Quality Control Board, San Francisco Bay Region (SF Bay RWQCB). *Diazinon and Pesticide-Related Toxicity in Bay Area Urban Creeks Water Quality Attainment Strategy and Total Maximum Daily Load (TMDL) - Proposed Basin Plan Amendment and Staff Report*, Prepared by Bill Johnson. November 2005.

6 The SWRBC "Monitoring List" contains the list of water bodies where minimal, contradictory, or anecdotal information suggests that water quality standards are not being achieved but the available data or information is inadequate to draw a conclusion.

7 State Water Resources Control Board (SWRCB), *Revision of the Clean Water Act Section 303(d) List of Water Quality Limited Segments, Staff Report*, February 2003.

Groundwater Hydrology

The Plan area is within the Santa Clara Valley Groundwater Basin. The basin is composed primarily of geologically young fluvial, alluvial fan, and basin deposits of clay, silt, sand and gravel. Businesses located within the Plan area with documented releases to soil or groundwater have reported groundwater levels ranging from 29 to 45 feet below the ground surface, as discussed in the Hazardous Materials section. Groundwater along El Camino Real is likely to be shallowest closer to Atherton Channel and San Francisquito Creek, and deepest along the drainage divide, in the middle of the Plan area. Groundwater flow direction is primarily in the direction of the San Francisco Bay, but may be locally influenced by the creeks or groundwater wells.

The Santa Clara Groundwater Basin is further divided into subbasins based on topographic divides and the location of various groundwater aquifers. The Plan area is part of the San Mateo Plain Groundwater Subbasin, and its southeastern boundary is marked by San Francisquito Creek. The southeastern side of the creek is part of the Santa Clara Groundwater Subbasin. The designated beneficial uses of groundwater basins, as defined in the Basin Plan, are presented in Table 4.8-2.

San Mateo Plain Subbasin

The San Mateo subbasin occupies a structural trough, sub-parallel to the northwest trending Coast Ranges, at the southwest end of San Francisco Bay. San Francisco Bay constitutes its eastern boundary. The Santa Cruz Mountains form the western margin of the San Mateo subbasin. The Westside basin bounds it on the north and its southern limit is defined by San Francisquito Creek. The basin is composed of alluvial fan deposits formed by tributaries to San Francisco Bay that drain the basin.[8] The water bearing formations of the San Mateo subbasin are comprised of two groups: the Santa Clara Formation of Plio-Pleistocene age and the Quaternary age alluvial deposits. The Quaternary alluvium constitutes the most important water bearing formation of this basin and basically all larger yielding wells acquire their water from it (Department of Water Resources, 2004). Groundwater from the basin is known to have high concentrations of saline, and some wells have reported concentrations of nitrate-nitrogen that exceed EPA maximum contaminant levels.[9]

Groundwater extracted during construction within the plan area is likely to have contamination issues due to the numerous Regional Water Quality Control Board (RWQCB) and Department of Toxic Substances Control hazardous waste cleanup sites in the area (see Section 4.7, Hazardous Materials and Hazards).

8 Department of Water Resources (DWR), *California's Groundwater, Bulletin 118, San Francisco Bay Hydrologic Region, Individual Basin Description for the Santa Clara Valley Groundwater Basin: San Mateo Plain Subbasin.* February 2004.

9 Department of Water Resources (DWR), *California's Groundwater, Bulletin 118, San Francisco Bay Hydrologic Region, Individual Basin Description for the Santa Clara Valley Groundwater Basin: San Mateo Plain Subbasin.* February 2004.

Flood Hazards

Flooding is inundation of normally dry land as a result of rise in the level of surface waters or rapid accumulation of stormwater runoff. Flooding can also occur due to tsunamis, seiches, or failure of dams.

Flooding

The only area in the vicinity of the Specific Plan that is mapped by the Federal Emergency Management Agency (FEMA) within the 100-year flood event is associated with the San Francisquito Creek channel.[10] The FEMA mapped flood zone reflects the areas adopted for insurance purposes and are also the zones that appear in the San Mateo County General Plan. An excerpt of the FEMA map for this area is included as **Figure 4.8-1**. Generally, the portion of San Francisquito Creek upstream of El Camino Real is considered to have adequate capacity to convey a 100-year storm event, however, some shallow inundation (about 1 feet or less) is anticipated along the creek between El Camino Real and Highway 101 (San Francisco Creek Coordinated Resource Management and Planning).11 Such an event could potentially affect the extreme southeastern portion of the study area.

Dam Failure

Several reservoirs in the region present the remote risk of downstream inundation in the event of a dam failure. The California Office of Emergency Management (now the California Emergency Management Agency) has directed dam operators to delineate areas likely to be inundated in the event of a catastrophic dam failure.[12] Dam inundation zones have been mapped for the Felt Lake Dam and the Searsville Dam (upstream of San Francisquito Creek). Dam inundation mapping indicates that failure of the Felt Lake Dam would flood areas upstream of El Camino Real, just outside the boundaries of the Plan area. However, failure of the Searsville Dam could inundate portions of the planning area along El Camino Real from College Avenue east to San Francisquito Creek. A generalized dam failure inundation map is included as **Figure 4.8-2**.

4.8.2 Regulatory Setting

Water Quality Regulations

The federal Clean Water Act (1972) and subsequent amendments, under the enforcement authority of the EPA, were enacted "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." The Clean Water Act gave the EPA the authority to implement pollution control programs such as setting wastewater standards for industry. The act also set water quality standards for surface waters and established the National Pollutant

[10] Federal Emergency Management Agency (FEMA), *Flood Insurance Rate Map Panel No. 060321 0011D*, Prepared by FEMA, available online at http://msc.fema.gov, April 21, 1999.

[11] San Francisquito Creek Coordinated Resource Management and Planning (CRMP), *Reconnaissance Investigation Report of San Francisquito Creek*, December 1997.

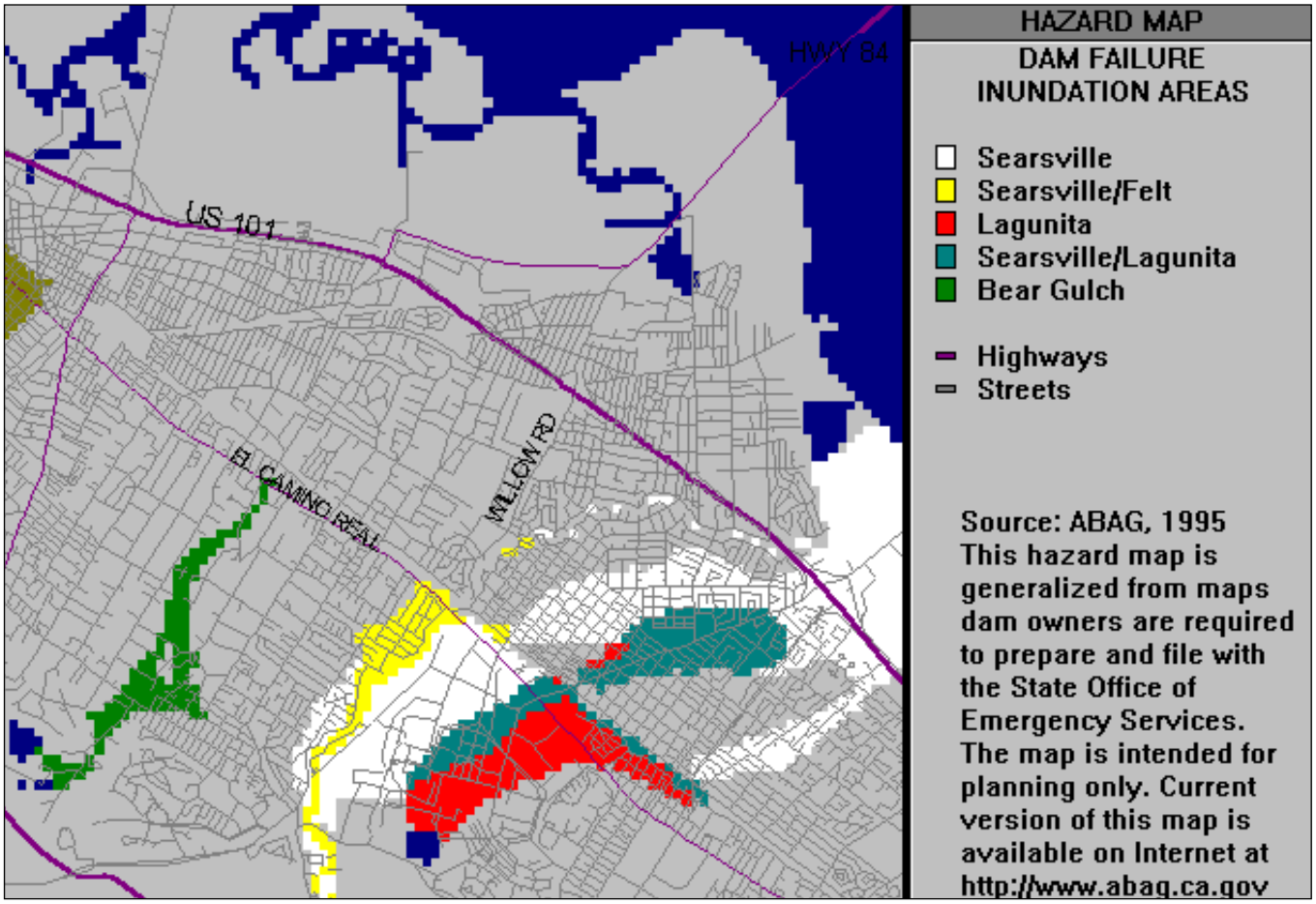
[12] Office of Emergency Services (OEM), *Dam Inundation – Registered Images and Boundary Files in ArcView Format*, November 2007.

SOURCE: FEMA, 1999

Menlo Park El Camino Real/Downtown Specific Plan EIR . 208581

Figure 4.8-1

Flood Zone in the Specific Plan Area



Menlo Park El Camino Real/Downtown Specific Plan EIR . 208581

SOURCE: ABAG, 1995

Figure 4.8-2
Dam Failure Inundation Areas

Discharge Elimination System (NPDES) program to protect water quality. Under Section 402 of the act, discharge of pollutants to navigable waters is prohibited unless the discharge is in compliance with an NPDES permit. The EPA determined that California's water pollution control program has sufficient authority to manage the NPDES program under state law in a manner consistent with the Clean Water Act. Therefore, implementation and enforcement of the NPDES program is conducted through the California State Water Resources Control Board and the nine Regional Water Quality Control Boards. These agencies also implement the Waste Discharge Requirements Program, which regulates discharges of waste to land under the California Water Code as well as discharges of waste into waters of the state that are outside federal jurisdiction, as defined under the Clean Water Act.

The San Francisco Bay Regional Water Quality Control Board, Region No. 2, regulates water quality in the Plan area under the State of California's Porter-Cologne Water Quality Control Act through the regulatory standards and objectives set forth in the water quality control plan (referred to as the Basin Plan) prepared for the region. The Basin Plan identifies existing and potential beneficial uses and provides numerical and narrative water quality objectives to protect those uses. The current Basin Plan was adopted on January 18, 2007 and is periodically updated and amended.[13]

Impaired Water Bodies and Total Maximum Daily Loads

In accordance with Section 303(d) of the Clean Water Act, state governments must present the EPA with a list of "impaired water bodies," defined as those water bodies that do not meet water quality standards, even after point sources of pollution have installed the minimum required levels of pollution control technology. The law requires the development of actions, known as total maximum daily loads (TMDLs), to improve water quality of impaired water bodies. The TMDL is the quantity of a pollutant that can be safely assimilated by a water body without violating water quality standards. The TMDL serves as the means to attain and maintain water quality standards for the impaired water body to support designated and potential beneficial uses identified in the Basin Plan, prepared by the Regional Water Quality Control Board. The listing of a water body as impaired does not necessarily suggest that the water body cannot support the beneficial uses; rather, the intent is to identify the water body as requiring future development of a TMDL to maintain water quality and reduce the potential for future water quality degradation. NPDES permits for water discharges must take into account the pollutant from which a water body is listed as impaired. Specific requirements for the permits would be specified in the TMDL for that pollutant.

The Basin Plan amendment incorporating a TMDL and water quality attainment strategy for diazinon and pesticide-related toxicity in the Bay Area's urban creeks has been incorporated into the Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan). The amendment was adopted by the Regional Water Quality Control Board on November 16, 2005, and approved by the State Water Resources Control Board on November 15, 2006.

[13] California Regional Water Quality Control Board, San Francisco Bay Region (SF Bay RWQCB), *San Francisco Bay Basin (Region 2) Water Quality Control Plan (Basin Plan)*, January 18, 2007.

Construction in Waters of the State and of the United States

The Regional Water Quality Control Board has regulatory authority over construction in waters of the United States and waters of the state, including activities in wetlands, under both the federal Clean Water Act and the State of California's Porter-Cologne Water Quality Control Act (California Water Code, Division 7). Under the Clean Water Act, the Regional Water Quality Control Board has regulatory authority over actions in waters of the United States through the issuance of water quality certifications under Section 401 of the Clean Water Act, which are issued in conjunction with permits issued by the Army Corps of Engineers under Section 404 of the Clean Water Act. When the Regional Water Quality Control Board issues a Section 401 certification for a project, the project is also regulated under State Water Resources Control Board Order No. 2003-0017-DWQ, "General Waste Discharge Requirements for Dredge and Fill Discharges That Have Received State Water Quality Certification," which requires compliance with all conditions of the water quality certification. Activities in areas that are outside the jurisdiction of the Army Corps of Engineers (e.g., isolated wetlands, vernal pools, or stream banks above the ordinary high water mark) are regulated by the Regional Water Quality Control Board under the authority of the Porter-Cologne Act. Activities that lie outside of the Army Corps of Engineers jurisdiction may require the issuance of either individual or general waste discharge permits.

Section 401 of the Clean Water Act provides the State Water Resources Control Board and the Regional Water Quality Control Boards with the regulatory authority to waive, certify, or deny any proposed federally permitted activity that could result in a discharge to surface waters of the state. To waive or certify an activity, these agencies must find that the proposed discharge will comply with state water quality standards, including protection of beneficial uses and water quality objectives. If these agencies deny the proposed activity, the federal permit cannot be issued. This water quality certification is generally required for projects involving the discharge of dredged or fill material to wetlands or other water bodies, as described in Section 4.3, Biological Resources.

Under the California Fish and Game Code, the California Department of Fish and Game has jurisdiction over any activity that could affect the bank or bed of any stream that has value to fish and wildlife. If any changes are proposed along a creek or waterway within its jurisdiction, a streambed alteration agreement would be required under California Fish and Game Code Sections 1601 and 1603. Refer to Section 4.3, Biological Resources, for additional information.

National Pollutant Discharge Elimination System (NPDES) Waste Discharge Regulations

The NPDES program requires all facilities that discharge pollutants into waters of the United States follow a permitting process. The discharge permit provides two levels of control for the protection of water quality: technology-based limits and water-quality-based limits. Technology-based limits are based on the ability of dischargers in the same category to treat wastewater, while water-quality-based limits are required if technology-based limits are not sufficient to provide protection of the water body. Water-quality-based effluent limitations required to meet water quality criteria in the receiving water are based on criteria specified in the National Toxics Rule, the California Toxics Rule, and the Basin Plan. NPDES permits must also incorporate Total Maximum Daily Load (TMDL) waste load allocations when they are developed.

The NPDES regulations initially focused on municipal and industrial wastewater discharges and then addressed stormwater discharge regulations, which became effective in November 1990. NPDES permits for wastewater and industrial discharges specify discharge prohibitions and effluent limitations and also include other provisions (such as monitoring and reporting programs) deemed necessary to protect water quality. In California, the State Water Resources Control Board and the Regional Water Quality Control Boards implement and enforce the NPDES program.

Municipal Stormwater Permits

Stormwater in San Mateo County is managed in accordance with a municipal stormwater NPDES permit from the San Francisco Bay Regional Water Quality Control Board (permit no. R2-2009-0074). This permit contains a comprehensive plan to reduce the discharge of pollutants to the "maximum extent practicable" and mandates that participating municipalities implement an approved stormwater management plan. The stormwater program incorporates best management practices (BMPs) that include construction controls (such as a model grading ordinance), legal and regulatory approaches (such as stormwater ordinances), public education and industrial outreach (to encourage the reduction of pollutants at various sources), inspection activities, wet-weather monitoring, and special studies.

The Regional Water Quality Control Board added provision C.3 to the San Mateo County municipal stormwater permit in 2003 and is included in the 2009 NPDES permit. In accordance with these C.3 requirements, new development and redevelopment projects are required to incorporate treatment measures and other appropriate source control and site design features to reduce the pollutant load in stormwater discharges and manage runoff flows. New and redevelopment projects that involve the creation or replacement of 10,000 square feet or more of impervious surfaces must comply with the C.3 requirements. Reconstruction projects located within a public street or right-of-way, such as pipeline projects, are exempt from the C.3 requirements where both sides of the right-of-way are developed.

Construction Stormwater NPDES Permit

The federal Clean Water Act prohibits discharges of stormwater from construction projects unless the discharge is in compliance with an NPDES permit. The State Water Board is the permitting authority in California and has adopted a Statewide General Permit for Stormwater Discharges Associated with Construction Activity (Construction General Permit, Order No. 99-08) that encompasses one or more acres of soil disturbance. Effective July 1, 2010 all dischargers are required to obtain coverage under the updated Construction General Permit Order 2009-0009-DWQ, adopted on September 2, 2009. Construction activities include clearing, grading, excavation, stockpiling, and reconstruction of existing facilities (removal or replacement).

In general, the Construction General Permit requires that the landowner and/or contractor submit a notice of intent (NOI) and develop and implement a storm water pollution prevention plan (SWPPP). It is the responsibility of the landowner to obtain coverage under this General Permit prior to commencement of construction activities. To obtain coverage, the landowner must file an NOI with a vicinity map and the appropriate fee to the State Water Board. The NOI requirements of

the General Permit are intended to establish a mechanism which can be used to clearly identify the responsible parties, locations, and scope of operations of dischargers covered by the General Permit and to document the discharger's knowledge of the requirements for a SWPPP. The new permit requires a risk-based permitting approach, dependent upon the likely level of risk imparted by a project. The new permit also contains several additional compliance items, including: (1) additional mandatory Best Management Practices (BMPs) to reduce erosion and sedimentation, which may include incorporation of vegetated swales, setbacks and buffers, rooftop and impervious surface disconnection, bioretention cells, rain gardens, rain cisterns, implementation of pollution/sediment/spill control plans, training, and other structural and non-structural actions; (2) sampling and monitoring for non-visible pollutants; (3) effluent monitoring and annual compliance reports; (4) development and adherence to a Rain Event Action Plan; (5) requirements for the post-construction period; (6) numeric action levels and effluent limits for pH and turbidity; (7) monitoring of soil characteristics on site; and (8) mandatory training under a specific curriculum. Under the updated permit, BMPs will be incorporated into the compliance action and monitoring requirements for each development site, as compared to the existing permit, where specific BMPs are implemented via a SWPPP. Under the updated permit, a SWPPP would be reviewed by the State Water Board. The City verifies that developments have met all State Water Board permitting requirements prior to issuance of City approval of a grading and drainage plan.

Local Plans and Policies

San Mateo Countywide Water Pollution Prevention Program

The San Mateo Countywide Water Pollution Prevention Program (SMCWPPP) was established in 1990 to reduce the pollution carried by stormwater into local creeks, the San Francisco Bay, and the Pacific Ocean. The program is a partnership of the City/County Association of Governments (C/CAG), each incorporated city and town in the county, and the County of San Mateo, which share a common National Pollutant Discharge Elimination System (NPDES) permit. The Federal Clean Water Act and the California Porter-Cologne Water Quality Control Act require that large urban areas discharging stormwater into the San Francisco Bay or the Pacific Ocean have an NPDES permit to prevent harmful pollutants from being dumped or washed by stormwater runoff, into the stormwater system, then discharged into local waterbodies. San Mateo, Santa Clara, Alameda, Marin, Sonoma, Solano, San Francisco, Fairfield/Suisun, Vallejo and Contra Costa Counties have each obtained these permits. Certain types of businesses must also apply for individual coverage, by filing a Notice of Intent (NOI) with the State Water Resources Control Board.

As part of the SMCWPPP program, permitted facilities are required to establish and implement a Stormwater Management Plan (SWMP) which details how potential pollutant sources are being managed to prevent any commingling with stormwater. The Stormwater Management Plan outlines the priorities, key elements, strategies, and evaluation methods for the San Mateo Countywide Water Pollution Prevention Program. The comprehensive Program includes pollution reduction activities for construction sites, industrial sites, illegal discharges and illicit connections, new development, and municipal operations. The program also includes a public education effort, target pollutant reduction strategy, and monitoring program.

Menlo Park General Plan

The City of Menlo Park has established goals, policies and programs in regards to hydrology and water quality issues within the *Menlo Park General Plan*. The following policies pertaining to hydrology and water quality would pertain to the Specific Plan:

- **Land Use Element**

  Policy I-H-3: Plant material selection and landscape and irrigation design for City parks and other public facilities and in private developments shall adhere to the City's Water Efficient Landscaping Policy.

  Policy I-H-7: The use of reclaimed water for landscaping and other feasible uses shall be encouraged.

  Policy I-H-9: Urban development in areas with geological and earthquake hazards, flood hazards, and fire hazards shall be regulated in an attempt to prevent loss of life, injury, and property damage.

  Policy I-H-10: The City shall continue to participate in the National Flood Insurance Program. To this end, the City shall work to keep its regulations is full compliance with standards established by the Federal Emergency Management Agency.

Menlo Park Grading, Drainage, and Hydrology Requirements

The Menlo Park Engineering Division requires a grading and drainage (G&D) permit whenever more than 500 square feet of the surface of a lot is to be affected by a building project.[14] The basis for the grading and drainage plan requirement is City of Menlo Park development policy, Stormwater Ordinance 859 (Chapter 7.42 of the City of Menlo Park Municipal Code), and the California Regional Water Quality Control Board Municipal Regional Stormwater Permit issued on October 14, 2009.[15] The goal of the Permit is for development projects to include stormwater source control, site design, and treatment measures to reduce the amount of stormwater runoff and prevent the entry of sediment and pollutants into the City's storm drain system, creeks, and the Bay.

In regard to erosion and sedimentation during construction, existing standards and requirements include all developments. For projects that would disturb one acre or more, a Stormwater Pollution Prevention Plan must be prepared and implemented in accordance with the State Water Resources Control Board's General Construction Permit. For these projects and all other projects disturbing more than 500 square feet, the City's G&D requirements specify that a construction plan must be prepared to demonstrate that sediment-laden water shall not leave the site, such as by completing grading activities during dry months, providing temporary sediment basins and traps, and/or utilizing temporary silt fences or straw rolls. Compliance with G&D plans during construction is assured through the building permit inspection process.

14 City of Menlo Park, Grading and Drainage Guidelines - http://www.menlopark.org/departments/pwk/grade_guide.pdf
15 Order R2-2009-0074, NPDES Permit No. CAS 612008. pp 16-42.

In regard to ongoing increases in stormwater runoff, the City's G&D requirements specify that site drainage shall be designed to emphasize on-site filtration and the flow of stormwater through vegetated/grass swales or other landscaping prior to entering an inlet/filter basin. Site drainage is required to include on-site retention systems (or on-site detention systems if retention is not applicable), designed so that the post-project runoff rate will not exceed pre-project levels. In addition to the G&D plans, full compliance with these requirements is documented through the City's Hydrology Report requirements. (There are unique guidelines for projects disturbing more than 10,000 square feet and those disturbing less than 10,000 square feet, but they share the same requirements for on-site filtration and no net increase in peak runoff rate.)

The City's Grading and Drainage Guidelines also require that trash enclosures and dumpster areas for commercial and industrial sites shall be covered with a roof structure and protected from roof and surface drainage.

4.8.3 Impacts and Mitigation Measures

Significance Criteria

Implementation of the Plan would be considered to have a significant impact on hydrology and water quality if it would:

- Violate any water quality standards or waste discharge requirements;
- Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted);
- Substantially alter the existing drainage pattern of a site or area through the alteration of the course of a stream or river, or by other means, in a manner that would result in substantial erosion or siltation on- or off-site;
- Substantially alter the existing drainage pattern of a site or area through the alteration of the course of a stream or river or, by other means, substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site;
- Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff;
- Otherwise substantially degrade water quality;
- Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other authoritative flood hazard delineation map;
- Place within a 100-year flood hazard area structures that would impede or redirect flood flows;
- 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; and/or

- Expose people or structures to a significant risk of loss, injury or death involving inundation by seiche,[16] tsunami, or mudflow.

Based on the proposed Specific Plan and its physical setting, the Plan would not result in impacts related to the following criterion. No impact discussion is provided for this topic for the reasons listed below.

- *Seiche, Tsunami and Mudflows*. The project area is not located near an enclosed body of water capable of producing seiche waves and is too far inland to be at risk for tsunami hazards. The relatively flat topography of the project area is also not in an area susceptible to mudflows. Therefore, there is no impact related to seiche, tsunami, or mudflow.

Specific Plan Guidelines D.2.47, D.4.09, D.5.20, D.6.03, D.6.04, E.3.8.12 and E.3.8.13 (see Table 3-2, *Menlo Park El Camino Real and Downtown Specific Plan Standards, Guidelines and Policies*) recommend the use of permeable materials for sidewalks and other paved surfaces and use of bioswales and green roofs where possible which would help to mitigate hydrology impacts in the Plan area.

Impacts

Impact HYD-1: Construction associated with the proposed Specific Plan projects could adversely affect water quality and drainage patterns in the short term due to erosion and sedimentation. (Less than Significant)

Construction activities undertaken to implement transportation improvements and subsequent development projects in the Specific Plan could include excavation, soil stockpiling, boring, and/or grading activities that create bare slopes as existing vegetation is stripped prior to the installation of impervious surfaces. Soil erosion is probable during construction and resulting water quality problems could include turbidity, increased algal growth, oxygen depletion, or sediment buildup thereby degrading aquatic habitats. Sediment from project-induced erosion could also accumulate in downstream drainage facilities and interfere with stream flow, thereby aggravating downstream flooding conditions.

Depending on the project location, impacts from construction could affect local storm drain catch basins, culverts, flood control channels, streams, and San Francisco Bay. Most runoff in urban areas is eventually directed to either a storm drain or water body, unless allowed to stand in a detention area and filter into the ground. For this reason, even projects not directly adjacent to or crossing a sensitive area could have an impact. However, all projects that would disturb one acre or more are required to prepare and implement a Storm Water Pollution Prevention Plan (SWPPP), in accordance with the State Water Resources Control Board's General Construction Permit. The SWPPP would include erosion control measures such as those listed below:

[16] A seiche is a free or standing wave oscillation(s) of the surface of water in an enclosed or semi-enclosed basin, such as San Pablo Bay, that may be initiated by an earthquake.

- Limiting excavation and grading activities during the dry season only (April 15 to October 15), to the extent possible. This would reduce the chance of severe erosion from intense rainfall and surface runoff, as well as the potential for soil saturation in swale areas.

- If excavation does occur during the rainy season, storm runoff from the construction area can be regulated through a stormwater management/erosion control plan that may include temporary on-site silt traps and/or basins with multiple discharge points to natural drainages and energy dissipaters. Stockpiles of loose material are generally covered and runoff diverted away from exposed soil material. Sediment basin/traps would be located and operated to minimize the amount of offsite sediment transport. Any trapped sediment would be removed from the basin or trap and placed at a suitable location on-site, away from concentrated flows, or removed to an approved disposal site.

- Temporary erosion control measures would be provided until perennial revegetation or landscaping is established and can minimize discharge of sediment into nearby waterways. For construction within approximately 500 feet of a water body, fiber rolls and/or gravel bags would be placed upstream adjacent to the water body.

- After completion of grading, erosion protection would be provided on all cut-and-fill slopes. Revegetation would be facilitated by mulching, hydroseeding, or other methods and initiated as soon as possible after completion of grading and prior to the onset of the rainy season (by October 15).

- Permanent revegetation/landscaping shall emphasize drought-tolerant perennial ground coverings, shrubs, and trees to improve the probability of slope and soil stabilization without adverse impacts to slope stability due to irrigation infiltration and long-term root development.

- Best Management Practices (BMPs) selected and implemented for the project shall be in place and operational prior to the onset of major earthwork on the site. The construction phase facilities shall be maintained regularly and cleared of accumulated sediment as necessary.

- Hazardous materials such as fuels and solvents used on the construction sites shall be stored in covered containers and protected from rainfall, runoff, and vandalism. A stockpile of spill cleanup materials shall be readily available at all construction sites. Employees shall be trained in spill prevention and cleanup, and individuals should be designated as responsible for prevention and cleanup activities.

SWPPP(s) for projects immediately adjacent to or within drainages would also incorporate the following additional erosion control minimum criteria:

- Construction equipment would not be operated in flowing water, except as may be necessary to construct crossings or barriers.

- Stream diversion structures would be designed to preclude accumulation of sediment. If this is not feasible, an operation plan should be developed to prevent adverse downstream effects from sediment discharges.

- Where working areas are adjacent to or encroach on live streams, barriers would be constructed that are adequate to prevent the discharge of turbid water in excess of specified limits. The discharged water would not exceed 110 percent of the ambient stream turbidity

of the receiving water, if the receiving water is a flowing stream with turbidity greater than 50 nephelometric turbidity unit (NTU), or 5 NTU above ambient turbidity for ambient turbidities that are less than or equal to 40 NTU. If the water is discharged to a dry streambed, the discharged water shall not exceed 50 NTU.

- Material from construction work shall not be deposited where it could be eroded and carried to the stream by surface runoff or high stream flows.

- Riparian vegetation shall be removed only when absolutely necessary.

In addition, as described previously, the City of Menlo Park Engineering Division requires a Grading and Drainage Permit and preparation of a construction plan for any construction project disturbing 500 square feet or more. The Grading and Drainage (G&D) Permit requirements specify that the construction plan must demonstrate that sediment-laden water shall not leave the site. Applicants may comply with these requirements by such means as completing grading activities during dry months, providing temporary sediment basins and traps, and/or utilizing temporary silt fences or straw rolls. Compliance with G&D plans during construction is assured through the building permit inspection process. Incorporation of these requirements would be expected to reduce the impact of erosion and sedimentation on water resources to a less-than-significant level.

Mitigation: None required.

Impact HYD-2: Implementation of the Specific Plan could adversely affect water resources in the long term by reducing permeable surfaces, which could degrade water quality in receiving waters, increase runoff volume and associated downstream flood potential, decrease groundwater recharge, or alter drainage patterns. (Less than Significant)

Subsequent development projects in the Plan area could result in the expansion or reconfiguration of existing development which might increase the overall amount of impervious surface areas. The plan area is currently largely developed; however, redevelopment could result in a net increase of impervious surfaces. Increasing the total area of impervious surfaces can result in a number of potential impacts associated with increased volume of runoff and a greater potential to introduce pollutants to receiving waters. Urban runoff can carry a variety of pollutants, such as oil and grease, metals, sediment, and pesticide residues from roadways, parking lots, rooftops, landscaped areas, and other surfaces, and deposit them in adjacent waterways. Pollutant concentrations in urban runoff are extremely variable and are dependent on storm intensity, land use, elapsed time between storms, and the volume of runoff generated in a given area that reaches receiving waters. The most critical time for urban runoff effects is in autumn under low flow conditions. Pollutant concentrations are typically highest during the first major rainfall event after the dry season, known as the “first flush.”

Water quality in stormwater runoff is regulated locally by the San Mateo Countywide Water Pollution Prevention Program (SMCWPPP), the municipal storm water requirements set by the Regional Water Quality Control Board which includes the C.3 provisions. Adherence to these

updated requirements causes new development and redevelopment projects to incorporate treatment measures and other appropriate source control and site design features that reduce pollutants in runoff to the maximum extent practical. Many of these requirements result in the construction of Low Impact Development techniques such as use of onsite infiltration through landscaping or vegetated swales that reduce pollutant loading in offsite discharges. Incorporation of these types of source control design measures can even potentially improve upon existing conditions.

As stated above, the Plan area is already largely developed and widely covered by impervious surfaces. The underlying shallow aquifer is not currently used for groundwater supply; however, it is considered by the Regional Water Quality Control Board as a potential source for groundwater. A net increase in impervious surfaces might affect the amount of precipitation that is recharged to the shallow aquifer. However, drainage control design features required by SMCWPPP and the City of Menlo Park require that all stormwater from disturbed sites be treated and that project runoff not exceed pre-project levels. Therefore, the likely result of implementation of the Plan would be a less than significant impact to groundwater supplies.

As noted previously, the City's Grading and Drainage (G&D) permit requirements for any project disturbing more than 500 square feet specify that site drainage shall be designed to emphasize on-site filtration and the flow of stormwater through vegetated/grass swales or other landscaping prior to entering an inlet/filter basin. Site drainage is required to include on-site retention systems (or on-site detention systems if retention is not applicable), designed so that the post-project runoff rate will not exceed pre-project levels. In addition to the G&D plans, full compliance with these requirements is documented through the City's Hydrology Report requirements. There are unique guidelines for projects disturbing more than 10,000 square feet and those disturbing less than 10,000 square feet, but they share the same requirements for on-site filtration and no net increase in peak runoff rate

The City's Grading and Drainage Guidelines also require that trash enclosures and dumpster areas for commercial and industrial sites shall be covered with a roof structure and protected from roof and surface drainage.

Thus, as properties redevelop, older sites with untreated, unretained runoff and exposed outdoor refuse containers will be replaced by projects with stormwater detention or retention systems, on-site measures to filter and treat stormwater, and integrated garbage rooms or covered enclosures. Runoff will not be increased, the quality of stormwater will be improved, and the amount of trash entering the storm drain system will be reduced.

The Plan further recommends that new buildings incorporate green roofs (Specific Plan Guideline E.3.8.12) that harvest rain water that can then be recycled for plant irrigation or for some domestic uses, and that also can reduce peak stormwater volumes and/or flow rates to relieve both existing and future system capacity limitations. The Specific Plan also recommends the use of porous paving material on driveways and parking areas (Specific Plan Guidelines D.2.47, D.4.09, D.5.20, D.6.03, D.6.04 and E.3.8.13) to minimize stormwater runoff from paved surfaces, as well as stormwater management techniques such as the use of bioswales on surface parking lots. Existing pervious surfaces are typically preserved to the maximum extent possible to

minimize increases in stormwater runoff volumes and rates. In addition, public space improvements such as sidewalk widening will provide opportunities for public trash/recycling containers where there currently are none, further reducing the potential for trash being carried in stormwater. These measures may further reduce runoff. The current regulatory framework that governs the drainage control of stormwater in new development and redevelopment is designed to meet regional water quality objectives. The C.3 provisions ensure that new development and redevelopment projects that create or replace 10,000 square feet of impervious surface incorporate treatment system designs,[17] and the City's Grading and Drainage permit requirements extend similar requirements to all projects disturbing 500 square feet or more. Adherence to these stringent requirements would result in a less than significant impact related to water quality in stormwater runoff, runoff volume and associated flooding potential, groundwater recharge, and generally altering drainage patterns.

Mitigation: None required.

Impact HYD-3: Implementation of the Specific Plan would not place housing or other structures that would impede or redirect floodflows within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other authoritative flood hazard delineation map. (Less than Significant)

As shown in Figure 4.8-1, only a small portion of the Plan area is located within a FEMA-designated flood zone, and this area is contained entirely within the channel of San Francisquito Creek. This area is designated Zone A, which is a special flood hazard area without water surface elevations determined. While FEMA regulations do not outright prohibit development within Zone A, development requires detailed site-specific calculations, and the associated standards would be difficult if not impossible to meet in an active and relatively narrow creek channel. The creek channel is also within the jurisdiction of the San Francisquito Creek Joint Powers Authority (JPA), a multi-jurisdictional agency comprised of the cities of Palo Alto, Menlo Park and East Palo Alto, the Santa Clara Valley Water District, and San Mateo County Flood Control District. The JPA would also likely not allow construction within the creekbed due to the high potential for conflicts with regard to water flow and biological resources.

In addition to the regulatory barriers to construction within the creek channel, only one privately-owned parcel, 100 El Camino Real, extends into the creekbed itself. This particular site is occupied by a hotel that appears to be an income-generating property in good condition and as such currently represents an unlikely redevelopment location. The parcels on the opposite side of El Camino Real (addressed 15 through 99 El Camino Real) are separated from the creek by a public street (Creek Drive) and are likewise occupied by buildings that do not appear to be immediate development sites.

[17] Note that this threshold will drop to 5,000 square feet for auto service, gas stations, restaurants and parking lots as of December 1, 2011. By December 1, 2012, projects between 2,500 and 10,000 square feet will be required to include at least one low impact development feature.

As a result of the regulatory and practical barriers to construction within the creek, this impact would be less than significant.

Mitigation: None required.

Impact HYD-4: Implementation of the Specific Plan would not 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. (Less than Significant)

According to mapping compiled by the Association of Bay Area Governments, a portion of the Plan area, from the intersection of College Avenue and El Camino Real southwards, is located within the potential dam inundation area for the Searsville dam (ABAG, 1995). However, the dam is regulated by the Division of Safety of Dams which requires dams to meet stringent seismic criteria and receive routine maintenance and inspection. Therefore, the potential for a catastrophic release of the dam is considered a low probability resulting in a less-than-significant impact with implementation of the proposed Specific Plan.

Mitigation: None required.

Cumulative Impacts

Impact HYD-5: Concurrent implementation of the proposed Specific Plan and projected regional development could contribute to degradation of regional water quality, reduction of groundwater recharge, or result in increased flooding hazards. (Less than Significant)

Implementation of projects in the Specific Plan could result in indirect cumulative impacts on water resources by accommodating future planned urban development that would have the potential to alter drainage patterns and impact water quality. In addition, any increases in impervious surfaces could create higher erosion rates as well as reduce groundwater recharge. The Specific Plan and other future projects in the region would be required to comply with the SMCWPPP program, the Construction Regional NPDES permit, and drainage and grading ordinances intended to control runoff and regulate water quality at each development site. New projects in Menlo Park will be required to demonstrate adequate capacities of stormwater volumes that would be managed by downstream conveyance facilities and to obtain a G&D permit limiting runoff to pre-project levels. The City of Menlo Park ordinances regarding water quality and National Pollution Discharge Elimination System (NPDES) permitting requirements apply throughout the City. Therefore, the effect of the Specific Plan on water quality and hydrology, in combination with other foreseeable projects would not be significant.

Mitigation: None required.

4.9 Land Use and Planning Policy

This section evaluates the land use-related effects of the Specific Plan. Potential land use impacts that would result from implementation of the Specific Plan are identified. This section also contains a discussion of the consistency of the Specific Plan with relevant land use policies. However, policy conflicts do not constitute, in and of themselves, a significant environmental impact. Policy conflicts are considered to be environmental impacts only when they would result in direct physical impacts. All other associated physical impacts are discussed in this EIR in specific topical sections, such as the noise, air quality, and transportation sections.

4.9.1 Environmental Setting

The following section describes the existing land uses within the Plan area and summarizes relevant land use policy.

Note that the City of Menlo Park street grid is offset from exact compass directions. For the purposes of this discussion, streets that run relatively parallel to the Caltrain tracks are described as running north (toward San Francisco) and south (toward San Jose). Similarly, streets that run relatively parallel to the San Francisquito Creek are described as running east (toward the San Francisco Bay) and west (toward the Santa Cruz Mountains). The location of uses and buildings are similarly described according to these directions.

The Plan area is located in the City of Menlo Park in San Mateo County. Menlo Park is located on the San Francisco Peninsula, approximately 30 miles south of San Francisco and approximately 20 miles north of San Jose. The Plan area is located along El Camino Real from Watkins Avenue in the north to San Francisquito Creek in the south. It extends east to the Caltrain right-of-way and around the Caltrain Menlo Park Station to Alma Street, and it extends west along Oak Grove Avenue, Santa Cruz Avenue and Menlo Avenue to approximately University Drive. El Camino Real is designated as State Route (SR) 82 and is one of the primary arterial roadways and commercial corridors of the San Francisco Peninsula, extending from Mission Street in San Francisco to The Alameda in Santa Clara, near San Jose International Airport. Caltrain is the major commuter rail line serving the San Francisco Peninsula, and it connects Menlo Park with San Francisco to the north and San Jose and Gilroy to the south.

Existing Land Uses

The Plan area is characterized by a mix of land uses. Traveling north along El Camino Real from Creek Drive, uses in the southern portion of the Plan area are a mix of hotels, motels, small office buildings, small retail spaces, and automotive-related uses, such as gas stations, service shops, and dealerships. Vacant buildings, as well as surface parking lots, are also present in this area. Traveling north over Middle Avenue, larger retail spaces predominate, with uses like the recently renovated Safeway to the west and sporting goods and office supply stores to the east.

The downtown area of the Plan area is characterized by local retail, medical, commercial office, and restaurant uses, including one active movie theater. Menlo Center, which houses commercial and restaurant spaces and a plaza, is on the east side of El Camino Real, just south of Santa Cruz Avenue. Santa Cruz Avenue, downtown's primary commercial corridor, is an east-west route containing a variety of retail and personal services spaces, offices, banks, and restaurants. Parking lots occupy the centers of the blocks between Santa Cruz Avenue and Menlo Avenue to the south and Oak Grove Avenue to the north. Menlo Avenue and Oak Grove Avenue house additional offices and retail and personal services spaces, as well as some residential uses. In addition, the larger retail spaces of the Draegers and Trader Joe's grocery stores are on Menlo Avenue. Primary access to the Caltrain station is along Merrill Street, on the east side of El Camino Real.

North of Oak Grove Avenue, uses on El Camino Real are primarily retail service uses, including home repair and automotive-related uses, with other retail and restaurant uses interspersed among them. The southern half of the block between El Camino Real, Oak Grove Avenue, the Caltrain right-of-way, and Glenwood/Valparaiso Avenues contains primarily vacant office and service buildings, as well as surface parking lots. The northern portion of the block contains commercial office buildings.

North of Glenwood Avenue, the east side of El Camino Real is developed with automotive-related uses, appliance repair shops, a liquor store, and restaurants. Properties on the west side of El Camino Real are outside of the Plan area, though they contain single-family homes oriented toward Victoria Drive, and Menlo College. As with the block immediately to the south, the block bounded by El Camino Real, Glenwood Avenue, San Antonio Avenue, and Encinal Avenue contains some vacant buildings and a large amount of surface parking. North of Encinal Avenue, a mix of residential apartment and office uses comprise the remainder of the Plan area.

Surrounding the Plan area, land uses are primarily single-and multi-family housing. In addition, the Menlo Park Civic Center, housing the local government buildings and Burgess Park, is located directly southeast of Downtown, across the Caltrain right-of-way. In addition, Fremont Park, Nealon Park, and Holbrook Palmer Park are all within two blocks of the Plan area. Menlo College is adjacent to the northern portion of the Plan area, within the Town of Atherton. Across San Francisquito Creek is the Stanford Shopping Center and additional residential and recreational uses, which are within the City of Palo Alto (Santa Clara County).

4.9.2 Regulatory Setting

This section discusses land use policies applicable to the Plan area. Applicable plans and polices related to housing, transportation and circulation, noise, and other environmental categories are discussed in other relevant sections of this EIR.

Menlo Park General Plan

Land Use Designations

The City of Menlo Park General Plan (General Plan) guides development and use of land in the City. The central purpose of the General Plan, as stated in the document, "is to maintain Menlo Park's special character as a residential community that includes a broad range of residential, business, and employment opportunities and to provide for the change necessary to maintain a vital community." The General Plan land use designations currently applicable to the Plan area are described below. The land use and development standards are implemented through the Zoning Ordinance.[1,2,3,4]

Retail/Commercial

The downtown area falls within the Retail/Commercial land use designation. This designation provides for retail services, personal services, professional offices, banks, savings and loans, restaurants, cafes, theaters, social and fraternal clubs, residential uses, public and quasi-public uses, and similar and compatible uses. The maximum Floor Area Ratio (FAR)[5] for non-residential uses ranges from 0.40 to 2.00 and residential density is limited to 18.5 units per acre.

El Camino Real Professional/Retail Commercial

Most of the properties along El Camino Real within the Plan area fall within the El Camino Real Professional/Retail Commercial land use designation[6]. This designation provides for retail services, personal services, professional offices, executive, general and administrative offices, research and development facilities, banks, savings and loans, convalescent homes, restaurants, cafes, theaters, residential uses, public and quasi-public uses, and similar and compatible uses. The maximum FAR for non-residential uses ranges from 0.40 to 0.75 percent (with vehicle storage associated with an automobile dealership permitted at an additional 0.25 FAR for a total of 1.00) and residential density is limited 18.5 units per acre.

1 City of Menlo Park, *General Plan Policy Document – 1994 Amendments to the Land Use and Circulation Elements.* Adopted November 30 and December 1, 1994.

2 City of Menlo Park, 2008. Zoning Map and Land Use Diagram Sheet 3, available online: http://www.menlopark.org/departments/pln/zmap/zmap3.pdf, accessed July 22, 2009, published 2008.

3 City of Menlo Park, 2007. Zoning Map and General Plan Land Use Diagram Sheet Layout and Legend, available online: http://www.menlopark.org/departments/pln/zmap/zmapi.pdf, accessed July 22, 2009, published 1999, updated March 2007.

4 City of Menlo Park, Zoning District and General Plan Land Use Designation Correspondence Table. available online: http://service.govdelivery.com/docs/CAMENLO/CAMENLO_176/CAMENLO_176_20060710_en.pdf, accessed July 22, 2009 (2009b).

5 Floor-area ratio is the ratio of total applicable floor area within a building to the size of the lot. That is, a two-story building that fully covers its lot would have a floor area ratio of 2.00.

6 Although 1600 El Camino Real falls within the Administrative and Professional (C-1-A) District of the Zoning Ordinance, the property's designated land use is the El Camino Real Professional/Retail Commercial in the General Plan (City of Menlo Park, 2009).

Professional and Administrative Offices

Some properties within the Plan area are designated Professional and Administrative Offices. This designation provides for professional offices, executive, general and administrative offices, research and development facilities, banks, savings and loans, convalescent homes, residential uses, public and quasi-public uses, and similar and compatible uses. The maximum FAR for non-residential uses ranges from 0.25 to 0.40 percent and residential intensity is limited to 18.5 units per acre.

Medium Density Residential

Some properties within the Plan area are designated for Medium Density Residential use. This designation provides for single family detached and attached homes, duplexes, multi-family units, garden apartments, condominiums, public and quasi-public uses, and similar and compatible uses. Residential senior rental shall be in the range of 5.1 to 18.5 units per net acre.

General Plan Land Use Designations in the Vicinity of the Project Site

Surrounding the Plan area, properties are designated for Medium- and Low-Density Residential land use, as well as for Professional and Administrative Office land use. Properties in the Civic Center are designated for Public Facility land use. **Figure 4.9-1** shows existing zoning district designations. **Table 4.9-1** shows corresponding General Plan land use designations.

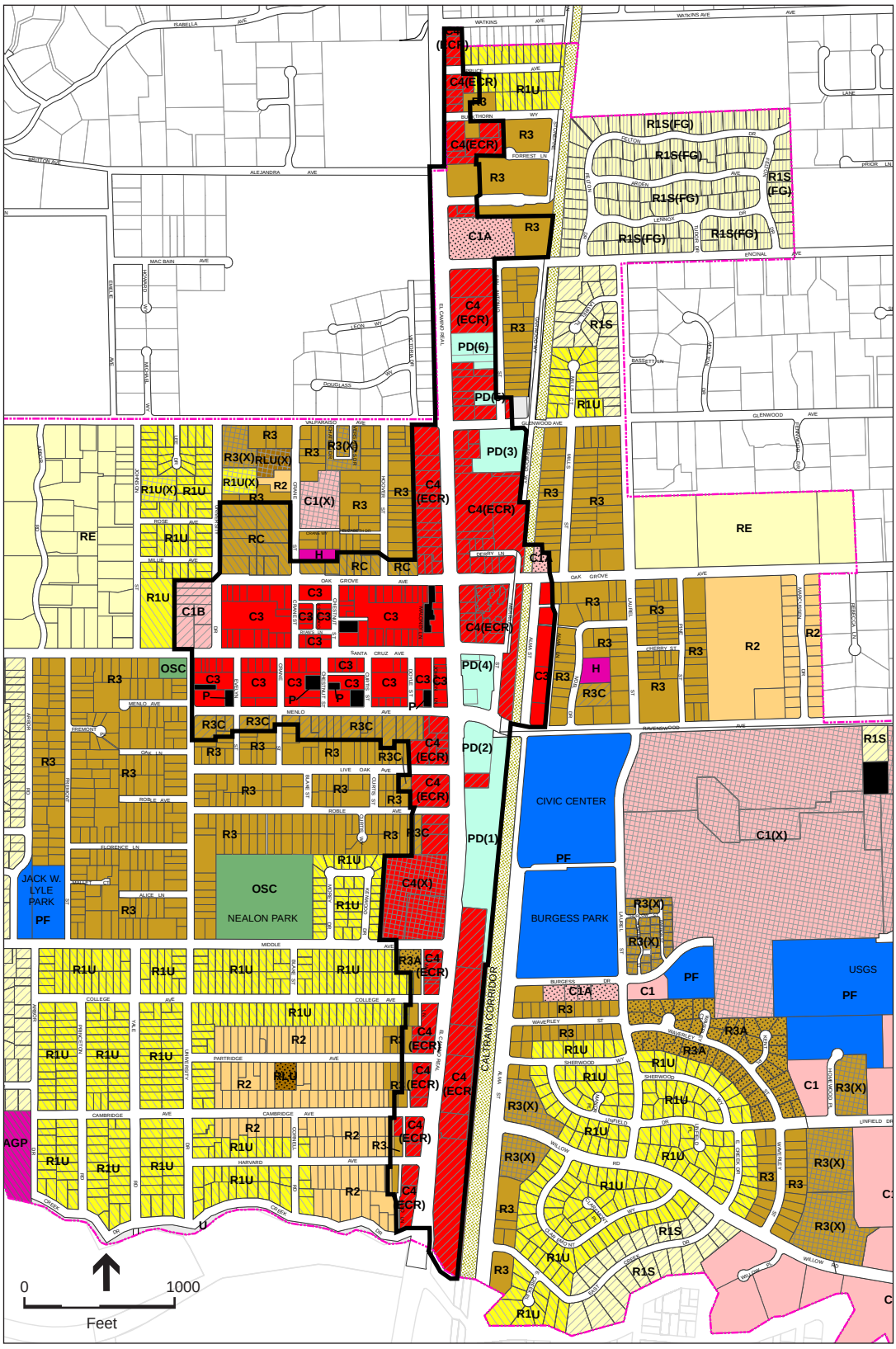
General Plan Policies

The General Plan also includes goals and policies related to land use, circulation, housing, open space and conservation, noise, and seismic safety and safety. These topics are addressed within the specific elements of the General Plan. Several goals and policies of the General Plan apply broadly to land use and development across the City. The policies specifically relevant to the land use and the Specific Plan are discussed under **Impact LU-3**, below. Applicable policies of other elements are discussed in the relevant sections of this EIR (City of Menlo Park, 1994).

Menlo Park Zoning Ordinance

The City of Menlo Park Zoning Ordinance enforces the land uses designated in the General Plan. Chapter 16 of the City of Menlo Park Municipal Code sets forth the City's Zoning Ordinance, the stated purpose of which is "to preserve and extend the charm and beauty inherent to the residential character of the city; to regulate and limit the density of population; encourage the most appropriate use of land; to conserve land and stabilize the value of property; to provide adequate open space for light, air and fire protection; to lessen traffic congestion; to facilitate the provision of community facilities; to encourage tree and shrub planting; to encourage building construction of pleasing design; to provide the economic and social advantages of a planned community." Figure 4.9-1 shows existing Zoning Ordinance designations within and surrounding the Plan area.[7] The existing zoning districts found within the Plan area are briefly summarized below.

[7] City of Menlo Park, Municipal Code, Chapter 16: Zoning, available online: http://www.menlopark.org/departments/pln/zoneordn.pdf, effective May 2009.



SOURCE: City of Menlo Park, 2009

Menlo Park El Camino Real/Downtown Specific Plan EIR . 208581

Figure 4.9-1
Existing General Plan Land Use Designations and Zoning Districts

TABLE 4.9-1
CITY OF MENLO PARK ZONING DISTRICT AND
GENERAL PLAN LAND USE DESIGNATION CORRESPONDENCE TABLE (SEE FIGURE 4.9-1)

Zoning District		General Plan Land Use Designation
R-E	Residential Estate District	Very Low Density Residential
R-E-S	Residential Estate Suburban District	Very Low Density Residential
R-1-S	Single Family Suburban Residential District	Low Density Residential[a,b]
R-1-S (FG)	Single Family Suburban Residential District (Felton Gables)	Low Density Residential[a]
R-1-U	Single Family Urban Residential District	Low Density Residential
R-2	Low Density Apartment District	Medium Density Residential
R-3	Apartment District	Medium Density Residential
R-3-A	Garden Apartment Residential District	Medium Density Residential
R-3-C	Apartment-Office District	Professional and Administrative Offices[c]
R-4	High-Density Residential District	High Density Residential
R-C	Mixed Use District	Professional and Administrative Offices[c]
R-L-U	Retirement Living Units District	High Density Residential
C-1	Administrative and Professional District, Restrictive	Professional and Administrative Offices
C-1-A	Administrative and Professional District	Professional and Administrative Offices[d]
C-1-B	Administrative, Professional, and Service District	Professional and Administrative Offices
C-1-C	Administrative, Professional and Research District, Restrictive	Professional and Administrative Offices
C-2	Neighborhood Shopping District	Retail/Commercial
C-2-A	Neighborhood Shopping District, Restrictive	Retail/Commercial
C-2-B	Neighborhood Commercial District, Restrictive	Retail/Commercial
C-2-S	Neighborhood Commercial District, Special	Retail/Commercial
C-3	Central Commercial District	Retail/Commercial
C-4	General Commercial District (other than El Camino Real)	Retail/Commercial
C-4 (ECR)	General Commercial District (applicable to El Camino Real)	El Camino Real Professional/Retail Commercial
M-1	Light Industrial District	Limited Industry
M-2	General Industrial District	Limited Industry
OSC	Open Space and Conservation District	Parks and Recreation
P-F	Public Facilities District	Public Facilities
FP	Flood Plain District	Non-Urban[e]
P	Parking District	Retail/Commercial
H	Historic Site District	Medium Density Residential[f]
AAGP	Allied Arts Guild Preservation District	Other
P-D	P-D District	El Camino Real Professional/Retail Commercial
X	Conditional Development	n/a[7]

[a] The General Plan refers to R-1-S as potentially part of either the Very Low Density Residential or Low Density Residential land use designations. However, when developments are built to R-1-S standards, only the Low Density Residential land use designation applies.
[b] The Stanford Golf Course area between Junipero Serra and Sand Hill Road is part of the Parks and Recreation land use designation.
[c] The R-3-C and R-C zoning districts may have residential uses, but at densities covered by the Professional and Administrative Offices land use designation.
[d] 1600 El Camino Real is part of the El Camino Real Professional/Retail Commercial land use designation.
[f] Bayfront Park is part of the Parks and Recreation land use designation.
[6] The two parcels currently zoned H are 1040 Noel Drive and 1220 Crane Street.
[7] Conditional Development districts inherit the land use designation of their base zoning district.

SOURCE: City of Menlo Park, 2008.

Central Commercial District (C-3)

Within the Plan area, the properties bounded by University Drive, Menlo Avenue, El Camino Real, and Oak Grove Avenue and properties along Alma Street between Ravenswood and Oak Grove Avenues are primarily within the General Commercial (C-3) district. In this district, the floor-area ratio (FAR) of buildings may not exceed 1.00, although a FAR of up to 2.00 may be authorized by a use permit when required parking for the FAR above 1.00 is provided on site or nearby. Office uses are limited to an FAR of 0.50. The maximum residential density is 18.5 units per acre and maximum residential FAR is 1.00. The maximum height of buildings is 30 feet. There is no minimum lot area, lot dimension, land coverage, setback requirements, or landscaping requirements in the district. Other properties in this area are within Parking (P) district, where the only permitted use is landscaped, off-street parking subject to approval of the City Engineer prior to development.

General Commercial District (Applicable to El Camino Real) (C-4 ECR)

The majority of the properties fronting El Camino Real within the Plan area are within the General Commercial district specific to properties on the thoroughfare (C-4 ECR). Lot areas must be at least 10,000 square feet, but there are no minimum setbacks or land coverage requirements. A minimum of five (5) to 10 percent of land must be landscaped, depending on the size of the property. Maximum heights are 30 feet, and the FAR may not exceed 0.55, except by use permit (0.75 for general uses and 1.00 for automobile storage in conjunction with an automobile dealership). Office uses are limited to an FAR of 0.40. Residential densities are limited to 18.5 units per acre.

Planned Development Districts (P-D)

The purpose of P-D districts is to encourage the consolidation of smaller parcels into larger parcels to provide benefits to the city which could not otherwise be obtained. In order to obtain these benefits, projects are encouraged to include specific development controls resulting in more usable open space, efficient use of land, utilities and circulation, develop creative and integrated design and allow for innovative and desirable mixed use developments. Within P-D districts, development standards may be altered with the exception of FAR and density requirements, which must be consistent with the pre-existing zoning district prior to rezoning to a P-D designation. Several properties between El Camino Real and the Caltrain right-of-way are within P-D districts. Permits approving development plans are subject to approval by the City Council. Property owners are required to submit detailed plans of proposed projects, including preliminary building plans detailing height, bulk, setbacks, and landscaping, as well as development schedules.

General Commercial District, Conditional (Applicable to El Camino Real) [C-4 ECR(X)]

The purpose of the Conditional (X) district is to allow for adjustment of the requirements of an established zoning district in order to secure special benefits possible through comprehensive planning of larger developments. The adjustments are intended to allow relief from the monotony of standard development regulations and permit new and desired techniques to encourage more

usable open space. The Conditional district is a "combining district" in that it combines with an underlying established district and uses that district's regulations as a base. The Conditional district designation allows modification of the development standards with the exception of FAR and density. Although similar in function to the P-D district described above, it may be applied citywide (subject to certain minimum size limits) whereas the P-D district is only applicable in the area between El Camino Real and the railroad tracks. Application of the X designation requires rezoning of the property and approval of a Conditional Development Permit (CDP) by the City Council. The Safeway property is within the General Commercial (Applicable to El Camino Real) district, Conditional [C-4 ECR(X)]. This development generally adheres to C-4 ECR standards, with the exception of unique regulations for parking and signage, which are governed by the property's CDP.

Administrative and Professional District (C-1-A)

The property at the northwest corner of El Camino Real and Encinal Avenue (1600 El Camino Real) and the property at 530 Oak Grove Avenue are within an Administrative and Professional (C-1-A) district. In C-1-A districts, lot areas must be 10,000 square feet, and setbacks must be 15 feet in the front, 10 feet in the rear, a minimum of five (5) feet on interior sides, and 10 feet on corner sides. Maximum lot coverage is 40 percent, and the maximum FAR is 0.40. The maximum height of buildings is 35 feet.

Administrative, Professional, and Service District (C-1-B)

Several properties at the northwest corner of Santa Cruz Avenue and University Drive lie within an Administrative, Professional, and Service (C-1-B) district. Lot areas must be 10,000 square feet in C-1-B districts; front setbacks must be 15 feet, rear setbacks 10 feet, interior side setbacks must be a minimum of five (5) feet, and corner side setbacks a minimum of 10 feet. Buildings cannot exceed 35 feet in height, lot coverage is limited to 40 percent, and the maximum FAR in these districts is 0.40.

Apartment District (R-3)

A few of the properties in the northern and southern portions of the project area are within an Apartment (R-3) district. Lot areas must be at least 7,000 square feet in R-3 districts. Setbacks must be a minimum of 20 feet in the front, a minimum of 15 feet in the rear, 10 feet for the interior side and 15 feet for the corner side. Total land coverage cannot exceed 30 percent, a minimum of 50 percent of the lot area is required to be landscaped, and the height of buildings cannot exceed 35 feet. Maximum FAR in the district is 0.45, and the permitted density of residential units is dependent on the total lot area but varies between 12.4 and 18.5 units per acre.

Apartment-Office District (R-3-C)

Properties on the south side of Menlo Avenue are within an Apartment-Office (R-3-C) district. Residential uses are subject to R-3 district development regulations, discussed above. Commercial office uses are subject to C-1-A development regulations, discussed above, and approval of a use permit. Residential and commercial uses are not permitted on the same property.

Mixed-Use District (R-C)

Finally, properties on the north side of Oak Grove Avenue are within a Mixed-Use (R-C) district. The purpose of the R-C district is to provide for mixed office and residential developments that integrate the functional and physical elements of the development. Residential portions of projects are required to utilize the R-3 district controls (see above), except that residential density is established at 18.5 units per acre as opposed to the range of densities in the R-3 district. Commercial uses are governed by C-1-A district controls (see above). FAR is limited to 0.45 for residential uses, 0.40 for commercial uses, and 0.85 in total for mixed residential and commercial developments.

Zoning Districts in the Vicinity of the Project Site

Surrounding the Plan area, properties are primarily within Low and Medium Density Apartment Districts (R-2, R-3), the Apartment-Office District (R-3-C), and Single-Family Urban and Suburban Residential Districts (R-1-U, R-1-S). Properties in the Civic Center area are within the Public Facilities (P-F) district.

4.9.3 Impacts and Mitigation Measures

Significance Criteria

Implementation of the Specific Plan would have a significant impact on land use if it would:

- Physically divide an established community;
- Alter the type or intensity of land use on a project site, in a manner that causes it to be substantially incompatible with surrounding land uses or the overall character of surrounding neighborhoods;
- Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the General Plan, Specific Plan, Local Coastal Program, or Zoning Ordinance) adopted for the purpose of avoiding or mitigating an environmental effect; and/or
- Conflict with any applicable habitat conservation plan or natural community conservation plan.

As stated in Section 4.3, *Biological Resources*, the Specific Plan area does not lie within the planning area for any adopted or proposed habitat conservation or natural community plans. Therefore, there would be no impact related to this criterion, and this issue is not discussed further.

Impacts

Impact LU-1: Implementation of the Menlo Park El Camino Real/Downtown Specific Plan would not physically divide an established community. (Less than Significant)

The Specific Plan area has an existing street grid that establishes the framework of the Plan area and along which exists a variety of building styles, sizes and heights. The Specific Plan would not alter the existing street grid, therefore would not create a new physical barrier that would divide the community. However, the Specific Plan would allow for taller buildings than exist. The majority of the Plan area is comprised of one- and two-story height buildings, with one-story buildings commonly having heights of approximately 14 feet and two-story buildings commonly having heights of approximately 29 feet. Primarily along El Camino Real, taller buildings of three-and four-stories can also be found. Examples include Menlo Center at 46 feet in height, Menlo Square at approximately 45 feet inclusive of roof screening and 50 feet including the elevator tower, two buildings near the southeast corner of El Camino Real and Ravenswood Avenue at 47 and 56 feet in height and the Stanford Park hotel at 45 feet in height. The Specific Plan would allow for taller heights of 38 feet for the downtown, north El Camino Real and southwest El Camino Real, 48 feet for the station area west of El Camino Real and along Alma Street and as a public benefit bonus option for northeast El Camino Real between Encinal and Oak Grove Avenues, and 60 feet for the central station area and southeast El Camino Real. Figure 4.1-6 depicts the proposed maximum building heights. The maximum heights are moderated in most areas by the inclusion of 45-degree building profiles above façade heights of 30 feet for 38-foot heights and 38 feet for 48- and 60-foot heights. Massing controls that restrict upper story façade lengths above 38 feet to 175 feet in length along a public right-of-way or public open space are also required in the central station area and the southeast side of El Camino Real where the tallest heights would be allowed, as well as in the northeast portion of El Camino Real between Encinal and Oak Grove Avenues where a public benefit bonus height of 48 feet may be considered. With these massing controls, the visual perception from the ground level would be reduced and façade heights would be similar to existing two- and three-story buildings. Additionally, the proposed heights would not introduce heights not already existing in the Plan area. As discussed in Section 4.1, *Aesthetic Resources,* the proposed heights would result in less than significant impacts to view corridors and no scenic views or vistas would be obscured. With new development occurring along the existing street grid pattern and proposed building heights and massing controls resulting in buildings relatively compatible with existing buildings, development proposed under the Specific Plan would not result in a physical or visual barrier, therefore would not physically divide the community.

Although the existing street grid system establishes the framework for the Plan area and provides for visual and physical connections between the downtown, station area and El Camino Real, there are existing barriers to connectivity created primarily by the railroad right-of-way and El Camino Real. The railroad right-of-way currently presents a physical barrier between the Plan area and neighborhoods to the east. The Specific Plan includes elements for the enhancement of the east-west connectivity, as expressed in the Plan's table of standards, guidelines and policies in Chapter 3, *Project Description,* Table 3-2. The Specific Plan incorporates a new Civic Plaza at the existing train station leading to a new pedestrian and bicycle grade-separated access across the railroad right-of-way (Guidelines D.3.08). The new crossing of the railroad tracks would connect to a 15-foot

wide sidewalk along Alma Street identified as the Alma Street Civic Walk, creating a stronger pedestrian connection between the railroad station and the Civic Center (Guidelines D.3.15 through D.3.22). A final connection would be formed with the Ravenswood Gateway that would include small plazas at the intersection of Ravenswood Avenue and Alma Street and a unique landmark to identify the area (Guidelines D.3.23 through D.3.28). The Specific Plan also calls for a new east-west connection in the vicinity of Burgess Park and Middle Avenue in accordance with Guidelines D.4.12 through D.4.17. Construction of these facilities would increase the opportunities for pedestrian and bicycle circulation and connectivity between El Camino Real and neighborhoods east of the railroad right-of-way.

El Camino Real is also a physical barrier to east-west connectivity because long crossing distances make traversing the street uninviting and inconvenient. The Specific Plan incorporates amenities such as countdown timers, high visibility crosswalks, and extended crossing time at key locations to improve the east-west connectivity. The Specific Plan not only improves east-west connectivity but also the quality of the north-south pedestrian experience along El Camino Real by widening sidewalks through a combination of property setbacks and narrowing of travel lanes where feasible. Specific Plan Design Guidelines D.4.01 through D.4.05 address the widening of the sidewalks, with sidewalks of 15 feet minimum on the east side of the street north of Oak Grove Avenue and south of Menlo Avenue and 12 feet minimum elsewhere.

Access and connectivity would also be improved along other project area streets. Sidewalks along Santa Cruz Avenue would be widened in the space created by replacing diagonal parking with parallel parking and would incorporate a minimum 12-foot wide pedestrian zone as well as a minimum five-foot wide furnishings zone in accordance with Specific Plan Guidelines D.2.08 through D.2.12. In addition, Guideline D.2.03 includes elements such as marked crossings, clear signage, supplementary lighting and curb extensions to enhance safe pedestrian crossings. Standard D.2.01 and guidelines D.2.04 through D.2.07, D.2.13 through D.2.15 address landscaping and furnishing design details as well as maximizing space for outdoor seating and minimizing the cluttering of sidewalks. Improvements are outlined in Guidelines D.2.53 through D.2.57 for connections between Santa Cruz Avenue and the proposed parking garages and pocket parks. The Specific Plan also includes support for bicycle improvements included in the City's Comprehensive Bicycle Development Plan, as well as recommendations for additional bicycle facilities including Class II bicycle lanes on Oak Grove Avenue and El Camino Real north of Encinal Avenue, new Future Class II/Minimum Class III bicycle facilities on El Camino Real south of Encinal Avenue, portions of University Drive, Menlo/Ravenswood Avenues and Middle Avenue, Class III bicycle routes on Crane Street, Garwood Way and Alma Street, and bicycle parking and storage facilities. More discussion of existing and planned bicycle improvements can be found in Chapter 3, *Project Description*. These improvements would enhance cyclist access through and to downtown and the station area.

The addition and improvement of public plazas would also increase connectivity. Implementation of the Specific Plan would include new plaza space at the Santa Cruz Avenue Central Plaza, providing public space on Santa Cruz Avenue between Chestnut and Crane Streets. The plaza would connect to new pathways from the proposed parking garages and pocket parks, as discussed above, and to the proposed Chestnut Street Paseo. Although the paseo would require

the closing of a portion of Chestnut Street south of Santa Cruz Avenue to vehicular traffic, the paseo would enhance pedestrian access and connectivity. Although this closure would create a physical barrier to vehicular traffic, as stated in Section 4.13, *Transportation, Circulation and Parking*, impacts related to vehicular circulation would be less than significant. The Specific Plan also includes a new Central Plaza near the train station and improvements to the Menlo Center Plaza to connect the two plazas and provide integrated vehicular, pedestrian, bicycle and transit modes of travel. Design Guidelines D.2.16 through D.2221 address the Santa Cruz Avenue Central Plaza, Standard D.2.23 and Guidelines D.2.24 through D.2.29 address the Chestnut Street Paseo, Guidelines D.2.53 through D.2.57 address the garage parking and pocket park connections, and Standards D.3.01 and D.3.02 and Guidelines D.3031 through D.3.14 address the Civic Plaza and Menlo Center Plaza.

In summary, although the Specific Plan would allow for taller buildings, any new development would occur along the existing street grid pattern and proposed building heights and massing controls would result in buildings relatively compatible with existing buildings found in the Plan area. The proposed development would not create a physical or visual barrier, therefore would not physically divide the community. Planned improvements to pedestrian and bicycle travel, including widened sidewalks, street crossings, public plaza space and bicycle facilities, would serve to enhance connections both within the Plan area and to the neighborhoods east of the Plan area. Therefore, the Specific Plan would enhance connectivity in, rather than physically divide, the community and the impact would be less than significant.

Mitigation: None required.

Impact LU-2: Implementation of the Specific Plan would alter the type and intensity of land uses in the Plan area, but not in a manner that would cause them to be substantially incompatible with surrounding land uses or neighborhood character. (Less than Significant)

The Specific Plan establishes an approach to land use that is based on the Plan's overall objective of preserving and enhancing community life, character and vitality through public space improvements, mixed use infill projects sensitive to the small town character of Menlo Park and improved connections across El Camino Real. The objective is based on community workshops that led to the formation of both the Phase 1 Vision Plan goals and the guiding principles of the Specific Plan itself. The five guiding principles are: (1) enhance public space; (2) generate vibrancy; (3) sustain Menlo Park's village character; (4) enhance connectivity; and (5) promote healthy living and sustainability.

The land uses for the Plan area are derived primarily from the City's existing uses, revised to reflect the Specific Plan's goals and guiding principles. As such, the land uses are generally compatible with existing uses in the area but would allow for more mixed use, especially mixed use that would include a residential component, as a factor in generating the vibrancy necessary to support retail business, activate public spaces, and support transit as a mode of travel. The Specific Plan also acknowledges the community's interest in limiting some types of commercial

activity to ensure a desired mix of retail uses in the downtown, limit competition to independent business and limit uses with the potential to generate large volumes of traffic. As such, the uses are either permitted, permitted with limits, conditionally permitted thereby requiring an administrative or conditional use permit, or prohibited. The Plan provides two ways in which uses may be permitted with limits. The first are limits on the sizes of specific types of uses, primarily non-retail service and office uses. For example, banks and financial institutions are limited to 5,000 square feet in size in the downtown and station areas. Offices are limited to one half of the otherwise allowed Floor Area Ratio (FAR) and medical and dental offices are limited to one-third of the otherwise allowed FAR. The second includes use of a "Main Street" overlay in the downtown and station areas that would restrict ground floor uses on Santa Cruz Avenue to primarily retail and restaurant uses. In general, the Specific Plan supports similar uses to those existing in the area and would not allow for substantially incompatible uses such as heavy industry or power plants.

The Specific Plan also establishes new FAR and residential density standards that would be higher than what exists in the Plan area. The Plan uses both base and public benefit bonus levels of FAR and residential density. The base FAR and density are those that are explicitly allowed by the Specific Plan. The difference between the base and public benefit bonus amounts represent the amount of FAR and density that could be achieved by a developer in exchange for public benefits. The Plan states that in no case may development exceed the public benefit bonus FAR and density identified for each proposed zoning district. The allowable FARs and residential densities reflect community preferences as explored through the community workshops. At the three workshops, participants commented on and selected preferences for overall building character as depicted in precedent photographs, photo montages, sections and sketches derived from initial community feedback, market analysis of demand for various uses, site accommodation studies and a planning level pro-forma to gauge project viability. This iterative process through the community workshops resulted in development prototypes used to develop the proposed FARs and residential densities. Detailed summaries of the community workshops as well as the presentation graphics are included in Appendix H.3 of the Specific Plan. In general, the highest FARs and densities would be found in the station area and along southeast El Camino Real. Within the station area, the higher FARs and densities serve to activate the area by increasing the resident population necessary to support the retail activities of the downtown and station area and increase transit use and the station's identity as a destination. The higher FARs and densities also serve to stimulate the development of the underutilized parcels found in the station area and along southeast El Camino Real.

The following sections discuss the proposed and existing land use, FAR and residential density standards for each of the land use designations in the Specific Plan, with the exception of the *Downtown/Station Area "Main Street" Overlay*. The overlay designation serves to enhance the retail emphasis of the *Downtown/Station Area Retail/Mixed Use* designation by specifically limiting non-retail ground floor uses on Santa Cruz Avenue, but otherwise is consistent with regards to development standards and guidelines with the underlying designation. With regard to existing FARs and residential densities, information has been obtained from City records that allow for a representative comparison to proposed FARs and densities. In some cases, existing buildings may

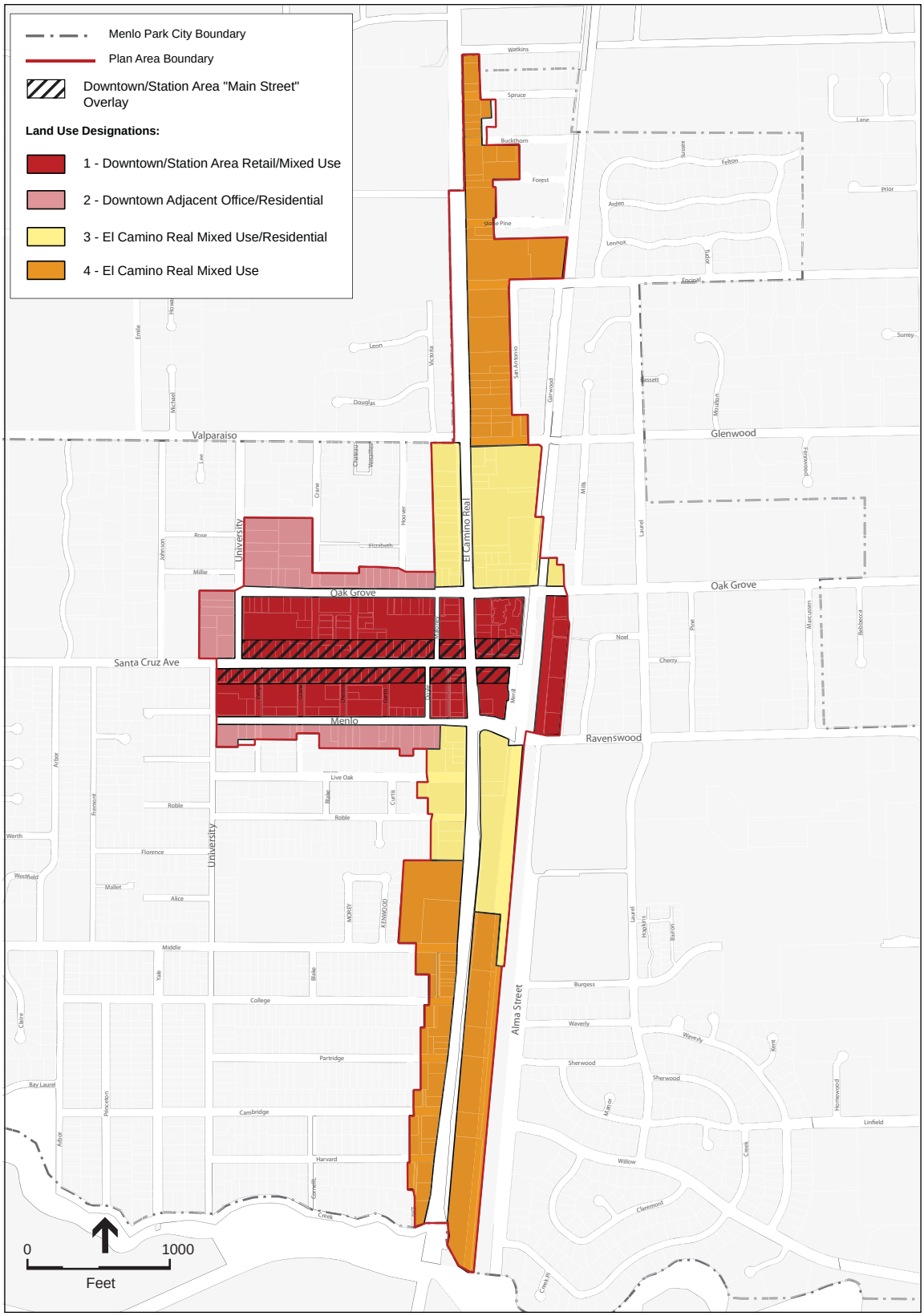
have FARs or densities higher than described in Section 4.9.2 *Regulatory Setting* as the result of buildings legally constructed prior to the current regulations, application of density bonuses related to the provision of affordable housing or other approvals granted by the City. Although heights are also a factor in building compatibility, the following discussions focus on FAR and residential density as the key components of land use compatibility. Heights are discussed in detail in Section 4.1, *Aesthetic Resources*. Proposed Specific Plan Land Use Designations are shown in **Figure 4.9-2**, and proposed Zoning Districts are shown in **Figure 4.9-3**. For analysis purposes, the existing land uses in the Plan area are shown in **Figure 4.9-4**.

As part of the following detailed discussions, specific standards and guidelines that help reduce impacts related to the land uses, FARs and densities are provided. However, there are a number of standards and guidelines that apply broadly to most land use designations and which serve to limit the potential conflicts with surrounding development. These are discussed below and referenced in the following detailed discussions.

Standards are the rules that new development is required to follow. Guidelines encourage features of good design. Together they are intended to encourage infill development while respecting the smaller scale, fine-grain character of downtown and the Plan area's proximity to existing residential uses. Projects proposed under the Specific Plan will be required to adhere to the applicable standards, while consistency with the applicable guidelines will be a key component of the discretionary review process for projects.

Key standards used to achieve compatibility between new buildings and the existing built character are based on massing controls and include limits on setbacks, façade heights and lengths, upper level building profiles, and façade modulation. Setbacks are used to ensure buildings fit within the context of their specific location. The Plan imposes front and side setbacks necessary to reinforce existing street patterns and yet allow for widened sidewalks, plazas and landscaped spaces. Rear setbacks are specifically used to provide open space and distance between new development and existing residential neighborhoods. Façade heights work in combination with upper level 45-degree building profiles and limits on façade lengths of 175 feet above a height of 38 feet to reduce the perception of height on taller buildings and adjacent to existing residential neighborhoods. Façade modulation requires minor vertical façade changes in street and public space facades for every 50 feet of building length and major vertical façade changes every 100 feet of building length. Other controls, such as allowed building projections for canopies, awnings and similar features, building breaks and required minimum open space further support existing patterns in the built environment.

Specific Plan standards and guidelines also address building ground floor treatments that help to provide a pleasant and safe pedestrian experience, successful retail environment, and appropriate transition between buildings and sidewalks and other public spaces. Standards E.3.5.01 and E.3.5.02, and Guidelines E.3.5.03 through E.3.5.08 address ground floor treatment, orientation and relationship of buildings to the street by encouraging orientation of retail and direct-access residential units to the street, provision of visually interesting and active uses along the street, ground floor transparency of retail and office uses, and use of canopies, awnings, and building design to break up building mass, add visual interest and provide shelter and shade. Standard E.3.5.09 and Guidelines E.3.5.10 through E.3.5.14 encourage building entries that are oriented to



SOURCE: City of Menlo Park, 2009

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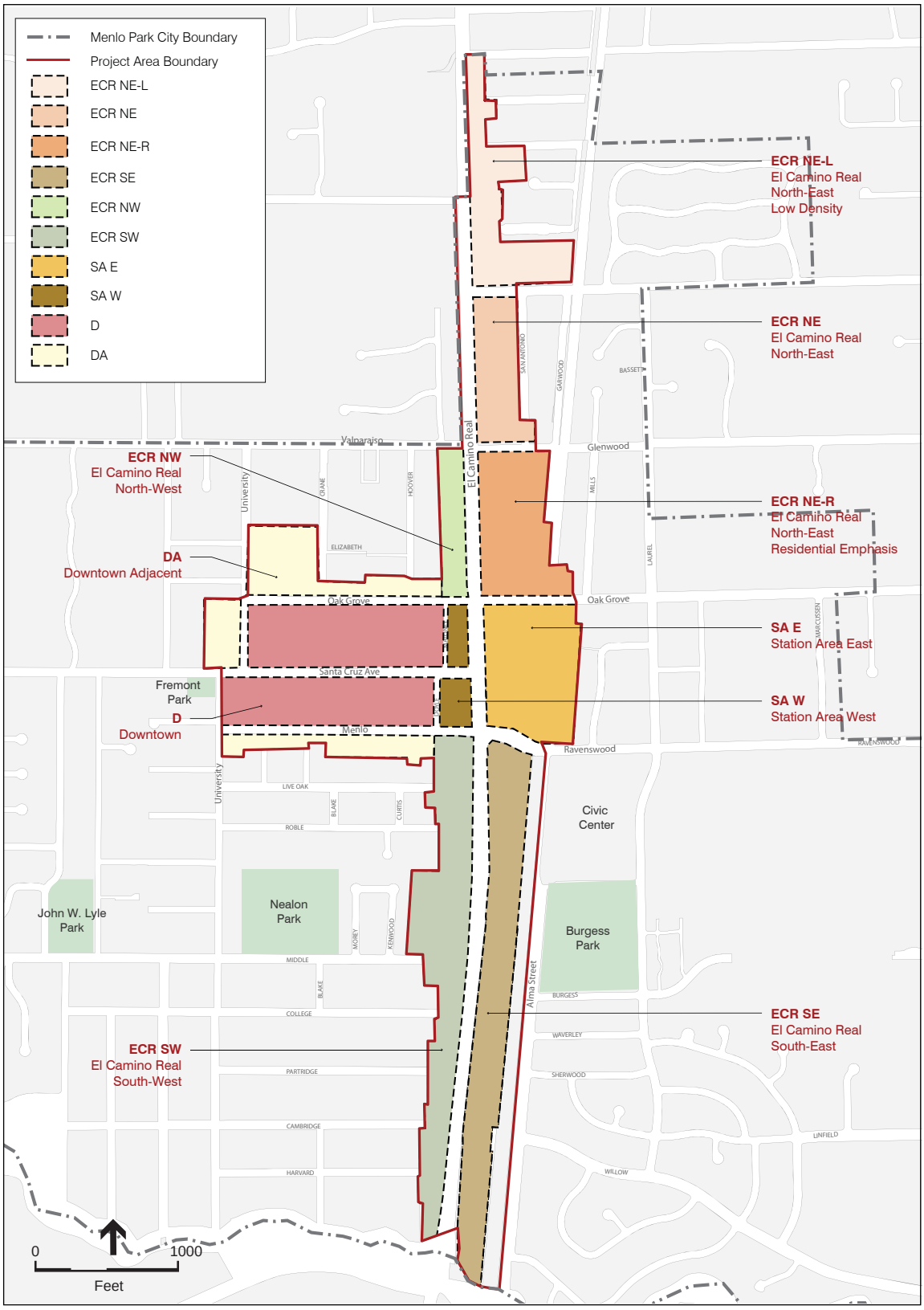
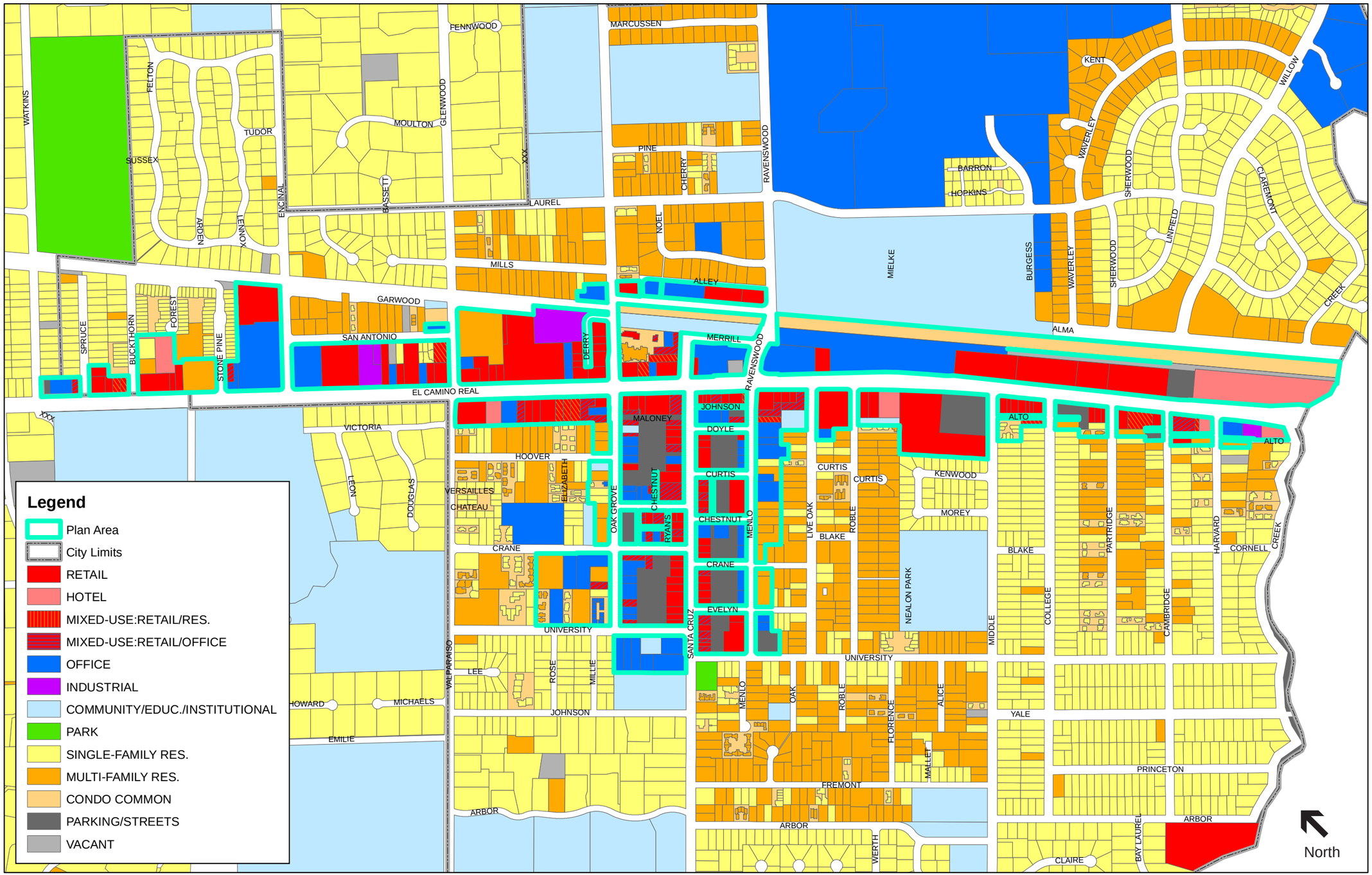
Figure 4.9-2
Proposed Land Use Designations



SOURCE: City of Menlo Park, 2009

Menlo Park El Camino Real/Downtown Specific Plan EIR . 208581

Figure 4.9-3
Proposed Zoning Districts



SOURCE: City of Menlo Park, 2011

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Figure 4.9-4
Existing Land Uses

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the street or other public spaces and made prominent and visually distinct with the use of scale, materials and architectural detail. Multiple entries are encouraged to reinforce existing street patterns where such patterns exist. Standards E.3.5.15 and E.3.5.16, and Guidelines E.3.5.17 through E.3.5.26 encourage storefront designs that are consistent with a building's overall design and contribute to establishing well-defined facades along the street yet are distinct from the building and other storefronts. Storefront elements should lend interest to building facades and maintain transparency with clear glass, open views and lit nighttime views into retail spaces. Recessed doorways for retail uses are further encouraged to help identify the location of store entrances, provide an opportunity for interesting paving and signage, and provide shade.

Overall, the land uses and increased FAR and residential density proposed under the Plan would not, in itself, result in substantial adverse effects on the compatibility of surrounding land uses. Other physical effects of increased FAR and density, such as traffic impacts and increased emissions of criteria air pollutants and greenhouse gases, are discussed in the applicable sections of this EIR.

Downtown/Station Area Retail/Mixed-Use

The *Downtown/Station Area Retail/Mixed-Use* land use designation, which would apply to the core of downtown between Oak Grove and Menlo Avenues eastward to Alma Street, focuses on uses that enhance downtown and the station area vibrancy by building upon existing community-serving retail and personal services. While emphasizing retail for ground floor uses, the designation allows for a mix of uses to support downtown vibrancy through an increased customer base. The designation allows for general retail sales, food and beverage sales (with the exception of liquor stores), restaurants, cinemas, hotel and residential uses as permitted uses. Other uses such as financial institutions, business services, offices, personal services and cultural institutions would be subject to limitations in size and or location in order to foster the retail nature of the designation. Similarly, some uses such as bars and lounges, convenience markets, liquor stores, clubs and lodges, day care centers and animal clinics and boarding would be subject to a conditional use permit review process through the Planning Commission. Finally, uses such as adult business establishments, automobile sales and leasing, gas stations and community social service and public safety facilities would be prohibited. As noted above, the *Downtown/Station Area "Main Street" Overlay* provides additional support for the retail nature of the designation by specifically limiting non-retail ground floor uses on Santa Cruz Avenue.

The proposed uses would be substantially similar to existing uses which have a mix of retail, restaurant and office as the primary uses with smaller numbers of financial institutions, service and residential uses. Within the station area, existing uses include office, retail, restaurants and personal service. Also within the station area, Menlo Center includes retail and restaurant uses located on the ground level with offices above, while Menlo Square has a large residential component. Within the downtown area, the predominate ground floor uses are retail and restaurant, at approximately 90 percent of the ground floor tenant spaces along Santa Cruz Avenue. Offices are typically located on the second floor of buildings. Along Oak Grove Avenue and Menlo Avenue, there is a higher percentage of office uses on the ground floor as well as on upper levels. In that the Specific Plan would allow for retail, restaurant, and residential uses as

permitted uses, and limited office, financial and personal service use, the Plan would support the continuation of the existing types of uses. Additionally, the *"Main Street" Overlay* would serve to further strengthen the focus on retail and restaurant uses along Santa Cruz Avenue.

The Specific Plan would allow for two types of uses that would be new to the station area and downtown. The first is cinemas which would be a permitted use in the *Downtown/Station Area Retail/Mixed Use* designation, but not within the *"Main Street" Overlay*. Although no cinemas are currently present in the downtown or station area, cinemas have been and continue to be located along El Camino Real near the downtown and would not introduce a new use to the area. In that cinemas draw customers that would also be likely to use other retail uses and restaurants they would be complementary to the existing uses in the downtown and station area.

The second use new to the downtown and station area are hotels which would be allowed as a permitted use in the land use designation, but only as a conditional use in the *"Main Street" Overlay*. Several letters in response to the Notice of Preparation referenced the location of a hotel on public parking plaza 8. Although documents and graphics used in the community workshops included this location as a possible concept for public consideration, the Specific Plan under evaluation in this EIR does not include a hotel on public parking plaza 8, consistent with community feedback. Instead, the Specific Plan includes hotel use as a general use category that could be developed on private property if such an opportunity were to emerge. Hotels currently exist along El Camino Real. Similar to cinemas, hotels help to add to the customer base for the types of uses and services found in the downtown as well as for the transit services, and would be complementary to the existing uses.

The Specific Plan also includes a concept for a marketplace along Chestnut Street south of Santa Cruz Avenue. Although the use would not introduce a new use to the downtown, the use of public parking plazas for permanent structures to house this use would be a change from existing conditions. The Plan envisions the marketplace as relatively small at approximately 4,000 square feet located along Chestnut Street in parking plazas 6 and 7 and housing retail and restaurant uses. The intent of the marketplace is to provide services complementary to the existing Farmer's Market, currently operating in Plaza 6, and other permanent businesses in a manner that would draw additional foot traffic to the area to benefit other retailers in the area. The Specific Plan includes Guideline D.2.33 that defines the marketplace as contributing to the Farmer's Market identity and presence in the region. Guideline D.2.34 provides for alternative physical forms of the marketplace including being an extension of the Chestnut Street Paseo, a roofed but open-air structure, or an enclosed building. Guidelines D.2.35 through D.2.37 further outline the physical design of the marketplace as being oriented to activate the Chestnut Street Paseo, Farmer's Market and flex space parking areas during special events, preserving and integrating the existing heritage oak tree, and retaining vehicular access to and from parking plazas 6 and 7. The Specific Plan does not design the physical appearance or establish the uses of the marketplace. Chapter E of the Specific Plan states that if the community decides to pursue a marketplace, additional public outreach would be necessary to determine the appropriate size, character and tenant mix with the primary goals of increasing foot traffic and complementing both existing grocers and the Farmer's Market. Additionally, the Specific Plan requires that the implementation of the Chestnut

Street Paseo and marketplace be first done on a trial basis before moving forward with a permanent installation. The trial period is to be used as the basis for the review and evaluation of a permanent installation. For purposes of the EIR evaluation, the small scale of the marketplace and types of retail and restaurant uses envisioned would be consistent with the existing one- and two-story buildings and retail and restaurant uses currently in the downtown.

Other than the marketplace described above, the Specific Plan considers the publicly owned parking plazas as opportunities for modest public open space and selective development of parking structures that would satisfy parking demand in downtown. As with the concept of the marketplace discussed above, the Specific Plan does not mandate the development or design of the parking plazas but allows for the community to decide if it is in the community's best interest to enhance the parking plazas with new improvements. If development on parking plazas were pursued, additional community outreach would be necessary. However, the Specific Plan acknowledges that parking in support of businesses must be the City's top priority when considering how, when and if to pursue such development. For purposes of evaluation in the EIR, the proposed parking and open space uses are consistent with uses that currently exist in the downtown therefore would not introduce new uses that would have the potential to conflict with existing conditions. The actual design of the structures would be subject to height, setback and massing controls that would lessen any potential impact on surrounding properties to a less than significant impact, as discussed in Section 4.1, *Aesthetic Resources*. Parking and traffic impacts are discussed in Section 4.13, *Transportation, Circulation and Parking*.

The FAR and residential densities of land use are also factors in the determination of land use compatibility with the existing neighborhood. Existing FARs in the station area vary from 0.20 to 1.70 with one-story buildings having the lowest FARs and older two-story buildings along El Camino Real having the highest FARs. Newer development, such as Menlo Center and Menlo Square, has FARs of 0.73 and 0.85, respectively. Existing residential densities range from approximately 12 to 38 dwelling units per acre, with Menlo Square having a density of 20 units per acre. The station area also abuts existing residential uses to the east of Alma Street. These residential units have FARs of approximately 0.45 with densities that range from 25 to 50 dwelling units per acre. To the west, the station area abuts downtown with existing FARs that range from 0.70 to 2.00 (see more discussion of the downtown area below).

The proposed base FAR is 1.35 and up to 1.75 with a negotiated public benefit in the station area east of El Camino Real and 2.00 and up to 2.25 with a negotiated public benefit in the station area west of El Camino Real. The proposed base density both east and west of El Camino Real is 50 dwelling units per acre and up to 60 dwelling units per acre with a public benefit bonus. The proposed FARs and residential densities would represent a change to higher intensities and densities in the station area, although the proposed FAR would be compatible to the higher existing FARs and density would be generally consistent with densities of up to 50 units per acre existing in the residential area to the east of the station area.

Existing FARs in the downtown primarily range from 0.70 to 2.00, although some buildings along the cross streets have FARs below 0.70. The same patterns occur along Oak Grove and

Menlo Avenues, but with higher percentages of FARs at or near 2.00. In general, one-story buildings have the lowest FARs, one-story buildings with mezzanine space a middle range of FARs and two-story buildings the highest FARs. Residential development is limited in the downtown, primarily occurring as two or three units above select buildings with densities of approximately 18 units per acre.

The proposed base FAR for the downtown is 2.00 and up to 2.25 with a negotiated public benefit. In that existing buildings within this area have FARs up to 2.00; the Specific Plan would not introduce a substantially higher FAR than exists in a number of buildings. The proposed residential density would be somewhat higher than existing densities, although given the relatively small size of lots in the downtown the density increase would not result in substantial increases in the number of units. For example, on a typical 5,000 square foot parcel, the base density would allow for two units, similar to the existing conditions, and four units at the maximum density that could be achieved with a public benefit bonus. The allowance of a modest increase in residential development would be consistent with the existing residential use in the downtown.

As noted earlier, the increased FARs and residential densities reflect community preferences as determined through the community workshops. The preferences are embodied in the Specific Plan objectives to enhance the Plan area through mixed use development, inclusive of a strong residential component, necessary to generate the vibrancy needed to support retail business, activate public spaces, support transit as a mode of travel and support the station area and downtown as a destination. In the workshops, the community also emphasized the need for design controls in order to minimize impacts of larger buildings and increase compatibility with the existing character of the Plan area. As discussed above, the Plan includes standards and guidelines intended to respect the smaller-scale, fine grain character of downtown and achieve compatibility between new buildings and the existing built environment. In this land use designation, the Specific Plan standards require that all buildings have maximum façade height limits of 30 feet for 38-foot heights and 38 feet for 48- and 60-foot heights, above which upper level 45-degree building profiles would be required. Additionally, facades would be required to be modulated along public streets and projections such as awnings and canopies would be allowed in order to provide further visual interest and character to building facades. Other standards reflect the different character of the downtown and the station area east of El Camino Real. Within the downtown, setbacks are not required in order to mimic the existing strong street edge created by a continuous line of relatively narrow storefronts. Standard E.3.4.2.01 requires minor vertical façade modulation every 50 feet of façade length in order to maintain a tight and varied rhythm of facades compatible with the existing character, specifically relating to the typical 50 foot wide parcel. The one exception is the proposed parking garages where minimum 25 foot setbacks are required on all sides of the garages directly abutting private property in order to allow for appropriate access and interface between the garages and existing buildings. Guidelines E.3.7.09 through E.3.7.11 encourage any future development of garages to integrate with adjacent existing buildings and avoid monolithic massing. A similar strong street edge would be created in the station area although setbacks of five to eight feet would be required along El Camino Real and setbacks of seven to 12 feet along Alma Street to support widened

sidewalks. Alma Street would also have rear setbacks of 10 feet minimum where the Specific Plan area abuts multiple-family residential development. Because of the likelihood of larger buildings in the central station area, upper story façade length limits and a 20 percent minimum open space requirement are also applicable to new development. As discussed in this section and Section 4.1, *Aesthetic Resources*, with the massing controls and design standards and guidelines included in the Specific Plan, the increased FARs and residential densities in the *Downtown/Station Area Retail/Mixed-Use* designation would not, in itself, result in substantial adverse effects on the character of the neighborhoods within or adjacent to the Specific Plan area.

Downtown Adjacent (Office/Residential)

To the north, south, and west of the downtown core, properties would be designated as *Downtown Adjacent*, where the only permitted use is residential. Other uses, such as financial institutions, business services, offices, and personal services would be allowed with limitations on size and location, and uses such as hotels, day care centers, and religious and safety facilities would only be allowed through a conditional use permit. The more restrictive nature of the land uses serves to emphasize the designation's relationship to adjacent residential neighborhoods.

The proposed uses would be substantially similar to the pattern of existing uses. Along the south side of Menlo Avenue approximately 60 percent of the uses are residential with the majority being larger multiple-family developments. The remainder of the use is primarily office. Uses along the north side of Oak Grove Avenue represent a mix of uses with no one use predominating that includes residential, office, financial and personal services and institutional uses. The segment also includes mixed residential and commercial development. Along both Menlo and Oak Grove Avenues, adjacent neighborhoods are primarily residential. Along the west side of University Drive, the uses both in and adjacent to the Plan area are primarily office and institutional with single-family residences to the northwest of the Plan area. The Specific Plan's focus on residential uses with limited office and support services would be consistent with the existing patterns in the *Downtown Adjacent* designation and would help to create a buffer between the adjacent residential neighborhoods and the more active retail and restaurant focus of the downtown core. Therefore, the proposed uses would be substantially compatible with surrounding land use character.

Proposed intensities include a base FAR of 0.85 and up to 1.00 with a public benefit bonus. The proposed residential density is a base of 18.5 units per acre and up to 25 units per acre with a negotiated public benefit bonus. The proposed FAR is generally consistent with the existing conditions where FAR ranges from 0.18 to 0.85 with the higher FAR found in mixed use buildings located along Oak Grove Avenue and multiple-family residential buildings along Menlo Avenue. The existing residential densities are, in some cases, higher than what is proposed, ranging from single-family residences to large multiple-family buildings with densities of approximately 40 dwelling units per acre. Although the proposed FAR and density would not introduce substantial new intensities not already found in the area, smaller buildings could be replaced with larger development. The proposed FARs and densities would address objectives of the Specific Plan to enhance mixed use and residential development for an increased customer base and added vibrancy for the downtown and station area. Additionally, the standards and guidelines discussed above will serve to ensure that new development complements and integrates with existing development.

Specifically, the *Downtown Adjacent* designation limits total height to 38 feet and requires upper level 45 degree building profiles above a maximum façade height of 30 feet. Front setbacks of between five and 20 feet are required in order to provide for minimum 11 foot sidewalks and rear setbacks of 10 feet minimum are required adjacent to surrounding neighborhoods. Therefore, the increased FARs and residential densities would not, in itself, result in substantial adverse effects on the character of the neighborhoods within or adjacent to the Specific Plan.

El Camino Real Mixed-Use/Residential

The *El Camino Real Mixed-Use/Residential* land use designation would encompass the areas between Glenwood/Valparaiso Avenues and Oak Grove Avenue, and again between Ravenswood Avenue and approximately Middle Avenue (not including the existing supermarket). The designation emphasizes residential in close proximity to the station area and downtown in order to support area businesses, transit use and overall downtown vibrancy. Residential is a permitted use in the designation as well as a mix of other uses, including general retail, food and beverage sales (excluding liquor stores), general personal services, restaurants, business services, automobile sales, cinemas, financial institutions and hotels. Offices and cultural institutions are allowed with limitations on size. Other uses, such as animal clinics and boarding, gas stations and light vehicle service, small scale commercial recreation, bars and lounges, liquor stores, conveniences markets, funeral and internment services, clubs and lodges, and community, social, religious and safety facilities would only be allowed through a conditional use permit.

The existing land uses include many of the same uses as proposed in the Specific Plan. In the segment between Glenwood/Valparaiso Avenues and Oak Grove Avenue, uses include retail, restaurants, business and personal services, financial services, office, motel, gas stations and other automobile services, and residential. In the segment between Ravenswood Avenue and approximately Middle Avenue uses include retail, restaurants, business and personal services, office, cinema and a hotel. Although the varied nature of the existing uses reflect the range of uses that would be allowed, either as permitted or conditional uses in the Specific Plan, the Plan's emphasis on residential uses could bring more residential use to the area than currently exists. The residential use would complement existing retail, restaurant, cinema and service uses by creating a stronger customer base for these uses. Additionally, the emphasis on residential use would be compatible with the residential neighborhoods that surround this area and the proximity of the Civic Center and Burgess Park would be an amenity for residents. However, residential uses also potentially conflicts with existing automotive-related uses. Possible impacts related to noise, hazardous materials, air quality and pedestrian safety are discussed in applicable sections of this EIR and were found to be less than significant.

Proposed base FARs would be 1.10 in all areas of the *El Camino Real Mixed-Use/Residential* designation with the exception of the southeast side of El Camino Real where the base FAR would be 1.25. With negotiated public benefit bonuses, the FARs could range from 1.50 to 1.75 respectively. Residential densities would range from a base of 25.0 dwelling units per acre (40.0 with a public benefit bonus) in the areas on the west side of El Camino Real (both north of Oak Grove Avenue and south of Ravenswood Avenue) to a base of 32.0 dwelling units per acre (50.0 with a public benefit bonus) on the east side of El Camino Real north of Oak Grove Avenue

and a base density of 40.0 (60.0 with a public benefit bonus) dwelling units per acre on the east side of El Camino Real, south of Ravenswood Avenue.

Existing FARs within the *El Camino Real Mixed Use/Residential* designation range from less than 0.20 for service stations and similar small buildings to over 0.80 for one- and two-story buildings with no or small parking and landscaped areas. The three-story building at the southwest corner of El Camino Real has an FAR of 0.65. The neighboring retail complex, including the four-story tall building, has an FAR of 0.20. The primary residential use in the designation is the Glenwood Inn, a senior residential facility with an FAR of 1.14 and a density of 55 units per acre. With the exception of the Civic Center which borders the southwest segment, the remaining segments are bordered by residential uses. The residential uses adjacent to the northeast segment are primarily two-story tall multiple-family developments with densities that range from 10 to 40 dwelling units per acre. The majority of the residential developments are approximately 25 units per acre. The residential uses located adjacent to the northwest and southwest segments are a mix of single-family and multiple-family developments at a lower density of approximately 12 units per acre, although buildings up to 25 units per acre are found adjacent to the northwest segment.

As discussed above, the higher FARs and residential densities included in the Specific Plan were developed based on community preferences as established at the workshops in order to encourage the development of underutilized parcels found along the northeast segment of this land use designation and to generate vibrancy through an increased customer base for commercial uses in the downtown and station area and for transit use. Additionally, the standards and guidelines discussed above will serve to ensure that new development complements and integrates with existing development. Specifically, the *El Camino Real Mixed-Use/Residential* designation varies the application of the standards in recognition of the differences in the surrounding neighborhoods.

The northeast segment primarily abuts two-story multiple-family residential uses with densities up to 40 units per acre. The northwest segment abuts a mix of single-family and multiple-family residential uses with densities up to 25 units per acre. Given the character of the surrounding neighborhoods and the location close to downtown and the transit station, the Plan limits base heights to 38 feet, generally consistent with maximum allowed heights of 35 feet in the surrounding neighborhoods. In the northeast segment heights would be allowed up to 48 feet with the provision of public benefit. Although no upper level building profiles are required with the 38-foot height, they would be required with the 48-foot height. Rear setbacks are required to be a minimum of 20 feet along the northwest segment where the Plan area directly abuts the adjacent neighborhood, and a minimum of 10 feet along the northeast segment which is separated from the surrounding neighborhood by Garwood Way and the railroad right-of-way. New development would also be required to include 20 percent minimum of the lot area in open space.

The southwest segment also directly abuts a residential neighborhood, although in recognition of the lower density of approximately 12 units per acre in the neighborhood, the Plan limits the height to 38 feet and includes façade height maximums of 30 feet above which 45 degree building profiles are required. Additionally, rear setbacks of 10 feet minimum and open space requirements of 20 percent apply to new development north of Live Oak in recognition of the

area's proximity to the downtown. Larger rear setbacks of 20 feet minimum and greater open space requirements of 30 percent minimum are required south of Live Oak Avenue.

The southeast segment is unique given its existing development of three- and four-story buildings and large buffer created by Alma Street, the railroad right-of-way and the Civic Center. As such, the Plan proposes the largest buildings in this area. Although heights would be allowed up to 60 feet, buildings would be required to maintain maximum façade heights of 38 feet on all sides of a building that face public right-of-ways and public open spaces as well as on the rear of buildings above which upper level 45 degree building profiles and façade length limits would apply. Additionally, breaks between buildings, building modulation, and 30 percent minimum open space would be required. Front setbacks would be required throughout the four segments to enable wider sidewalks where called for in the Specific Plan in order to enhance the north-south connectivity.

Overall, the land uses proposed by the Specific Plan are consistent with existing land uses. The emphasis on residential use is compatible with surrounding neighborhoods and the increased FARs and residential densities support the community's objectives to encourage the development of underutilized parcels, generate vibrancy in the downtown and station areas, increase the use of transit and provide for additional residential opportunities. The included standards and guidelines help to integrate new development into the existing environment and therefore, the change in intensities and densities would not, in itself, result in substantial adverse effects on the character of the neighborhoods within or adjacent to the Plan area.

El Camino Real Mixed Use

The El Camino Real Mixed Use land use designation would encompass the areas approximately north of Glenwood Avenue and south of Middle Avenue (including the existing supermarket) in the Specific Plan area. The designation allows for the same set of uses as the *El Camino Real Mixed-Use/Residential* designation with the exception that small-scale commercial recreation would be a permitted use as opposed to a conditional use, cinemas would be a conditional use as opposed to a permitted use, and bars and lounges and public parking facilities would be prohibited. These differences reflect the designation's distance from the downtown and station area where entertainment is a more focused feature. The proposed uses are similar to the existing uses in the designation which include retail, restaurants, personal and business services, offices, three hotels, three gas stations and residential uses. The area also includes automobile-related uses including a car wash, auto repair, one active automobile dealership and several vacant automobile dealerships, most notably located along the southeast segment of El Camino Real. The southwest segment is anchored by the Safeway complex. Although the proposed uses would not represent a significant change in use, as described in the *El Camino Real Mixed Use/Residential* designation, residential uses could conflict with existing automotive-related uses with regard to noise, hazardous materials, air quality and pedestrian safety. These potential impacts are discussed in the applicable sections of this EIR and were found to be less than significant.

The proposed FARs and residential densities vary in this land use designation in order to be compatible with surrounding neighborhoods. The lowest proposed FARs and densities occur in

the most northerly segment of El Camino Real where the Plan area abuts primarily single-family residential development. In this area, base FARs would be 0.75 and up to 1.10 with a public benefit bonus. Base densities would be 20 units per acre and up to 30 units per acre with a public benefit bonus. The existing commercial buildings have FARs that range from approximately 0.25 to 1.25 with the lowest FARs for small one-story buildings and the highest FARs for large two-story buildings. The only residential building in the area is a three-story apartment building with a density of 72.5 units per acre. The adjacent single-family residential neighborhood has a density of 14.6 units per acre. Although the proposed FARs and densities represent a possible increase over the smaller buildings in the area, they would not introduce higher FARs or densities than already exist in the area.

The remainder of the northeast segment is separated from existing multiple-family residential development by San Antonio Street, thereby allowing for higher FARs and densities. Proposed base FARs in this area are 1.10 and up to 1.50 with a public benefit bonus. Base densities are 25 units per acre and up to 40 units per acre with a public benefit bonus. The same FARs and residential densities would also be applicable in the southwest segment, where the Plan area is adjacent to both single-family and multiple-family development. Within the northeast segment, the existing commercial buildings have FARs that range from less than 0.20 for the gas station to 0.55. Residential development occurs primarily near the intersection of Glenwood Avenue and San Antonio Street with densities that average approximately 17 units per acre. The multiple-family residential developments along the east side of San Antonio Street have densities that range from 12 to 43 units per acre. Along the southwest segment, commercial FARs range from a low of 0.08 for one of the gas stations to between 0.75 and 0.82 for larger two-story buildings. The Safeway complex has an FAR of 0.35. There are no comparable residential densities in this segment, although the neighborhoods to the west are comprised of single-family and multiple-family development with densities of approximately12 units per acre.

The highest FARs and densities are proposed along the southeast corridor of El Camino Real partly in recognition of the buffer created by the segment's location adjacent to the railroad right-of-way and Alma Street, which separate the segment by approximately 200 feet from the adjacent neighborhood. The base FAR is proposed to be 1.25 and up to 1.75 with a negotiated public benefit bonus. Base residential density is proposed to be 40 units per acre and up to 60 units per acre with a public benefit bonus. With the exception of the hotel with 0.70 FAR, existing FARs are fairly low at between 0.13 and 0.25 for the former and current automobile dealerships. There are no comparable residential densities in this segment however multiple-family residential developments along the east side of Alma Street have densities ranging from 25 to 30 units per acre.

Consistent with the other land use designations discussed above, the higher FARs and residential densities included in the Specific Plan were developed based on community preferences for larger buildings in order to generate vibrancy in the Plan area and provide for residential opportunities near jobs and shopping areas. Specific to the southeast segment, the community expressed a strong preference for the redevelopment of the underutilized automobile dealership properties. In order to ensure that new development complements and integrates with existing development, the Specific Plan includes standards and guidelines as described above. Similar to the *El Camino Real*

Mixed-Use/Residential land use designation, this designation also varies the application of the standards in recognition of the differences in the adjacent neighborhoods. The most northerly segment (north of Encinal Avenue) limits total heights to 38 feet, and façade heights to 30 feet. Above the façade heights, buildings are required to include upper level 45-degree building profiles to further reduce the perception of the height. Setbacks and open space requirements provide distance between new development and adjacent buildings. Front and corner side setbacks are required to be between 10 and 20 feet to enable the development of a 15-foot wide sidewalk along the east side of El Camino Real. Interior side setbacks between 10 and 25 feet and rear setbacks of 20 feet minimum are also required. Developments are required to provide a minimum of 30 percent open space and façade modulation to increase the visual interest of the buildings.

As noted above, the northeast segment between Encinal and Glenwood Avenues is separated from the adjacent multiple-family residential neighborhood by San Antonio Street. Given the higher densities of the adjacent neighborhood, the Plan limits base heights to 38 feet, generally consistent with maximum allowed heights of 35 feet in the surrounding neighborhoods. Heights would be allowed up to 48 feet with the provision of public benefit. Although there are no upper level building profiles required at the base 38-foot height, building profiles are required at the maximum 38-foot façade height with the 48-foot overall maximum height. Front and side setbacks would be the same as for the segment to the north. Rear setbacks of 10 feet minimum would be required, in recognition of the buffer created by San Antonio Street. New development would also be required to include 30 percent minimum of the lot area in open space as well as provide façade modulation to increase the visual interest of buildings.

The southwest segment directly abuts a residential neighborhood of both single-family and multiple-family development. In recognition of the mixed density of the neighborhood, the Plan limits the height to 38 feet and includes façade height maximums of 30 feet above which upper level 45-degree building profiles are required. Additionally, front and corner side setbacks of between seven and 12 feet, interior side setbacks of between five and 25 feet, rear setbacks of 20 feet minimum and open space requirements of 30 percent minimum apply to new development south of Live Oak Avenue.

As noted previously, the southeast segment is unique given its existing development of taller buildings on the ends of the segment and large buffer created by Alma Street, the railroad right-of-way and the Civic Center. As such, the Plan proposes the largest buildings in this area. Although heights would be allowed up to 60 feet, buildings would be required to maintain maximum façade heights of 38 feet on sides of buildings that face public right-of-ways and public open space as well as on the rear of buildings, above which upper level 45 degree building profiles and limits on facade lengths would apply. Additionally, breaks between buildings, building modulation, and 30 percent minimum open space would be required. Front setbacks would be required to enable wider sidewalks with a minimum 15-foot width to enhance the north-south connectivity.

Overall, the land uses proposed by the Specific Plan are consistent with existing land uses. The increased FARs and residential densities support the community's objectives to encourage the development of underutilized parcels and generate vibrancy through new mixed use development

and increased residential opportunities. The included standards and guidelines help to integrate new development into the existing environment and therefore, the change in intensities and densities would not, in itself, result in substantial adverse effects on the character of the neighborhoods within or adjacent to the Plan area.

Mitigation: None required.

Impact LU-3: Implementation of the Menlo Park El Camino Real/Downtown Specific Plan would not substantially conflict with the General Plan, Zoning Ordinance, or other land use plans or policies adopted for the purpose of mitigating an environmental effect. (Less than Significant)

The adoption of the Specific Plan would be accompanied by a General Plan amendment that would effectively replace existing General Plan land use designations, goals and policies for the Plan area. As such, the Specific Plan includes a description of the relationship of selected General Plan goals and policies to the Specific Plan. Building on that assessment, **Table 4.9-2** presents an analysis of consistency of the proposed Specific Plan with existing General Plan goals and policies related to land use and which may mitigate environmental effects. The consistency of the Specific Plan with General Plan policies related to other potential impacts, such as transportation, are discussed in other applicable sections of this EIR. As shown in the table, the Specific Plan is broadly consistent with relevant land use policies in the General Plan, as is required by State planning and zoning law.

The Specific Plan includes Zoning Ordinance elements, and as such pre-empts the Zoning Ordinance unless otherwise specified. The Zoning Map and Zoning Ordinance would be amended with the controls of the Specific Plan, but individual project review procedures included in the Zoning Ordinance (including conditional use permits, architectural control, administrative permits, and variances) would remain, requiring in some cases new, Plan-specific findings. To the extent that the Specific Plan would amend the Zoning Ordinance, the impacts of those amendments are considered in the relevant sections of this EIR. An amendment to the Zoning Ordinance constitutes an environmental impact only when it results in a substantially adverse physical change in the environment.

The City has no other applicable plans or policies adopted for the purpose of avoiding an environmental effect (habitat conservation plans are discussed below). The Specific Plan would not substantially conflict with existing General Plan and Zoning Ordinance policies adopted for mitigating an environmental effect, and the impact would be less than significant.

Mitigation: None required.

TABLE 4.9-2
GENERAL PLAN POLICY CONSISTENCY

City of Menlo Park General Plan Policies		Specific Plan Consistency
SECTION I: LAND USE POLICIES (1994)		
Residential Policies		
1-A-4	Residential uses may be combined with commercial uses in a mixed use project, if the project is designed to avoid conflicts between the uses, such as traffic, parking, noise, dust and odors.	The Specific Plan allows for mixed-use commercial and residential development that will be subject to architectural review to ensure design features that help address compatibility issues.
1-A-5	Development of housing, including housing for smaller households, is encouraged in commercially-zoned areas in and near Downtown. (Downtown is defined as the area bounded by Alma Street, Ravenswood Avenue/Menlo Avenue, University Drive and Oak Grove Avenue.) Provisions for adequate off-street parking must be assured.	The Specific Plan encourages housing development along El Camino Real and in the station and downtown areas through increased allowable development intensities. It requires adequate off-street parking.
1-A-6	Development of residential uses on the north side of Oak Grove Avenue and on the south side of Menlo Avenue adjacent to the Downtown commercial area is encouraged.	The Specific Plan allows for housing development in these areas.
Commercial Policies		
1-B-1	The Downtown shall include a complementary mix of stores and services in a quality design, adding natural amenities in to the development pattern.	The Specific Plan allows for a complementary mix of stores and services, coupled with design standards and guidelines which help ensure quality design. It adds significant new public space and landscape downtown.
1-B-2	Parking which is sufficient to serve the retail needs of the Downtown area and which is attractively designed to encourage retail patronage shall be provided.	The Specific Plan provides for a variety of parking facilities, including surface parking lots, on-street parking and parking garages to provide adequate parking to meet the needs of visitors and employees. Design guidelines and standards will ensure attractive designs for any new parking facilities.
1-B-4	Uses and activities shall be encouraged which will strengthen and complement the relationship between the Transportation Center and the Downtown area and nearby El Camino Real corridor.	The Specific Plan proposes new public space improvements and sidewalk extensions that enhance connections between downtown and the station area. It encourages Santa Cruz Avenue "main street" retail uses to extend from El Camino Real to the Caltrain Station.
1-C-1	New and upgraded retail development shall be encouraged along El Camino Real near Downtown, especially stores that will complement the retailing mix of Downtown. Adequate parking must be provided and the density, location, and site design must not aggravate traffic at congested intersections. The livability of adjacent residential areas east and west of El Camino Real and north and south of Downtown must be protected.	The Specific Plan guidelines call for development along El Camino Real that incorporates ground-floor uses, including retail that activate the street and provide for adequate on-site parking. The Specific Plan design guidelines also require setbacks and other massing limitations that protect residential neighborhoods.
1-C-2	Small-scale offices shall be allowed along most of El Camino Real in a balanced pattern with residential or retail development.	The Specific Plan encourages a mix of appropriate uses, including offices. The Specific Plan also requires that new office uses, either in isolation or as part of a mixed-use project, have a minimum FAR that is one-third to one-half of the overall maximum FAR, which will additionally encourage a mix of uses.
1-E-2	Hotel uses may be considered at suitable locations within the commercial and industrial zoning districts of the City.	The Specific Plan allows for hotel uses in the plan area.

TABLE 4.9-2 (Continued)
GENERAL PLAN POLICY CONSISTENCY

City of Menlo Park General Plan Policies		Specific Plan Consistency
SECTION I: LAND USE POLICIES (1994) (cont.)		
Commercial Policies (cont.)		
1-E-3	Retention and expansion of auto dealerships in the city shall be encouraged. Development of new auto dealerships or combined dealerships in an auto center shall be encouraged at suitable locations in the city.	The Specific Plan allows for auto dealerships along El Camino Real.
Open Space Policies		
1-G-2	The community should contain an ample supply of specialized open space in the form of squares, greens, and parks whose frequent use is encouraged through placement and design.	The Specific Plan proposes expansive new public space improvements, particularly in the downtown and stations areas. Such improvements include widened sidewalks, plazas, paseos, and pocket parks.
Public Transit Policies		
II-B-2	As many activities as possible should be located within easy walking distance of transit stops, and transit stops should be convenient and close to as many activities as possible.	The Specific Plan proposes increased densities of development, including housing, retail and commercial uses, in the station and downtown areas. It proposes enhanced public improvements, including sidewalks, and accommodates increased bus service and access to the Caltrain station.
SECTION III: HOUSING POLICIES (1992)		
III.A.5	The City will promote development of mixed medium or high-density residential and commercial projects in the Central Business District and along El Camino Real as a means of providing more housing on job sites to help offset the impact of new employment on the regional housing market.	The Specific Plan, through increased allowable densities and other incentives, encourages higher density housing in the plan area, particularly in the station area and downtown.
III.A.10	The City will increase the supply of land available for residential development by redesigning and rezoning targeted residential and non-residential parcels for multi-family residential use, particularly near public transit and major transportation corridors in the city.	The Specific Plan, through increased allowable densities and other incentives, encourages higher density housing in the plan area, particularly in the station area and downtown. It allows for housing throughout the entire plan area.
III.A.11	The City will promote the distribution of new, higher-density residential developments throughout the city, taking into consideration compatibility with surrounding existing residential uses, particularly near public transit and major transportation corridors in the city.	The Specific Plan, through increased allowable densities and other incentives, encourages higher density housing in the plan area, particularly in the station area and downtown. Design guidelines and standards, such as upper-story 45-degree building profiles, will provide protections to neighboring residential properties.
OPEN SPACE AND CONSERVATION POLICIES (1973)		
1	Provide open space lands for a variety of recreation opportunities. Make improvements, construct facilities, and maintain programs which encourage a maximum of resident participation.	The Specific Plan proposes increased public spaces, including widened sidewalks, pocket parks and plazas that accommodate a variety of public gathering opportunities.

SOURCE: Downtown Menlo Park/El Camino Real Draft Specific Plan, 2010.

Cumulative Impacts

Impact LU-4: Implementation of the Menlo Park El Camino Real/Downtown Specific Plan, in combination with other past, present, and reasonably foreseeable future plans and projects, would not result in cumulatively considerable impacts to land use. (Less than Significant)

Geographic Scope

The cumulative land use analysis encompasses all known past, present, and reasonably foreseeable projects within the vicinity of the Specific Plan area in which land use changes could contribute to cumulative land use impacts. Past projects are those already existing in the built environment, described in Section 4.9.1 *Environmental Setting*. Present projects include those approved, under construction, or being tenanted. Future projects include projects and plans in development or pending approval, described in **Table 4-1**. The rough geographic scope of this area depends on surrounding land uses, natural features, built corridors, and municipal boundaries.

To the west, the boundary varies. Beginning at the northern end of the Specific Plan area, the existing Menlo School and Menlo College in the Town of Atherton are distinctly separate and different from the City of Menlo Park due to their style of street grid, concentration of institutional land uses, and introverted orientation with opaque fences facing onto both El Camino Real and Valparaiso Avenue. Changes in land uses in these areas would be limited and would not considerably contribute to cumulative land use impacts to the City of Menlo Park. Moving southward, both the City of Menlo Park's boundaries and downtown's main thoroughfare, Santa Cruz Avenue, extend westward. Middle Avenue also extends westward from El Camino Real, providing access to the residential land uses in the southwest area of the City. Land use changes within one-half mile of the Specific Plan area (approximately to Olive Street) could contribute to cumulative land use impacts. Areas beyond one-half mile would not meaningfully interact with land use changes downtown. However, given the primarily residential nature of the surrounding area, no substantial changes to the area are expected.

To the south, the geographic scope ends at the City limits because Palo Alto and Stanford University to the south have a distinct land use pattern, as well as institutional blocks of uses, that are separated from Menlo Park by Sand Hill Road, Palo Alto Avenue, and the San Francisquito Creek.

To the east, the boundary is approximately Middlefield Road, across which changes to the residential land uses and institutional Menlo-Atherton High School would be limited and would not considerably contribute to cumulative land use impacts. In addition, although the Specific Plan proposes to increase connectivity and access across the Caltrain right-of-way, the tracks would still present a physical barrier, however porous to cumulative impacts of land use changes.

To the north, the boundary is approximately Fair Oaks Lane in Atherton. This corridor traverses neighborhoods of primarily single-family, detached houses where land use changes would not

cumulatively contribute to land use impacts in Menlo Park. In addition, the corridor serves as a dividing line and midway point between the Specific Plan area and Redwood City.

Analysis

As stated above, the Specific Plan area does not lie within the planning area for any adopted or proposed habitat conservation or natural community plans and would have no impact related to this criterion. Therefore, in combination with cumulative projects, the Specific Plan would not result in a cumulatively considerable impact to habitat conservation or natural community plans.

Several of the cumulative development projects listed in Table 4-1 fall within the boundaries of the Specific Plan. These include the proposed residential project at 389 El Camino Real, commercial project at 1300 El Camino Real, mixed use project at 1460 El Camino Real, office projects at 1706 and 1906 El Camino Real, and the mixed use project at 580 Oak Grove Avenue. The construction of these projects would be generally consistent with the land use character of the Specific Plan and existing plans and policies, which encourage these uses along El Camino Real. The projects would not result in substantial physical division of an established community. To the contrary, they would bring more uses, residents, and consumers to the Specific Plan area. This would intensify activity in the Specific Plan area and create nodes of complementary uses that would not substantially conflict with existing land uses.

The intensity and density of the projects within the boundaries of the Plan area would also be generally consistent with the Specific Plan. The proposed project at 389 El Camino Real proposes an FAR of 0.89 and a density of 21 units per acre, below the Plan's proposed base FAR of 1.10 and base density of 25 units per acre. The project at 1300 El Camino Real includes an FAR of 0.74 where the Specific Plan would allow a base FAR of 1.10. The office portion of the project would have an FAR of approximately 0.40 where the Specific Plan would allow 0.55. The mixed use project at 1460 El Camino Real includes an FAR of 0.75, office FAR of approximately 0.40, and a density of approximately 10 units per acre, below the Plan's proposed base FAR of 1.10, proposed office FAR of 0.55 and the base density of 25 units per acre. The office projects at 1706 and 1906 El Camino Real have FARs of approximately 0.37 and 0.38, respectively. The project FARs are close to the base FAR allowed for general office uses at 0.375 but would be higher than the base FAR of 0.25 allowed for medical office use. Using the negotiated public benefit FAR, the projects would be consistent with the allowed office FAR of 0.55 and close to the allowed medical office use of 0.366. The proposed mixed use project at 580 Oak Grove Avenue would have a commercial FAR of approximately 0.17 and a residential density of approximately 31 units per acre where the Specific Plan would allow a base density of 32 units per acre. Overall, the projects would not result in cumulatively considerable impacts to land use.

Other cumulative developments would expand research-and-development, office and residential uses in surrounding areas. Research-and-development and office projects include the General Motors site, AMB Business Park, and Menlo Business Park projects in the Willow Business Area, the 1283 Willow Road commercial development, and the 2550 Sand Hill Road office. Residential projects include developments at 110 Linfield Drive and 2122 Santa Cruz Avenue. These uses would be consistent with the land use character and existing plans and policies in the

respective areas. In combination with the Specific Plan, they would not create substantial physical barriers that would divide a community. Although they could lead to increased traffic, and associated impacts to air and noise, those cumulative effects are discussed in the applicable sections of this EIR.

Also, although outside of the geographic area for analysis discussed above, the Stanford Medical Center Renewal Project would contribute to cumulative land use changes on a regional level. The project would rebuild facilities to meet seismic standards, modernize and expand the children's hospital to meet family needs, and renovate the Hoover Pavilion to accommodate community physicians whose practices would have to be relocated. Although these changes could affect regional demand for medical office spaces, they are not anticipated to result in a substantial change in land use character, divide an established community, or conflict with established land use plans and policies. To address potential changes in medical office demand in downtown Menlo Park, the Specific Plan limits medical office uses to one-third of the floor area that would otherwise be allowed. This provision would further reduce potential impacts to land use character.

The remaining developments are east of U.S. Route 101. These developments would be located too far from the Specific Plan area to result in cumulatively considerable impacts to land use.

In summary, the Specific Plan, in combination with past, present, and reasonably foreseeable future projects, would not result in cumulatively considerable land use impacts.

Mitigation: None required.

4.10 Noise

This section evaluates potential impacts on ambient noise levels from construction and operation of the proposed Specific Plan. The analysis presented below is based on ambient noise measurements taken in the Specific Plan area and local noise ordinances and regulations set by the City of Menlo Park. This section identifies any potentially significant noise impacts and, if necessary, appropriate mitigation measures.

4.10.1 Noise Background

Sound is mechanical energy transmitted by pressure waves through a medium such as air. Noise can be defined as unwanted sound. Sound is characterized by various parameters that include the rate of oscillation of sound waves (frequency), the speed of propagation, and the pressure level or energy content (amplitude). In particular, the sound pressure level has become the most common descriptor used to characterize the loudness of an ambient sound level. Sound pressure level is measured in decibels (dB), with zero dB corresponding roughly to the threshold of human hearing, and 120 to 140 dB corresponding to the threshold of pain.

Sound pressure fluctuations can be measured in units of hertz (Hz), which correspond to the frequency of a particular sound. Typically, sound does not consist of a single frequency, but rather a broad band of frequencies varying in levels of magnitude (sound power). When all the audible frequencies of a sound are measured, a sound spectrum is plotted consisting of a range of frequency spanning 20 to 20,000 Hz. The sound pressure level, therefore, constitutes the additive force exerted by a sound corresponding to the sound frequency/sound power level spectrum.

The typical human ear is not equally sensitive to all frequencies of the audible sound spectrum. As a consequence, when assessing potential noise impacts, sound is measured using an electronic filter that de-emphasizes the frequencies below 1,000 Hz and above 5,000 Hz in a manner corresponding to the human ear's decreased sensitivity to low and extremely high frequencies instead of the frequency mid-range. This method of frequency weighting is referred to as A-weighting and is expressed in units of A-weighted decibels (dBA).

Noise Exposure and Community Noise

An individual's noise exposure is a measure of the noise experienced by the individual over a period of time. A noise level is a measure of noise at a given instant in time. However, noise levels rarely persist consistently over a long period of time. In fact, community noise varies continuously with time with respect to the contributing sound sources of the community noise environment. Community noise is primarily the product of many distant noise sources, which constitute a relatively stable background noise exposure, with the individual contributors unidentifiable. Background noise levels change throughout a typical day, but do so gradually, corresponding with the addition and subtraction of distant noise sources and atmospheric conditions. The addition of short duration single event noise sources (e.g., aircraft flyovers, motor vehicles, sirens) makes community noise constantly variable throughout a day.

These successive additions of sound to the community noise environment vary the community noise level from instant to instant requiring the measurement of noise exposure over a period of time to legitimately characterize a community noise environment and evaluate cumulative noise impacts. This time-varying characteristic of environmental noise is described using statistical noise descriptors. The noise descriptors used in this analysis are summarized below.

L_{eq}: The equivalent sound level is used to describe noise over a specified period of time, in terms of a single numerical value. The L_{eq} is the constant sound level which would contain the same acoustic energy as the varying sound level, during the same time period (i.e., the average noise exposure level for the given time period).

L_{max}: The instantaneous maximum noise level measured during the measurement period of interest.

L_{dn}: The energy average of the A-weighted sound levels occurring during a 24-hour period, and which accounts for the greater sensitivity of most people to nighttime noise by weighting noise levels at night ("penalizing" nighttime noises). Noise between 10:00 PM and 7:00 AM is weighted (penalized) by adding 10 dBA to take into account the greater annoyance of nighttime noises.

Effects of Noise on People

The effects of noise on people can be placed into three categories:

- subjective effects of annoyance, nuisance, dissatisfaction;
- interference with activities such as speech, sleep, learning; and
- physiological effects such as hearing loss or sudden startling.

Environmental noise typically produces effects in the first two categories. Workers at industrial plants often experience noise in the last category. There is no completely satisfactory way to measure the subjective effects of noise, or the corresponding reactions of annoyance and dissatisfaction. A wide variation exists in the individual thresholds of annoyance, and different tolerances to noise tend to develop based on an individual's past experiences with noise.

Thus, an important way of predicting a human reaction to a new noise environment is the way the new noise compares to the existing noise levels that one has adapted, which is referred to as the "ambient noise" level. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged by those hearing it. With regard to increases in A-weighted noise level, the following relationships occur:

- Except in carefully controlled laboratory experiments, a change of one dBA cannot be perceived;
- Outside of the laboratory, a three dBA change is considered a just-perceivable difference when the change in noise is perceived but does not cause a human response;
- A change in level of at least five dBA is required before any noticeable change in human response would be expected; and

- A 10-dBA change is subjectively heard as approximately a doubling in loudness, and can cause an adverse response.

These relationships occur in part because of the logarithmic nature of sound and the decibel system. A ruler is a *linear* scale: it has marks on it corresponding to equal quantities of distance. One way of expressing this is to say that the ratio of successive intervals is equal to one. A *logarithmic* scale is different in that the ratio of successive intervals is not equal to one. Each interval on a logarithmic scale is some common factor larger than the previous interval. A typical ratio is 10, so that the marks on the scale read: 1, 10, 100, 1,000, 10,000, etc., doubling the variable plotted on the x-axis. The human ear perceives sound in a non-linear fashion; hence the decibel scale was developed. Because the decibel scale is based on logarithms, two noise sources do not combine in a simple additive fashion, rather they combine logarithmically. For example, if two identical noise sources produce noise levels of 50 dBA, the combined sound level would be 53 dBA, not 100 dBA.

Noise Attenuation

Point sources of noise, including stationary mobile sources such as idling vehicles or onsite construction equipment, attenuate (lessen) at a rate of 6.0 to 7.5 dBA per doubling of distance from the source, depending upon the type of ground surface. Widely distributed noises such as a large industrial facility spread over many acres or a street with moving vehicles (a "line" source) would typically attenuate at a lower rate of approximately 3.0 to 4.5 dBA per doubling distance from the source also dependent upon the type of ground surface.[1]

Vibration

Vibration is an oscillatory motion through a solid medium in which the motion's amplitude can be described in terms of displacement, velocity, or acceleration. There are several different methods that are used to quantify vibration. The peak particle velocity (PPV) is defined as the maximum instantaneous peak of the vibration signal. The PPV is most frequently used to describe vibration impacts to buildings. The root mean square (RMS) amplitude is most frequently used to describe the affect of vibration on the human body. The RMS amplitude is defined as the average of the squared amplitude of the signal. Decibel notation (VdB) is commonly used to measure RMS. The decibel notation acts to compress the range of numbers required to describe vibration.[2] Typically, ground-borne vibration generated by man-made activities attenuates rapidly with distance from the source of the vibration.

1 California Department of Transportation (Caltrans). *Technical Noise Supplement*, 1998.
2 Federal Transit Administration (FTA), *Transit Noise and Vibration Impact Assessment (FTA-VA-90-1003-06)*, May 2006.

4.10.2 Environmental Setting

The main contributors to the noise environment in the El Camino Real/Downtown Specific Plan area include roadway noise and noise associated with the nearby Caltrain line. Six 10-minute average noise measurements were taken within the Specific Plan area on July 21, 2009. **Table 4.10-1** presents the L_{eq} and L_{max} for these 10-minute measurements and **Figure 4.10-1** shows the locations at which these measurements were taken. As shown, ambient L_{eq} noise levels in the Specific Plan area were between 56.2 dBA and 60.9 dBA. The predominant noise source was vehicle traffic on nearby roadways.

TABLE 4.10-1
10-MINUTE AVERAGE AMBIENT NOISE LEVELS IN THE STUDY AREA

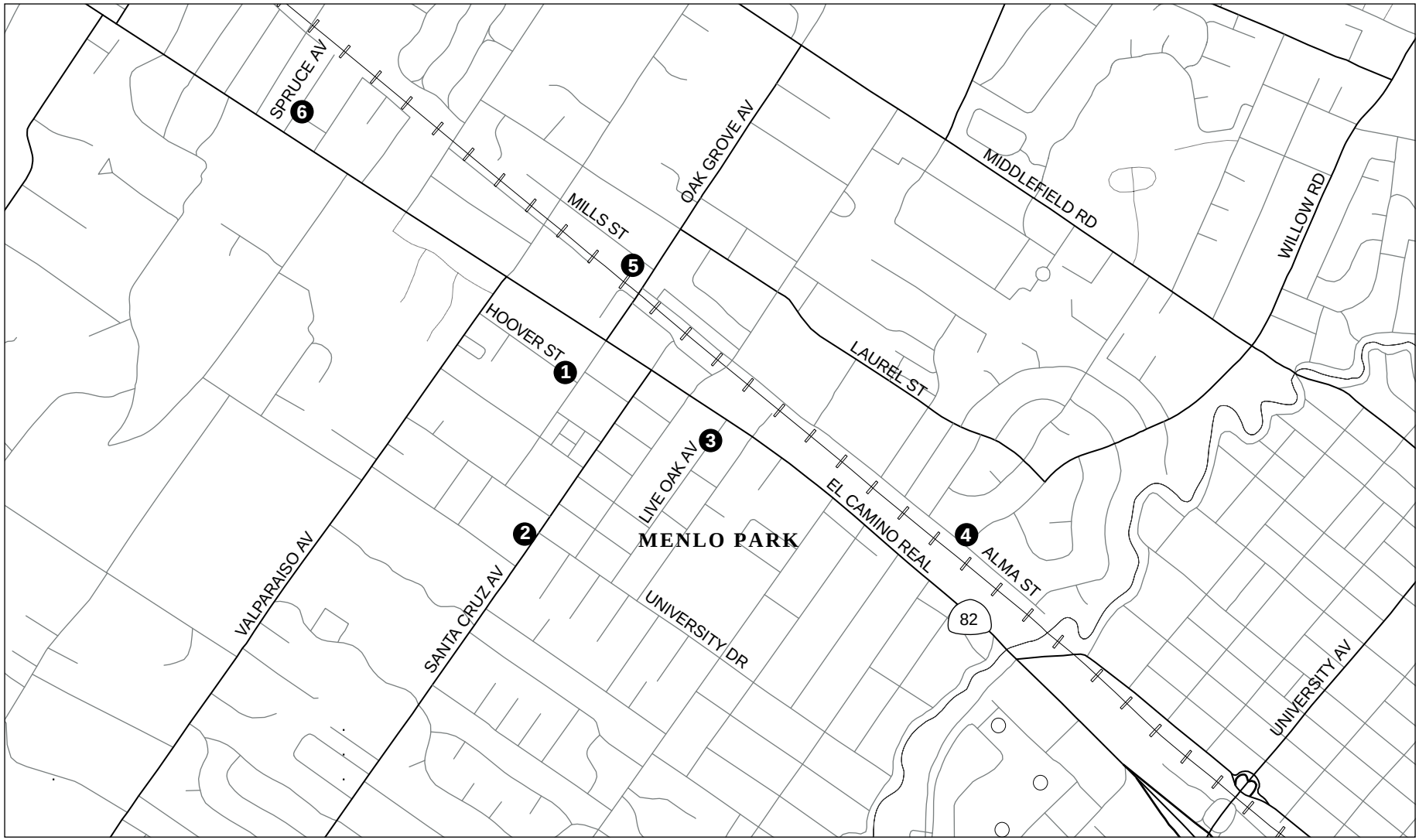
#	Measurement Location	Time	L_{eq}	L_{max}	Description of Noise Sources
1	Hoover Street approximately 100 feet north of Oak Grove Avenue	10:56 AM	59.1	75.1	Vehicle traffic on Oak Grove Avenue and Hoover Street; people talking on the street; trains audible from this location
2	Fremont Park, 50 feet from intersection of Santa Cruz Avenue and University Drive	11:22 AM	59.7	71.8	Vehicle traffic on Santa Cruz Avenue and University Drive; people talking in the distance
3	Live Oak Avenue approximately 100 feet southwest of El Camino Real	11:50 AM	59.0	70.1	Vehicle traffic on El Camino Real primary noise source; people talking in the distance; some vehicle traffic on Live Oak Avenue; trains audible from this location
4	Willow Road approximately 50 feet northeast of Alma Street	12:31 PM	57.6	76.7	Moderate vehicle traffic on Alma Street; helicopter flying overhead; siren in the distance; landscaping equipment in the distance; a few heavy trucks
5	Mills Street approximately 100 feet northwest of Oak Grove Avenue	12:55 PM	56.2	68.9	Vehicle traffic on Oak Grove Avenue; light traffic on Mills Street; trains audible (horn, wheels squealing, crossing gate bell)
6	Spruce Avenue approximately 75 feet northeast of El Camino Real	1:19 PM	60.9	74.5	Traffic on El Camino Real and train noise

NOTE: Short-term (10-minute) measurements were collected on July 21, 2009.

Additionally, noise associated with Caltrain operation was observed at four of the six noise measurement locations. In addition, the following noise sources were observed: pedestrian traffic, birds, wind, people talking/yelling, landscaping equipment and emergency sirens.

Sensitive Receptors

Human response to noise varies considerably from one individual to another. Effects of noise at various levels can include interference with sleep, concentration, and communication, and can cause physiological and psychological stress and hearing loss. Given these effects, some land uses are considered more sensitive to ambient noise levels than others. In general, residences, schools, hotels, hospitals, and nursing homes are considered to be the most sensitive to noise. Places such as



SOURCE: ESA

Menlo Park El Camino Real/Downtown Specific Plan EIR . 208581

Figure 4.10-1
Noise Monitoring Locations

churches, libraries, and cemeteries, where people tend to pray, study, and/or contemplate are also sensitive to noise. Commercial and industrial uses are considered the least noise-sensitive.

The proposed Specific Plan area includes and is surrounded by a number of residential receptors. There are also a number of hotels located along El Camino Real in the project vicinity. Furthermore, the Plan includes plans to develop new multi-family residential and mixed uses, which would add new sensitive receptors to the area.

Churches located within half a mile of the Specific Plan area include: Nativity of the Holy Virgin Church on Crane Street; First Church of Christ, Scientist, Menlo Park Reading Room on Chestnut Street; Chabad Israeli Community Church on Chestnut Street; Menlo Park Presbyterian Church on Santa Cruz Avenue; St. Raymond's Catholic Church on Santa Cruz Avenue; and First Church of Christ, Scientist, Menlo Park on Ravenswood Avenue.

Schools within half a mile of the Specific Plan area include: Menlo School on Valparaiso Avenue; Sacred Heart Preparatory School on Valparaiso Avenue; Saint Raymond's Elementary School on Arbor Road; Kirkhouse Preschool on Santa Cruz Avenue; Lydian Academy on El Camino Real; Menlo-Atherton Cooperative Nursery on Middle Avenue; New Beginnings Preschool on Middle Avenue; Nativity Elementary on Laurel Street; Encinal Elementary on Encinal Avenue; and Menlo-Atherton High School on Middlefield Road. Other sensitive receptors in the project vicinity include the Atherton Library (approximately 1,500 feet northwest of the Specific Plan area) and the Menlo Park Public Library (immediately adjacent to the Specific Plan area on Alma Street near Ravenswood Avenue).

4.10.3 Regulatory Setting

Federal, State, and local agencies regulate different aspects of environmental noise. Federal and State agencies generally set noise standards for mobile sources such as aircraft and motor vehicles, while regulation of stationary sources is left to local agencies. Local regulation of noise involves implementation of general plan policies and noise ordinance standards. Local general plans identify general principles intended to guide and influence development plans; local noise ordinances establish standards and procedures for addressing specific noise sources and activities.

State of California

State regulations include requirements for the construction of new hotels, motels, apartment houses and dwellings (other than detached single-family dwellings, such as are proposed for development in the Plan area) that are intended to limit the extent of noise transmitted into habitable spaces. These requirements are collectively known as the California Noise Insulation Standards and are found in California Code of Regulations, Title 24 (known as the Building Standards Administrative Code). As noted previously, interior residential standards for multi-family dwellings are set by the State of California at 45 dBA L_{dn}. Title 24 standards are enforced through the building permit application process in the City of Menlo Park, as in most jurisdictions.

City of Menlo Park

General Plan

The Noise Element of the City of Menlo Park's General Plan contains goals and policies to help improve the noise environment of Menlo Park. Policies which are applicable to the Plan are listed below.[3]

- Analyze in detail the potential noise impacts of any actions that the city may take or act upon which could significantly alter noise level in the community.

- Consider the compatibility of proposed land uses with the noise environment when preparing or revising community and/or specific plans.

The Noise Element contains land use compatibility guidelines under which the "normally acceptable" noise environment for new residential uses is 60 dBA, L_{dn}. At noise levels between 60 and 70 dBA, L_{dn}, the noise environment is "conditionally acceptable" for residential uses, meaning that new construction should normally be undertaken only following a detailed analysis of noise reduction requirements. Above 70 dBA, L_{dn}, the noise environment is "normally unacceptable" for residences and if new construction does proceed, noise insulation features must be included in the project. The compatibility guidelines contain comparable, but less stringent, standards for development of new commercial uses.[4]

Municipal Code

Chapter 8.06 of the City of Menlo Park Municipal Code sets forth noise standards to protect the peace, health and safety of its citizens from unreasonable noises. According to Section 8.06.030 of this chapter, noise from any source measured at any residential property is considered a noise disturbance if it exceeds noise levels of 50 dBA during nighttime hours or 60 dBA during daytime hours. Furthermore, any and all excessively annoying, loud or unusual noises or vibrations that may offend the peace and quiet of persons of ordinary sensibilities and which interfere with the comfortable enjoyment of life or property shall be considered a noise disturbance.[5]

Construction activities that occur between 8 AM and 6 PM, Monday through Friday are exempt from the noise standards outlined in Section 8.06.030. However, the code does require that a sign be posted at all entrances to the construction site outlining the permitted hours of construction activities. The sign must be placed at least five feet above the ground and must consist of a white background with black letters.[6]

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3 City of Menlo Park, *Noise Element of the Comprehensive General Plan*, prepared by Charles M. Salter Associates, adopted by City Council on November 14, 1978.

4 More recent noise compatibility standards promulgated by the Governor's Office of Planning and Research, in the *State of California General Plan Guidelines* (2003), recommend lower acceptable noise levels for new construction of certain land uses.

5 City of Menlo Park, Municipal Code, Chapter 8.06 Noise, 1999.

6 City of Menlo Park, Municipal Code, Chapter 8.06 Noise, 1999.

Noise from powered equipment used on a temporary, occasional, or infrequent basis operated between the hours of 8 AM and 6 PM, Monday through Friday is also exempt from noise standards set forth in Section 8.06.030. However, the code does prohibit the use of powered equipment that generates noise levels in excess of 85 dBA at 50 feet. Deliveries to food retailers and restaurants are also exempt as are deliveries to other commercial and industrial businesses that occur between the hours of 7 AM and 6 PM, Monday through Friday and 9 AM to 5 PM Saturdays, Sundays, and holidays.[7]

4.10.4 Impacts and Mitigation Measures

Significance Criteria

Implementation of the Plan would be considered to have significant noise impacts if it would:

- Expose people to or generate noise levels in excess of standards established in the local General Plan or noise ordinance, or applicable standards of other agencies;
- Expose people to or generate excessive groundborne vibration or groundborne noise levels;
- Cause a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project;
- Cause a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project;
- For a project located within an airport land use plan area, or, where such a plan has not been adopted, in an area within two miles of a public airport or public use airport, a significant impact would occur if it would expose people residing or working in the area to excessive noise levels; and/or
- For a project located in the vicinity of a private airstrip, a significant impact would occur if the project would expose people residing or working in the Specific Plan area to excessive noise levels.

The nearest airport to the Specific Plan area is the Palo Alto Airport of Santa Clara County. This airport is located over three miles east of the Specific Plan area, therefore it can be assumed that the project would not expose people working or residing in the area to excessive noise levels associated with airport operations. Additionally, there are no private airstrips within the vicinity of the Specific Plan and no impact would occur.

7 City of Menlo Park, Municipal Code, Chapter 8.06 Noise, 1999.

Impacts

Impact NOI-1: Construction activities associated with implementation of the Specific Plan would result in substantial temporary or periodic increases in ambient noise levels in the Specific Plan area above levels existing without the Specific Plan and in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies. (Potentially Significant)

The Specific Plan would allow for development of up to approximately 330,000 square feet of retail and commercial space, 680 residential units, and 380 hotel rooms over a 30-year timeframe. Furthermore, the Specific Plan would include infrastructure improvements such as sidewalk improvements and new bicycle and pedestrian connections.

Construction, although typically short-term, can be a significant source of noise. Construction is most significant when it takes place near sensitive land uses, occurs at night, or in early morning hours. Local governments typically regulate noise associated with construction equipment and activities through enforcement of noise ordinance standards, implementation of general plan policies and imposition of conditions of approval for building or grading permits. **Table 4.10-2** shows typical exterior noise levels at various phases of commercial construction and **Table 4.10-3** shows typical noise levels associated with various types of construction related machinery.

Construction-related activities would temporarily increase ambient noise levels within the Specific Plan area over the duration of construction. Construction-related noise levels within and adjacent to the Specific Plan area would fluctuate depending on the particular type, number, and duration of use of various pieces of construction equipment. The effect of construction noise would depend upon the level of construction activity on a given day, the related noise generated by that activity, the distance between construction activities, the nearest noise-sensitive uses, and the existing noise levels at those uses.

The dominant construction equipment noise source is usually a diesel engine without sufficient muffling. Stationary equipment consists of equipment that generates noise from one general area and includes items such as pumps, generators, compressors, etc. These types of equipment operate at a constant noise level under normal operation and are classified as non-impact equipment. Other types of stationary equipment such as pile drivers, jackhammers, and pavement breakers, etc., produce variable and sporadic noise levels and often produce impact-type noises. Impact equipment is equipment that generates impulsive noise, where impulsive noise is defined as noise of short duration (generally less than one second), high intensity, abrupt onset, rapid decay, and often rapidly changing spectral composition. For impact equipment, the noise is produced by the impact of a mass on a surface, typically repeating over time. Mobile equipment such as dozers, scrapers, graders, etc., may operate with power applied in a cyclic fashion in which a period of full power is followed by a period of reduced power. Other equipment such as compressors, although generally considered to be stationary when operating, can be readily relocated to another location for the next operation. Construction-related noise levels generally fluctuate depending on the construction phase, equipment type and duration of use, distance between noise source and receptor, and presence or absence of barriers between the noise source and receptor.

TABLE 4.10-2
TYPICAL CONSTRUCTION NOISE LEVELS

Phase	Noise Level (L_{eq})[a]
Ground Clearing	84
Excavation	89
Foundations	78
Erection	85
Exterior Finishing	89
Pile Driving	90-105

[a] Estimates correspond to a distance of 50 feet from the noisiest piece of equipment associated with a given phase and 200 feet from the other equipment associated with that phase.

SOURCE: U.S. Environmental Protection Agency, *Noise from Construction Equipment and Building Operations, Building Equipment and Home Appliances*, December 1971

TABLE 4.10-3
TYPICAL MAXIMUM NOISE LEVELS FROM CONSTRUCTION EQUIPMENT

Construction Equipment	Noise Level (dBA, L_{eq} at 50 feet)
Backhoe	80
Rock Drill	98
Air Compressor	81
Dozer	85
Air Compressor	85
Mobile Crane	83
Grader	85
Front End Loader	85
Trucks	88
Cranes	83
Pile Driver (Sonic)	96
Pile Driver (Impact)	101

SOURCE: FTA, 2006.

Noise from construction activity generally attenuates (decreases) at a rate of 6.0 to 7.5 dBA per doubling of distance. Development of new land uses proposed in the Specific Plan could expose nearby residences to noise levels as high as 89 dBA at 50 feet using typical construction methods and up to 105 dBA at 50 feet if pile driving is required. It should be noted that it is unlikely that pile driving would be required to construct new structures within the Specific Plan area, because soils in the Plan area are generally sufficiently competent to support new construction without the need for driven piles.[8] However even without pile driving, noise levels associated with construction would be significantly greater than existing noise levels at nearby receptors.

[8] As indicated in Section 4.5, *Geology, Soils, and Seismicity*, soils subject to liquefaction, which can lose strength when subjected to earthquake-induced groundshaking, are mapped only in the very southerly portion of the Specific Plan area, adjacent to San Francisquito Creek. No substantial new construction is anticipated in this area nearest the creek.

Other than restricting the hours of construction activity, the Menlo Park noise ordinance does not establish any quantitative limits for construction-related noise. Nor are any such limits established in the noise element of the General Plan. In lieu of local regulatory restrictions on construction noise, this analysis uses the general assessment construction noise criteria suggested by the U.S. Department of Transportation.[9] This assessment methodology requires an estimate of the combined noise level from the two noisiest pieces of construction equipment, assuming they both operate at the same time. If this combined noise level exceeds 90 dBA (one-hour L_{eq}) during daytime hours or 80 dBA during nighttime hours at a residential receptor, then it may result in an adverse community reaction. The threshold for commercial and industrial receptors is 100 dBA, regardless of time of day.

Given the variety of land uses in the Specific Plan area, it is reasonable and conservative to assume that construction equipment could be as close as 50 feet to a residence or other sensitive receptor for a given hour. The two noisiest pieces of equipment in Table 4.10-3 likely to be used in standard commercial development project would be an off-road truck (usually used for watering the site) rated at 88 dBA and a front end loader rated at 85 dBA. The combined noise level from these two pieces of equipment would be 90 dBA. This noise level would be considered a significant noise impact during nighttime hours in that it may result in an adverse community reaction.

However, per the City of Menlo Park noise ordinance, construction activities would be limited to less noise sensitive hours of the day (i.e., between 8 AM and 6 PM, Monday through Friday) unless otherwise approved by the City. Additionally, although the estimated noise level does not exceed the daytime standard, it does touch the limit for daytime exposures. Therefore, implementation of Mitigation Measures NOI-1a and NOI-1b are identified to ensure that potential impacts to sensitive receptors within and adjacent to the Specific Plan area would be reduced to less-than-significant levels by requiring implementation of best management practices to reduce noise levels associated with construction equipment.

> **Mitigation Measure NOI-1a:** Construction contractors for subsequent development projects within the Specific Plan area shall utilize the best available noise control techniques (e.g., improved mufflers, equipment redesign, use of intake silencers, ducts, engine enclosures, and acoustically-attenuating shields or shrouds, etc.) when within 400 feet of sensitive receptor locations. Prior to demolition, grading or building permit issuance, a construction noise control plan that identifies the best available noise control techniques to be implemented, shall be prepared by the construction contractor and submitted to the City for review and approval. The plan shall include, but not be limited to, the following noise control elements:
>
> - Impact tools (e.g., jack hammers, pavement breakers, and rock drills) used for construction shall be hydraulically or electrically powered wherever possible to avoid noise associated with compressed air exhaust from pneumatically powered tools. However, where use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust shall be used; this muffler shall achieve lower noise levels from the exhaust by approximately 10 dBA. External jackets on the tools themselves shall be

[9] U.S Department of Transportation, Federal Transit Administration, Transit Noise and Vibration Impact Assessment, May 2006, p.12-7

used where feasible in order to achieve a reduction of 5 dBA. Quieter procedures shall be used, such as drills rather than impact equipment, whenever feasible;

- Stationary noise sources shall be located as far from adjacent receptors as possible and they shall be muffled and enclosed within temporary sheds, incorporate insulation barriers, or other measures to the extent feasible; and

- When construction occurs near residents, affected parties within 400 feet of the construction area shall be notified of the construction schedule prior to demolition, grading or building permit issuance. Notices sent to residents shall include a project hotline where residents would be able to call and issue complaints. A Project Construction Complaint and Enforcement Manager shall be designated to receive complaints and notify the appropriate City staff of such complaints. Signs shall be posted at the construction site that include permitted construction days and hours, a day and evening contact number for the job site, and day and evening contact numbers, both for the construction contractor and City representative(s), in the event of problems.

Mitigation Measure NOI-1b: Noise Control Measures for Pile Driving: Should pile-driving be necessary for a subsequently proposed development project, the project sponsor would require that the project contractor predrill holes (if feasible based on soils) for piles to the maximum feasible depth to minimize noise and vibration from pile driving. Should pile-driving be necessary for the proposed project, the project sponsor would require that the construction contractor limit pile driving activity to result in the least disturbance to neighboring uses.

Mitigation Measure NOI-1c: The City shall condition approval of projects near receptors sensitive to construction noise, such as residences and schools, such that, in the event of a justified complaint regarding construction noise, the City would have the ability to require changes in the construction control noise plan to address complaints.

Significance after Mitigation: Less than Significant.

Although not absolutely required, implementation of Mitigation Measures NOI-1a and NOI-1b would reduce construction noise to ensure that construction noise would not result in an adverse community reaction.

Impact NOI-2: Increased traffic from implementation of the Specific Plan would not result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project. (Less than Significant)

Most of the noise generated once the project is constructed and occupied would primarily be traffic-generated noise. The project would contribute to an increase in local traffic volumes, resulting in higher noise levels along local roadways. Using a spreadsheet based upon algorithms from the Federal Highway Administration's Highway Traffic Noise Prediction Model (FHWA-RD-77-108), traffic noise levels were analyzed for roadway segments that experienced the greatest percentage increase in project traffic when compared to existing traffic volumes along those segments. To assess the significance of the increase in traffic noise due to the project,

roadside peak-hour noise levels have been estimated for existing, existing plus project, and 2035 cumulative conditions with and without the project. Results of the modeling are presented in **Table 4.10-4**. The segments shown in the table would experience the greatest increase in traffic noise due to project traffic.

As shown in Table 4.10-4, the project, upon build-out, would lead to a less than 1 dBA increase in existing modeled noise levels on all roadway segments except one, where the increase due to the project would be 1.1 dBA. As discussed in the setting, noise increases of less than 1 dBA are not perceptible, and, outside of a laboratory, a 3 dBA change is just barely perceptible to humans and does not cause an adverse response. Therefore, it can be assumed that changes in noise levels due to increased roadway traffic would not result in substantial noise level increases that may impact sensitive receptors. Therefore, this would represent a less-than-significant impact.

The noise levels presented in Table 4.10-4 represent the L_{eq} during the peak traffic hour. However, in areas where the noise environment is dominated by traffic noise, the peak hour L_{eq} is roughly equivalent to the L_{dn}[10], the noise descriptor used in the City's General Plan land use compatibility standards. The noise levels in Table 4.10-4 are the noise levels at the roadside and likely exceed those that would be experienced at sensitive receptors. The setback of existing and proposed sensitive receptors in the area, primarily residences, varies.

Using the peak hour roadside noise levels in Table 4.10-4 as a conservative noise exposure analysis, one roadway would experience a change in noise level from one category to the next as a result of the Specific Plan which would occur on Ravenswood Avenue from Alma Street to El Camino Real. As there are no existing residential or other sensitive receptors located along this segment, an increase of noise levels above 70 dBA, L_{dn} along this segment would not represent a significant noise impact.

Mitigation: None required.

Impact NOI-3: The Specific Plan would introduce sensitive receptors to a noise environment with noise levels in excess of standards considered acceptable under the City of Menlo Park Municipal Code. (Potentially Significant)

The Specific Plan would locate new residences near the Caltrain station and mainline tracks, thereby exposing sensitive receptors to excessive noise levels associated with rail noise. Noise levels at 50 feet from the station and mainline tracks were estimated using the methodology set forth in the Federal Transit Administration's *Transit Noise and Vibration Impact Assessment*. Information on train trip frequencies was derived from Caltrain's timetables. In addition, four daily one-way Union Pacific trains pass by the Plan area. The Union Pacific trains are diesel trains with similar attributes as the Caltrain trains.

[10] Caltrans, *Technical Noise Supplement*, November, 2009, p.2-60.

TABLE 4.10-4
TRAFFIC NOISE INCREASES ALONG LOCAL ROADWAYS IN THE PLAN AREA

	Modeled Noise Level at 50 feet from Roadway Centerline (dBA)						
Street Segment	**Existing (2010)**	**Existing + Specific Plan**	**Project Change from Existing**	**Cumulative (2035)**	**Cumulative (2035) + Specific Plan**	**Project Change from Cumulative**	**Plan + Cumulative Change from existing**
Oak Grove Avenue							
Middlefield to Laurel	66.5	66.9	+0.4	67.5	67.8	+0.3	+1.3
Laurel to El Camino	66.2	66.6	+0.4	67.4	67.8	+0.4	+1.6
El Camino to Crane	65.6	66.0	+0.4	66.5	66.9	+0.4	+1.3
Crane to University	64.0	64.6	+0.6	65.0	65.5	+0.5	+1.5
Santa Cruz Avenue							
University to Olive	68.2	68.6	+0.4	69.5	69.8	+0.3	+1.6
Olive to Avy/Orange	68.1	68.6	+0.5	69.4	69.7	+0.3	+1.6
Avy/Orange to Alameda de las Pulgas	66.6	67.1	+0.5	67.7	68.1	+0.4	+1.5
Menlo Avenue							
El Camino to Crane	65.7	66.0	+0.3	68.5	68.6	+0.1	+2.9
Crane to University	64.7	64.8	+0.1	66.1	66.2	+0.1	+1.5
Ravenswood Avenue							
Middlefield to Laurel	68.6	68.9	+0.3	70.2	70.4	+0.2	+1.8
Laurel to Alma	68.9	69.2	+0.3	70.9	71.0	+0.1	+2.2
Alma to El Camino	69.8	70.1	+0.3	71.6	71.8	+0.2	+2.0
University Avenue							
Oak Grove to Santa Cruz	64.6	65.2	+0.6	65.5	66.0	+0.5	+1.4
Santa Cruz to Menlo	65.4	65.7	+0.3	66.8	67.0	+0.2	+1.6
Santa Cruz Avenue							
University to El Camino	64.3	65.0	+0.7	66.0	66.5	+0.5	+2.2
El Camino Real							
Menlo College to Valparaiso	71.0	71.1	+1.1	72.2	72.3	+0.1	+1.3
Cambridge to Sand Hill	71.3	71.9	+0.6	72.5	72.9	+0.4	+1.6
Middlefield Road							
Ringwood to Willow	69.4	69.7	+0.3	70.4	70.7	+0.3	+1.3

SOURCE: Environmental Science Associates, 2010.

Table 4.10-5 presents the estimated daytime and nighttime L_{eq} and L_{dn} at 50 feet from the Caltrain station, the mainline tracks and grade crossings where transit warning horns are sounded, and the mainline tracks without transit warning horns.

TABLE 4.10-5
ESTIMATED NOISE LEVELS FROM CALTRAIN OPERATIONS IN THE PLAN AREA

Source	Daytime Noise L_{eq} at 50 feet	Nighttime Noise L_{eq} at 50 feet	L_{dn} at 50 feet
Caltrain Station	73.5	68.3	76.0
Mainline Track (with horn)	68.8	63.7	71.3
Mainline Track (without horn)	65.6	60.4	68.1

In addition, the Specific Plan would locate new residences near roadways that experience high levels of traffic noise, both under current and projected conditions. Modeled noise levels are shown in Table 4.10-4, estimated at 50 feet from the roadway centerline.

As shown in the tables, both daytime and nighttime noise levels within 50 feet of the Caltrain Station and/or mainline track and local roadway centerlines would exceed the standards set forth in the Menlo Park Municipal Code of 60 dBA L_{eq} and 50 dBA L_{eq}, respectively. Under General Plan land use compatibility standards, noise levels within 50 feet of most roadway centerlines would be considered "conditionally acceptable," while areas within 50 feet of El Camino Real and most areas within 50 feet of the Caltrain Station and/or mainline track would be considered "normally unacceptable."

As is not infrequently the case, these modeled noise levels may be somewhat conservative. Results from a 24-hour noise measurement taken near the San Carlos Caltrain station in 2006 showed a day-night noise level of 71 dB[11] at a location only 20 feet from the railroad track centerline. This measured noise level included two freight trains that passed the site between 12:00 midnight and 2:00 a.m. Because noise attenuates with distance, and conservatively assuming a decrease of 3 dB with each doubling of distance, the measured day-night noise level of 71 db at 20 feet from the tracks would be equivalent to about 67 dB at 50 feet from the tracks, significantly less estimate. Therefore, Table 4.10-5 probably overstates potential future noise levels—including noise from Union Pacific freight train pass-bys—by up to approximately 4 dB.

The Specific Plan would include mixed-use development directly adjacent to the train station. For projects in other parts of the Plan Area, while exact distances to tracks or roadway centerlines would not be determined until specific projects were designed, it can be assumed that residents could be located within 50 feet of the track or roadway centerlines. Mitigation Measure NOI-3 would require detailed acoustical assessments for residential units constructed within the Specific Plan area to ensure that Title 24 interior noise level standards are achieved. Implementation of this measure would reduce impacts to a less-than-significant level. For residential units in noisier

11 *See* Illingworth and Rodkin, Inc., *San Carlos Train Depot Site Noise and Vibration Assessment,* August 8, 2006, Figure 2.

locations, noise mitigation can include the use of double-paned, noise-insulating windows and noise-insulating doors; use of acoustically rated walls (containing additional layer(s) of gypsum board, double studs, and/or the use of resilient channels to reduce noise and vibration), and proper use of sealants to ensure no gaps that could permit noise intrusion.

It is important to note that the Caltrain 2025 Project would provide for the conversion of diesel-hauled to electric-hauled trains, using equipment that would resemble BART trains in that no separate locomotive is used. A Final Environmental Assessment/Environmental Impact Report was published in 2009 and the Federal Transit Administration issued a Finding of No Significant Impact (FONSI) under the National Environmental Policy Act in December 2009. However, the Peninsula Corridor Joint Powers Board, operator of Caltrain, has yet to certify the Final EIR, nor has full funding been identified for the electrification project.

In May 2010, the Federal Railroad Administration granted Caltrain a waiver of a rule prohibiting simultaneous operation of standard diesel-locomotive-powered trains and lighter-weight electric trains. This would allow for a phase-in of electric trains over several years.[12] If electrification of Caltrain proceeds, it would substantially reduce noise levels from Caltrain operations and would reduce the likelihood of impacts to new residential receptors. However, sites that are also close to noisy roadways would still potentially have noise impacts that would be mitigated by Mitigation Measure NOI-3 below.

> **Mitigation Measure NOI-3:** Interior noise exposure within homes proposed for the Specific Plan area shall be assessed by a qualified acoustical engineer to determine if sound rated walls and windows would be required to meet the Title 24 interior noise level standard of 45 dBA, L_{dn}. The results of each study shall be submitted to the City showing conceptual window and wall assemblies with Sound Transmission Class (STC) ratings necessary to achieve the noise reductions for the project to satisfy the interior noise criteria within the noise environment of the Plan area.
>
> **Significance after Mitigation:** Less than Significant.

Impact NOI-4: The Specific Plan would expose sensitive receptors to substantial levels of groundborne vibration. (Potentially Significant)

As discussed above, implementation of the Specific Plan would locate sensitive receptors near the existing Caltrain Station and mainline track. The Federal Transit Administration (FTA) has developed screening distances for vibration impacts associated with conventional commuter railroads. According to these distances, residences and buildings where people normally sleep should be located a minimum of 200 feet from the Caltrain right-of-way.

[12] Peninsula Corridor Joint Powers Board, "Caltrain Passes Key Milestone in Modernization Effort;" News Release, May 28, 2010. Available on the internet at: http://www.caltrain.com/about/News/Caltrain_Passes_Key_Milestone_in_Modernization_Effort.html. Reviewed August 19, 2010.

The FTA also provides guidance regarding allowable vibration levels within close proximity to transit facilities in its *Transit Noise and Vibration Impact Assessment* manual. Where there are between 30 and 70 trains a day, the "Occasional Events" vibration assessment criterion is applicable. For residences, this is 75 dB re: 1 micro-inch/sec (denoted 75 VdB). The comparable standard for institutional daytime uses, such as offices, is 78 VdB.[13] While Caltrain currently operates 86 trains per day, the current proposal for operations in FY 2011-2012 is for a 48-train schedule. Because the FTA vibration thresholds decrease with event frequency, application of the Occasional Events standard provides for a conservative analysis, as it is not certain at this time if and when Caltrain will operate a 70+ train schedule.

Therefore, given that the Specific Plan proposes to develop residences within close proximity to the Caltrain Station and mainline track, impacts would be potentially significant. Mitigation Measure NOI-4 would require that all residential developments included in the Specific Plan within 200 feet of the Caltrain Station and mainline track undergo a detailed vibration analysis to determine the potential for vibration impacts. Implementation of this measure would ensure that impacts would be less than significant.

In the event that Caltrain upgrades to electric powered trains, vibration impacts to nearby residences constructed in the Specific Plan and would likely be reduced. Vibration curves published by the Federal Transit Administration indicate that vibration levels from locomotive powered passenger trains are 10 Vdb or more than light-rail vehicles.

> **Mitigation Measure NOI-4:** Prior to project approval for development within 200 feet of the mainline track, a detailed vibration design study shall be completed by a qualified acoustical engineer to confirm the ground vibration levels and frequency content along the Caltrain tracks and to determine appropriate design to limit interior vibration levels to 75 VdB for residences and 78 VdB for other uses. If required, vibration isolation techniques could include supporting the new building foundations on elastomer pads similar to bridge bearing pads.
>
> **Significance after Mitigation:** Less than Significant.

Cumulative Impacts

Impact NOI-5: Implementation of the Specific Plan, together with anticipated future development in the area in general, would result in a significant increase in noise levels in the area. (Significant)

A cumulative impact arises when two or more individual projects, when considered together, are considerable or which compound or increase other environmental impacts. Cumulative impacts can result from individually minor but collectively significant impacts, meaning that the project's incremental effects must be viewed in connection with the effects of past, current, and reasonably

[13] Federal Transit Administration. *Transit Noise and Vibration Impact Assessment*, FTA-VA-90-1003-06, May 2006, p. 8-3.

foreseeable projects. Notably, any project that would individually have a significant noise impact would also be considered to have a significant cumulative noise impact.

Construction noise is typically a local impact and would affect receptors in the immediate vicinity of the Specific Plan area. Therefore, due to the geographic distribution of the Specific Plan and other approved and foreseeable projects in the area, the same set of receptors are not likely to be affected by construction activities from more than one project. Even if two construction sites are located right next to each other and equidistant from the same set of receptors, the result of two sets of noise sources would be a 3 dBA increase over what would result if there were only one construction site. Noise attenuates rapidly and the construction site nearest to any receptor would have the most impact. Besides, the construction schedules for individual projects constructed under the Specific Plan and other approved projects would vary hence reducing the intensity of the impact. In addition, all construction that would occur under the Specific Plan would be required to implement Mitigation Measure NOI-1, to reduce individual impact to a less-than-significant level. Therefore, the overall cumulative impact due to construction activities and the Specific Plan's contribution to the cumulative impact would both be considered less than significant.

Noise from cumulative development in the area would primarily occur from increases in motor vehicle traffic. Table 4.10-4 shows that modeled 2035 levels (from both cumulative and project traffic) would increase between 1.3 and 2.9 dBA over existing noise levels. While increases in noise levels of less than 3 dBA are normally imperceptible outside a laboratory setting, the additional noise would occur on streets where noise levels now exceed those permitted by the Menlo Park Municipal Code (60 dBA L_{eq}) and which are considered to be "conditionally acceptable" for residential uses under the land use compatibility standards established in the City's General Plan, meaning that new construction should normally be undertaken only following a detailed analysis of noise reduction requirements. Noise would also increase on properties near El Camino Real, which experiences current noise levels above 70 dBA, L_{dn} and is considered under the General Plan's standards to be "normally unacceptable" for residences. Here, if new residential construction does proceed, noise insulation features must be included in the project.

In addition, using the peak hour roadside noise levels in Table 4.10-4 as a conservative noise exposure analysis, three roadway segments would experience a change in noise level from one category to the next as a result of the Specific Plan and cumulative traffic. This would occur on the three segments of Ravenswood Avenue. This change in noise exposure along these roads would occur with or without the project.

Because the project would cumulatively contribute to increased noise levels on roadways where noise levels are currently in excess of standards established in the local noise ordinance, or where mitigation measures should be undertaken, this is a potentially significant impact on new and existing sensitive receptors. Mitigation Measure NOI-3 would reduce cumulative impacts on new sensitive receptors to a level of insignificance. However, no feasible means have been identified to protect existing receptors along roadways where existing noise levels exceed 60 dBA $L_{eq.}$ Typical mitigations such as sound walls are not feasible along surface streets with frequent driveway access.

Rubberized asphalt (also known as "quiet pavement" materials) has the potential to limit traffic noise in some situations, and the City currently employs rubberized asphalt in certain paving projects. To the extent that rubberized asphalt could be incorporated into Plan area streets not currently so paved, it is possible that noise impacts identified in the EIR could be incrementally lessened.

> **Mitigation Measure NOI-5:** The City should use rubberized asphalt in future paving projects within the Plan area if it determines that it will significantly reduce noise levels and is feasible given cost and durability.

It is noted, however, that rubberized asphalt is typically most effective at noise reduction on high-speed roads such as freeways and expressways, because tire noise is a more important component in traffic noise as speeds increase. In addition, while many project-area roads are within the City's jurisdiction, El Camino Real is a Caltrans facility, and the City cannot require utilization of rubberized asphalt or similar quiet pavement materials on this segment. As a result, and because cost, feasibility, and road construction schedules are uncertain, the impact remains significant and unavoidable. Consequently, the cumulative impact of increased traffic noise on existing sensitive receptors is significant and unavoidable.

> **Significance after Mitigation:** Significant and Unavoidable

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Impact NOI-6: Anticipated future development of California's High Speed Rail Project would have the potential to expose sensitive receptors within the Specific Plan area to excessive noise levels and groundborne vibration. (Potentially Significant)

In addition to noise and vibration from existing Caltrain operations, implementation of California's High Speed Rail Project could further increase noise levels in the Plan area by routing high speed trains (HSTs) through the existing Caltrain corridor. Impacts from HSTs in the Specific Plan area were evaluated in the *Bay Area to Central Valley HST Final Program EIR/EIS*. This study rated potential noise and vibration impacts as low, medium, or high based on the severity of the impact relative to the number of receptors that would be affected. Given that the HSTs would travel at reduced speeds through the Specific Plan area, noise impacts were rated as medium despite the high density of receptors. However, vibration impacts near the Specific Plan area were rated as high.[14]

On August 8, 2008, the Town of Atherton, the Planning and Conservation League, the City of Menlo Park, the Transportation Solutions Defense and Education Fund, the California Rail Foundation, and the Bay Rail Alliance filed a lawsuit in the Superior Court for Sacramento County challenging the California High-Speed Rail Authority's actions as being in violation of CEQA. The Court concluded that there were deficiencies in the project description and that the

[14] California High Speed Rail Authority and USDOT Federal Railroad Administration, *Bay Area to Central Valley High-Speed Train (HST) Final Program Environmental Impact Report/Environmental Impact Statement (EIR/EIS)*, May 2008.

Final EIR analysis failed to account for the fact that Union Pacific Railroad would not allow the Authority to use their right-of-way; additionally, the Court held that the Authority's CEQA findings on vibration impacts were not supported by substantial evidence. On March 11, 2010, a Revised Draft Program EIR was circulated in response to this court ruling; however no changes were made to the vibration analysis given that the Court ruling did not find fault in the analysis but rather identified a contradiction between the analysis in the program EIR and the conclusions in the July 2008 CEQA findings.[15]

Based on the findings of the *Bay Area to Central Valley HST Final Program EIR/EIS*, it can be assumed that potential noise and vibration impacts from implementation of the High Speed Rail Project in conjunction with existing noise and vibration levels from Caltrain operations could result in a significant impact to receptors constructed in the Specific Plan area. However, implementation of the High Speed Rail Project would facilitate electrification of the Caltrain system, and would potentially help reduce existing noise levels from Caltrain operations. Furthermore, implementation of Mitigation Measures NOI-3 and NOI-4 would ensure that noise and vibration impacts to new receptors constructed under the Specific Plan would be less than significant.

Significance after Mitigation: Less than Significant.

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15 California High Speed Rail Authority, *Bay Area to Central Valley High-Speed Train (HST) Revised Draft Environmental Impact Report Materials*, March 2010.

4.11 Population and Housing

This section evaluates the population, employment and housing-related effects of the El Camino Real/Downtown Specific Plan. Potential impacts that would result from implementation of the Specific Plan are identified. This section also contains a discussion of the consistency of the Specific Plan with relevant housing and land use policies.[1]

4.11.1 Environmental Setting

The following setting identifies existing conditions and projected future trends for the Plan area, the City of Menlo Park and San Mateo County. The citywide and regional context for population, employment, and housing is also presented, along with identification of the relationship between jobs and housing. Association of Bay Area Governments (ABAG) data is the primary data source for the environmental setting. ABAG is the regional planning agency for the nine counties and 101 cities and towns of the San Francisco Bay region. In addition, supplemental data from the United States Census (U.S. Census), California Department of Finance (DOF) and California Employment Development Department (EDD) is also provided. While U.S. Census data provides the baseline statistical data, information for communities such as Menlo Park is only collected during the nationwide Census performed every ten years. As a result, the most current actual Census count data is for 2000.

Population and other demographic estimates amongst California agencies frequently differ slightly due to their specific date as well as the jurisdiction or population they may represent. In addition, differences in the methodology and purpose for the estimates can result in minor variances in their estimates. ABAG data is used as the primary data source since it provides the future demographic and economic projections for the entire Bay Area that are most consistent and applicable for evaluating the City's currently expected future socioeconomic conditions.

The Plan area is located within the City of Menlo Park in San Mateo County. Menlo Park is situated approximately 30 miles south of San Francisco and approximately 20 miles north of San Jose. Located on the San Francisco Peninsula within the southern part of San Mateo County, the City's south border is marked by Palo Alto, Stanford University and East Palo Alto. San Francisco Bay lies to the East while the city's western border is marked by Ladera, Portola Valley and Woodside. Redwood City and Atherton are located north of Menlo Park. Menlo Park's incorporated area encompasses a total of 11,680 acres or approximately 18 square miles. However, nearly 12 square miles of this area is made up of the San Francisco Bay and wetlands. In addition, several additional unincorporated areas adjoining the City are recognized as being within Menlo Park's sphere of influence and as such are included in the city's General Plan. In California, "sphere of influence" has a legal meaning as a plan for the probable physical boundaries and service area of a local agency. Spheres of influence at California local agencies are regulated by Local Agency Formation Commissions (LAFCO) and as such recognize the unincorporated communities that would be best and most likely served by the city agencies and

[1] Policy conflicts only constitute a significant environmental impact if they would result in physical impacts.

hence, represent areas with the greater potential for annexation by the City. In most cases, ABAG provides more detailed demographic and employment projections for city's sphere of influence than for small cities such as Menlo Park. Consequently, unless otherwise specifically noted, all Menlo Park data represents the Menlo Park sphere of influence since only limited demographic data is available for the City's incorporated area.

The sphere of influence designation for the City of Menlo Park includes unincorporated West Menlo Park, Week End Acres, Menlo Oaks, as well as the Stanford Linear Accelerator (SLAC). With the exception of SLAC, these areas are zoned residential and are substantially developed.[2]

The Plan area is located along El Camino Real from Watkins Avenue in the northwest to San Francisquito Creek in the southeast. It extends east to the Caltrain right-of-way and around the Caltrain Menlo Park Station, and it extends west along Oak Grove Avenue, Santa Cruz Avenue, and Menlo Avenue to approximately University Drive. El Camino Real is designated as SR 82 and is one of the primary arterial roadways and commercial corridors of the San Francisco Peninsula, extending from Mission Street in San Francisco to The Alameda in Santa Clara, near San Jose International Airport. Caltrain is the major commuter rail line serving the San Francisco Peninsula, and it connects Menlo Park with San Francisco to the north and San Jose and Gilroy to the south.

Population

Key demographic data and projections for Menlo Park, San Mateo County and the Bay Area Region are presented in **Table 4.11-1**. The information in the Table is from the ABAG Projections 2009. The information is based on Menlo Park's jurisdictional boundaries plus its sphere of influence. According to Projections 2009, the City of Menlo Park/sphere of influence is estimated to have had a population of 35,200 in 2005 and its 2010 population is estimated to be 36,200. The California Department of Finance's most recent population data estimates that the City of Menlo Park's jurisdictional population was 32,185 in January 2010. Over the last decade, the City's population has been relatively unchanged partly due to the economic downturn of the dot-com industry between 2000 and 2005 when the entire region experienced sharp declines in employment rates and significant out migration.[3]

ABAG projects a 14.9 percent increase in the City/sphere of influence's population between 2010 and 2030. During this same period, the County of San Mateo's population is expected to grow 17.7 percent while the entire Bay Area region population is projected to increase by 18.8 percent. The lower growth projections for San Mateo and Menlo Park largely reflect these areas' more limited developable land resources. ABAG expects that most of the County's future population

[2] San Mateo County Local Agency Formation Committee (LAFCO), *Municipal Service Review and Sphere of Influence Update for City of Menlo Park*. http://www.co.sanmateo.ca.us/Attachments/lafco/pdfs/2009-07-07msrmp.pdf, September 2009.

[3] State of California, Department of Finance, *E-5 Population and Housing Estimates for Cities, Counties and the State, 2001-2009, with 2000 Benchmark. Sacramento, California, May 2009.*

TABLE 4.11-1
KEY POPULATION, EMPLOYMENT AND HOUSING CHARACTERISTICS FOR MENLO PARK AND SAN MATEO COUNTY: 2005-2030

	2005	2010	2015	2020	2025	2030	2010-2030 Change	2010-2030 %
Total Population								
Menlo Park[a]	35,200	36,200	37,900	39,300	40,600	41,600	5,400	14.9%
San Mateo County	721,900	733,300	766,900	801,300	832,400	862,800	129,500	17.7%
Total Bay Area[b]	7,096,500	7,341,700	7,677,500	8,018,000	8,364,900	8,719,300	1,377,600	18.8%
Households								
Menlo Park[a]	14,180	14,630	15,160	15,710	16,260	16,810	2,180	14.9%
San Mateo County	260,070	264,400	275,680	287,350	299,220	310,970	46,570	17.6%
Total Bay Area[b]	2,583,080	2,667,340	2,784,690	2,911,000	3,039,910	3,171,940	540,600	18.9%
Jobs								
Menlo Park[a]	28,820	29,400	29,850	30,390	33,450	36,640	7,240	24.6%
San Mateo County	337,350	346,320	373,370	404,400	439,850	473,290	126,970	36.7%
Total Bay Area[b]	3,449,640	3,475,840	3,734,590	4,040,690	4,379,900	4,738,730	1,262,890	36.3%
Employed Residents								
Menlo Park[a]	15,260	16,520	17,180	18,810	20,170	21,510	4,990	30.2%
San Mateo County	318,600	330,700	364,700	379,300	408,600	437,200	106,500	32.2%
Total Bay Area[b]	3,225,100	3,410,300	3,633,700	3,962,800	4,264,600	4,547,100	1,136,800	25.0%
Ratio Jobs-to-Employed Residents								
Menlo Park[a]	1.88:1	1.78:1	1.74:1	1.62:1	1.66:1	1.70:1		
San Mateo County	1.06:1	1.05:1	1.02:1	1.07:1	1.08:1	1.08:1		
Total Bay Area[b]	1.07:1	1.02:1	1.03:1	1.02:1	1.03:1	1.04:1		
Employed Residents as Percent of Population								
Menlo Park[a]	43.4%	45.6%	45.3%	47.9%	49.7%	51.7%		
San Mateo County	44.1%	45.1%	47.6%	47.3%	49.1%	50.7%		
Total Bay Area[b]	45.4%	46.5%	47.3%	49.4%	51.0%	52.1%		

[a] Population, housing and employment data is for Menlo Park's sphere of influence which includes unincorporated areas of San Mateo County adjoining its municipal jurisdiction.
[b] Total Bay Area includes all nine Bay Area Counties (i.e., Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano and Sonoma Counties).

SOURCES: Association of Bay Area Governments (ABAG), *Projections 2009*, December, 2009.

growth will occur as a result of intensified development along the El Camino corridor, particularly within areas adjacent to the Caltrain line.[4]

In 2005, Menlo Park/sphere of influence's average household size is estimated to have been approximately 2.48 persons, which was considerably smaller than the County average of 2.78 persons per household. The City average household size in 2010 is projected to be 2.47 persons per household. Lower household sizes are typically representative of more affluent and established residential communities. Menlo Park's average household size is one of the lowest within San Mateo County. Given the City's older and more affluent population with a lower number of children per household, Menlo Park's household size is expected to remain unchanged for the foreseeable future.

Employment

Employment data and projections for Menlo Park, San Mateo County and the Bay Area Region are also presented in Table 4.11-1. Menlo Park is located within Silicon Valley. As a result, during the mid and late 1990s the City enjoyed major growth in high technology and financial sector jobs. During that period, both San Mateo County and San Francisco experienced a period of high employment and real wage growth. Following the downturn in the dot-com industry during mid-2000 and 2001, there was a major contraction in employment throughout the entire region. While employment levels began to recover during the years following the "dot-com bust", more recently employment has declined as unemployment rates have increased following the onset of the mortgage crisis and ensuing recession that started in 2007.

Current projections by ABAG foresee gradual employment growth for both Menlo Park and San Mateo County. The City's future job growth is projected to be just over one percent per year. The County's future job growth is expected to occur at a comparable rate of approximately 1.5 percent per year and San Mateo County is expected to re-attain its 2000 employment levels by 2015. However due to the severity of Menlo Park's job losses in 2001, future employment in the City is not expected to return to 2000 levels until after 2025.[5]

In 2005, the financial and professional services industries was the largest employment sector within Menlo Park and it provided approximately 40 percent of the city's jobs. While the manufacturing, wholesale and transportation employment decreased from its 2000 levels, it remains the second largest employment sector in Menlo Park and it provides approximately 21 percent of employment opportunities within the city. Health care, educational and recreational service jobs represent nearly 20 percent of the city's total employment while retail jobs account for about 6 percent of local employment. Other industries account for roughly 12 percent of remaining employment by a variety of other local industries and businesses.

ABAG projects that the financial and professional services sector will remain Menlo Park's largest employment sector and will account for a similar proportion of the City's jobs in 2010.

4 Association of Bay Area Governments (ABAG), *Projections 2009*, December, 2009.
5 Association of Bay Area Governments (ABAG), *Projections 2009*, December, 2009.

Manufacturing, wholesale and transportation employment in Menlo Park is projected to be nearly unchanged and the sector is expected to remain the second largest employment sector closely followed by the health care, educational and recreational service sector. By 2030, future job growth in Menlo Park is expected to add 7,240 new jobs locally—resulting in projected total employment levels of 36,640. This job growth would represent an increase of nearly 25 percent to Menlo Park's 2010 employment conditions. The future employment within the city is expected to be relatively unchanged from its current job sector distribution.

While the employment data identifies the number of people employed within Menlo Park, the "employed residents" category represents the number of City residents that have jobs, although most work at a location outside of Menlo Park. As shown in Table 4.11-1, ABAG estimates that 15,260 Menlo Park residents had jobs in 2005, which was approximately 43.4 percent of the total population. Future job growth and demographic changes are expected to increase the proportion of employed residents in Menlo Park to nearly 50 percent by 2025.

Table 4.11-2 shows the place of employment for Menlo Park's residents who have jobs. Most of Menlo Park's residents work at locations widely dispersed through the Peninsula, San Francisco and beyond. Although nearly a third of Menlo Park residents are employed locally within the City, Palo Alto or at Stanford University, only 12 percent of city residents currently live and work in Menlo Park itself. This share is relatively low compared to most other cities in the Bay Area and is attributed to a range of factors: affordability constraints that limit workers' ability to find housing within the City, the comparative large number of jobs within Menlo Park compared to its housing supply and the increasing propensity by Bay Area workers to commute.[6]

TABLE 4.11-2
MENLO PARK RESIDENTS' PLACE OF EMPLOYMENT

Place of Work	Menlo Park Residents (percentage)
Palo Alto	14%
Menlo Park	12%
Stanford	6%
San Jose	6%
Redwood City	6%
San Francisco	6%
Mountain View	5%
Sunnyvale	4%
Santa Clara	4%
San Mateo	3%
Other Locations	34%

SOURCE: Strategic Economics, 2009b.

6 Keyser Marston Associates, *Housing Needs Analysis Bohannon Office / Hotel Mixed Use Project,* June 2009.

Typically, Menlo Park residents' incomes are relatively high—the median family income in the city averaged $134,241 between 2005 and 2007. By comparison, median family incomes for San Mateo County and California residents were $94,517 and $66,420 respectively.[7]

Housing

The 2000 Census identified 30,785 people living within Menlo Park and 12,714 housing units within the city (see **Table 4.11-3**). Of the occupied housing units (12,387), 57 percent were owner-occupied and 43 percent renter-occupied.

TABLE 4.11-3
HOUSING STOCK IN MENLO PARK, 2000

	2000	
Total Housing Units	12,714	
Occupied Housing Units	12,387	97.4%
Vacant Housing Units	327	2.6%
Owner-occupied Housing	7,153	57.0%
Renter-occupied Housing	5,332	43.0%

NOTES: Housing data for City of Menlo Park not including unincorporated areas within the Menlo Park sphere of influence

SOURCE: U.S. Census, 2000.

According to ABAG, its household estimates represent occupied dwelling units. As shown in Table 4.11-1, ABAG estimates that in 2010 there are 14,630 occupied housing units within Menlo Park's sphere of influence and it projects that by 2030 there will be an additional 2,180 new homes resulting in a total housing supply of 16,810. The difference between the numbers presented by the U.S. Census and ABAG Projections 2009 are due to both the different years on which the data is based and the exclusion of the sphere of influence in the U.S. Census data and its inclusion in the ABAG data. Overall, the future housing/household growth rate for Menlo Park plus its sphere of influence is expected to be lower than the 17.6 percent growth projected county-wide in San Mateo and the 18.9 percent for the entire Bay Area region.

Housing prices in the Bay Area are among the highest in the country and San Mateo County has several of the most expensive residential communities in the Bay Area. Menlo Park is one of the more desirable communities within the county and as a result, home prices exceed the county levels. Most home prices in the Bay Area peaked in mid 2006 at which point the comparable median home price within San Mateo County was $770,000 and in Menlo Park median home prices were $782,500.

7 U.S. Census Bureau, *American Factfinder*, Census 2000 available at http://factfinder.census.gov/home/saff/, 2010.

In recent years following the mortgage crisis and economic downturn, throughout most of California home prices have decreased significantly from their peak values in mid-2006. Within most of the Bay Area, home value losses have been less severe except for the more suburban outlying areas of the region. While there has been some home price declines, in the more affluent communities of the Bay Area (such as San Francisco, San Mateo, and Marin) home values nonetheless remain relatively high and comparatively stable as a smaller proportion of homeowners have been forced to sell their homes as a result of mortgage financing difficulties. Within Menlo Park, median home values actually continued to appreciate until mid 2008 and have subsequently decreased. In 2009, the median price for new and existing homes in San Mateo County averaged $580,000 and $1,007,500 in Menlo Park. Most recent estimates for home values in May 2010 estimated that the median price for new and existing homes in San Mateo County averaged $600,000 and $959,000 in Menlo Park.[8]

The major land uses surrounding the Plan area are institutional and residential. The Plan area itself contains a relatively limited amount of housing, although a few residential and mixed-use buildings are present in certain parts of the Plan area.

4.11.2 Regulatory Setting

This section discusses the local policies relevant to population and housing. In addition, applicable plans and polices related to land use, transportation and circulation, noise, and other environmental categories are discussed in other relevant sections of this Draft EIR.

Menlo Park General Plan

Goals and Policies

Several goals and policies of the General Plan apply broadly to land use and development across the City. The land use and housing element goals and policies specifically relevant to population and housing for the Specific Plan are discussed below.[9] Applicable policies of other elements are discussed in the relevant sections of this Draft EIR.

The Land Use Element of the City of Menlo Park General Plan (1994) contains the following applicable goals and policies with regard to population and housing.

Residential

Goal I-A: To maintain and improve the character and stability of Menlo Park's existing residential neighborhoods while providing for the development of a variety of housing types. The preservation of open space shall be encouraged.

- *Policy I-A-1*: New construction in existing neighborhoods shall be designed to emphasize the preservation and improvements of the stability and character of the individual neighborhoods.

8 Dataquick, *California Home Sales Activity by City, 2006 to 2010 Data*. July, 2010.
9 City of Menlo Park, *General Plan Policy Document*, adopted November 30 and December 1, 1994.

- *Policy I-A-2*: New residential developments shall be designed to be compatible with Menlo Park's residential character.

- *Policy I-A-3*: Quality design and usable open space shall be encouraged in the design of all new residential developments.

- *Policy I-A-4*: Residential uses may be combined with commercial uses in a mixed use project, if the project is designed to avoid conflicts between the uses, such as traffic, parking, noise, dust, and odors.

- *Policy I-A-5*: Development of housing, including housing for smaller households, is encouraged in commercially zoned areas in and near downtown. (Downtown is defined as the area bounded by Alma Street, Ravenswood Avenue / Menlo Avenue, University Drive and Oak Grove Avenue.) Provisions for adequate off-street parking must be assured.

- *Policy I-A-6*: Development of residential uses on the north side of Oak Grove Avenue and on the south side of Menlo Avenue adjacent to the downtown commercial area is encouraged.

- *Policy I-A-8*: Residential developments of ten or more units shall comply with the Requirements of the City's Below-Market Rate (BMR) Housing Program.

Commercial

Goal l-B: To strengthen downtown as a vital and competitive shopping area while encouraging the preservation and enhancement of downtown's historic atmosphere and character.

- *Policy I-B-1*: The downtown should include a complementary mix of stores and services in a quality design, adding natural amenities into the development pattern.

- *Policy I-B-2*: Parking which is sufficient to serve the retail needs of the downtown area and which is attractively designed to encourage retail patronage shall be provided.

- *Policy I-B-4*: Uses and activities shall be encouraged which will strengthen and complement the relationship between the Transportation Center and the downtown area and nearby El Camino Real corridor.

Goal l-C: To encourage creativity in development of the El Camino Real Corridor.

- *Policy I-C-1*: New and upgraded retail development shall be encouraged along El Camino Real near downtown, especially stores that will complement the retailing mix of downtown. Adequate parking must be provided and the density, location, and site design must not aggravate traffic at congested intersections. The livability of adjacent residential areas east and west of El Camino Real and north and south of downtown must be protected.

- *Policy I-C-2*: Small-scale office shall be allowed along most of El Camino Real in a balanced pattern with residential or retail development.

Housing Element

The following relevant policies are included in the City's Housing Element:

Goal III-A: To promote the development of a balanced range of housing types and densities for all economic segments and all geographic areas of the community.

- *Policy III.A.4:* The City will promote the development of housing on appropriate City-owned land.

- *Policy III.A.5:* The City will promote development of mixed-use medium or high-density residential and commercial projects in the Central Business District and along El Camino Real as a means of providing more housing on job sites to help offset the impact of new employment on the regional housing market.

- *Policy III.A.6:* The City will explore the feasibility of using air rights in parking plazas in the Central Business District as a means of creating more housing opportunities in the city. The use of air rights in parking plazas must not result in the loss of parking and should increase the supply of parking beyond that needed for any new housing created.

- *Policy III.A.8:* The City will continue to require residential developers to contribute to the provision of below market rate housing opportunities in the city.

- *Policy III.A.9:* The City will continue to require developers of employment-generating commercial and industrial developments to contribute to the provision of below market rate housing opportunities in the city.

- *Policy III.A.10:* The City will increase the supply of land available for residential development by redesigning and rezoning targeted residential and non-residential parcels for multi-family residential use, particularly near public transit and major transportation corridors in the city.

- *Policy III.A.11:* The City will promote the distribution of new higher-density residential developments throughout the city, taking into consideration compatibility with surrounding existing residential uses, particularly near public transit and major transportation corridors in the city.

State Housing Element Law requires cities in California to plan for the future development of adequate new housing units to meet their share of their regional housing needs. ABAG is ultimately responsible for determining the share of regional housing needs to be met by each city in the Bay Area. State housing law has established four housing affordability categories. The categories are based on the region's median income, taking into account households ranging in size from one to six people. These four affordability categories are used by ABAG in allocating regional housing needs and are as follows:

- *Very Low* – 0 to 50 percent of the area's median income
- *Low* – 50 to 80 percent of the area's median income
- *Moderate* – 80 to 120 percent of the area's median income
- *Above Moderate* – over 120 percent of the area's median income

During the most recent allocation process, San Mateo County elected to manage its own "sub-regional" allocation process. In May 2008, ABAG adopted the County's proposed allocation Under this allocation, Menlo Park is required to identify sites for 993 total housing units, including

sites that could accommodate about 390 units affordable to lower income households. Developable sites zoned at 30 units per acre or more are generally considered to be suitable for lower income households.

4.11.3 Impacts and Mitigation Measures

Significance Criteria

Implementation of the Plan would have a significant impact on population and housing if it would:

- Displace a substantial number of existing housing units or people, necessitating the construction of replacement housing elsewhere; and/or
- Induce substantial population growth in an area either directly or indirectly.

Impacts

Impact POP-1: The project would not displace existing housing or people such that construction of replacement facilities elsewhere would be required. (Less than Significant)

The proposed Specific Plan is intended to be implemented gradually over the next 30 years. The rate and type of development would be primarily determined by the private sector and would occur predominantly as market demand and individual property owners choose to sell or redevelop their properties. If existing housing units are removed, subsequent redevelopment under the Specific Plan would likely include new residential development that would replace any lost units and add additional housing in the Plan area. The majority of the opportunity sites identified as likely redevelopment sites are in commercial use or vacant, with fewer than 25 dwelling units located on these parcels. Since more units would be built than would be demolished, construction of replacement housing outside the Specific Plan area would not be required. The permitted residential development would also assist the City in meeting its share of regional housing needs. Because residences are to be permitted at 30 units per acre and more, the sites so zoned would be considered to be suitable for lower income housing. In addition, residential development would be required to comply with the City's existing affordable housing ordinance, which requires between 10 to 15 percent of new residences to be affordable to very low-, low- and moderate-income households. Consequently, the Specific Plan would not cause growth elsewhere from the displacement of existing residents within the Plan area.

Therefore, the Specific Plan would have a less-than-significant effect in requiring construction of replacement facilities outside the Plan area.

Mitigation: None required.

Impact POP-2: The project would not induce substantial population growth, either directly by proposing new housing, or indirectly through infrastructure improvements and job growth. (Less than Significant)

Market and demographic analysis performed by Strategic Economics determined that there is strong potential for new housing development within the Plan area to meet existing housing demand from several population groups. The Plan area's proximity to employment centers, regional transportation options, educational institutions and downtown Menlo Park's retail can be expected to be attractive to a variety of groups including professionals, students and seniors. A wide range of demographic and household types would likely be attracted to new housing given the area's strong school system, good community facilities, village-like community atmosphere and central location.[10]

Strategic Economics derived a household size of 2.38 persons per household based on the weighted average of owner and renter average household size in Menlo Park as of the 2000 Census. Renters are generally a good proxy for average household size for multi-family units, but Strategic Economics determined that Menlo Park's average renter household size of 2.01 persons per household was too low given information from developers suggesting that families are also moving into recently built condominiums in the City. Furthermore, given the relatively high price point for new, market-rate housing in Menlo Park and nearby areas, compared with the older multi-family units appearing in the Census, it may be expected that households will generally be older and/or wealthier than current renters. Consequently, if full build out of the Specific Plan occurs, the future residential population is estimated to be 1,537 new residents.[11] As shown in Table 4.11-1, ABAG projects that the Menlo Park plus its sphere of influence's population is projected to be 41,600 in 2030, an increase of 5,400 from the current 2010 population.[12] The Specific Plan's growth of 1,537 new residents would represent approximately 28.5 percent of the expected future City plus its sphere of influence population growth over this timeframe.

Consequently, the Specific Plan proposed housing development would not be expected to result in population growth beyond that already projected in ABAG's published reports.

In addition to the new housing, full build out of the Specific Plan could result in a total net increase of approximately 332,000 square feet of new retail and commercial development. Also, 380 rooms of new hotel lodging are projected to be developed. The total future employment

[10] *Strategic Economics, Menlo Park Downtown and El Camino Real Specific Plan – Market Study, May 2009.*
[11] *Strategic Economics, Menlo Park Downtown and El Camino Real Specific Plan – Fiscal Impact Analysis, November 2009.*
[12] ABAG's population projections are for the Menlo Park sphere of influence (i.e. also includes some adjoining unincorporated communities) and consequently the population estimate is approximately 10.6 percent higher than the Department of Finance estimate for solely the City of Menlo Park. Only ABAG generates future population, housing and job projections for cities within the Bay Area. Therefore, its reported projections are used for the impact analysis. If the future growth is assumed to occur evenly throughout the sphere of influence (which is unlikely given that most of the under-utilized areas are located within the City), the expected City population growth would be approximately 4,878 (i.e. 90.3% of 5,400) and the Specific Plan related population growth if full built out occurs would still represent less than 32% of the expected future City population growth.

growth associated with the proposed new retail, commercial, and hotel development is estimated to be 1,357.[13]

As shown in Table 4.11-1, in 2030, the Menlo Park plus its sphere of influence employment is projected to be 36,640 jobs[14] – an increase of 7,240 from the current 2010 employment. If fully built out, the Specific Plan projected related job growth of 1,357 new jobs would represent approximately 17 percent of the City's expected future job growth. If full build-out occurs, the Specific Plan's new housing unit total of 680 can be expected to have a similar number of employed residents per household as is projected for the overall Menlo Park population in 2030 (1.28 employed residents per household). This would result in a new employed resident population of 870 for the Specific Plan. For the Specific Plan, the ratio of new jobs (1,357) to the new employed resident population (870) would be 1.56, below the overall ratio for 2030 Menlo Park plus its sphere of influence of 1.70. Both figures would be below the current ratio of 1.78, indicating an improvement in the ratio of jobs and housing. In addition, this analysis is conservative and potentially understates the number of employed residents per household, given that most new housing in the Plan area would be multi-family attached residences, which typically generate higher ratios of employed residents per household in comparison to single-family detached residences. Consequently, the Specific Plan's proposed retail and commercial development would not be expected to result in substantial unanticipated indirect population growth from increased local employment.

The Plan area is located within the City's existing retail and service areas and as such is currently served by urban infrastructure, services and transit options. Individual elements of infrastructure may need to be upgraded or expanded on a project-by-project basis, but no new infrastructure would be extended to undeveloped areas, and consequently the Specific Plan would not require infrastructure improvements resulting in substantial indirect population growth.

Overall, the Specific Plan is not expected to induce growth in excess of current projections either directly or indirectly. Consequently, the Specific Plan would have a less-than-significant impact on the City of Menlo Park's population and housing.

Mitigation: None required.

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[13] *Strategic Economics, Menlo Park Downtown and El Camino Real Specific Plan – Fiscal Impact Analysis, November 2009 with September 2010 clarification by Strategic Economics.*

[14] ABAG's job projections are for the Menlo Park sphere of influence (i.e. also includes some adjoining unincorporated communities) and based on their population estimate is approximately 10.6 percent higher than the Department of Finance estimate for solely the City of Menlo Park. Only ABAG generates future population, housing and job projections for cities within the Bay Area. Therefore, its reported projections are used for the impact analysis. If the future job growth is assumed to occur evenly throughout the Menlo Park sphere of influence (which is unlikely given that most of the under-utilized areas are located within the City and except for the SLAC the unincorporated communities are mostly residential), the expected City job growth would be conservatively assumed to be approximately 6,790 and the Specific Plan related job growth if full built out occurs would still represent less than 20% of the City's expected future job growth.

Cumulative Impacts

Impact POP-3: Implementation of the Menlo Park El Camino Real/Downtown Specific Plan, in combination with other past, present, and reasonably foreseeable future plans and projects, would not result in cumulatively considerable impacts to population and housing. (Less than Significant)

As shown in Table 4-1, there are pending and approved projects which if constructed would be expected to add 403 net new housing units. Assuming an average of 2.38 residents per unit (consistent with the City's current average household size and Strategic Economics projections for future Specific Plan residential growth), future additional population growth of up to 959 new residents may be expected.[15]

As discussed above under POP-1, the future residential population growth by 2030 after full buildout of the Specific Plan is estimated to be 1,537. Therefore, combined with the 959 new future residents currently expected to live in approved or proposed residential projects, the cumulative housing growth impact would be up to 2,496 new residents.

As shown in Table 4.11-1, in 2030, Menlo Park's sphere of influence population is projected to be 41,600 – an increase of 5,400 from the current 2010 population. In which case, the cumulative growth of the Specific Plan and other foreseeable projects of 2,496 new residents would represent approximately 46.2 percent of the City's expected future population growth. Such growth is consistent with the most recent ABAG projections.

Consequently, the Specific Plan projected housing development would not be expected to result directly in substantial unanticipated population growth.

As shown in Table 4-1, there are office, retail and other commercial development projects approved/pending within Menlo Park. The total net new office square footage for these various office and research/development projects is approximately 1,200,000 square feet.

The largest of the pending projects is the Menlo Gateway Project (which has been approved by the City Council and by the voters in the November 2010 election), which would construct a 230-room hotel, 69,467 square feet of new health club, and 6,947 square feet of restaurant in addition to its planned development of 525,485 square feet of net new office space. Recent analysis for the Menlo Gateway Project projects that it will result in a net increase of 1,878 employees in Menlo Park.[16]

Applying an employment density factor of 300 square feet per employee (which is the same as that used for the Specific Plan and Menlo Gateway Project job estimates), it is estimated that the 674,438 square feet of the other proposed office and research/development projects (i.e. not

[15] This is considered a conservative population estimate since many of the proposed new housing units may be condominium or multi-family units that might be expected to have a lower number of occupants per unit (Strategic Economics, May, 2009). Strategic Economics projections are used since they are more specific to Menlo Park than the more general approach ABAG uses to develop its regional and city population and housing projections.

[16] Keyser Marston Associates, *Housing Needs Analysis Bohannon Office / Hotel Mixed Use Project,* June 2009.

including the Menlo Gateway Project) would create approximately 2,248 additional jobs within the City if they are all built out.[17] Altogether, the cumulative job impact of these approved or pending future projects would be up to approximately 4,126 new jobs for Menlo Park.

Future employment growth associated with the proposed new retail, commercial, and hotel development under the Specific Plan is estimated to be up to 1,357 if full build-out occurs. As shown in Table 4.11-1 and discussed in POP-1, by 2030, Menlo Park's sphere of influence employment is projected to be 36,640 jobs – an increase of 7,240 from its current 2010 employment levels.

The cumulative job growth impact of the Specific Plan and currently foreseen projects will be 5,483 new jobs and would represent 75.7 percent of the City's anticipated future 2030 job growth. As with housing, future commercial growth within the Plan area is anticipated and does not exceed ABAG's projections. Consequently, the Specific Plan proposed office, retail and other commercial development would not be expected to result in substantial unanticipated indirect population growth from increased local employment. Therefore, the cumulative impact of the Specific Plan would be expected to have a less than significant impact on the City of Menlo Park's population and housing.

Mitigation: None required.

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[17] City of Menlo Park, 2009b. Project List. Community Development Department. Obtained online at http://www.menlopark.org/projects/proj_comdev.htm on January 20, 2010.

4.12 Public Services and Utilities

This section discusses existing public services (including police, fire, and schools) and utilities (including solid waste collection and disposal, energy, communications and wastewater collection and treatment) serving the Plan area, as well as potential impacts of the Specific Plan to those public services and utilities.

4.12.1 Environmental Setting

Public Services

Police Protection

The Menlo Park Police Department (Police Department) provides police protection services in the City of Menlo Park. The Police Department is headquartered at 701 Laurel Street and consists of 70.5 employees (full-time equivalent), including 50 sworn officers, made up of 39 line level officers, eight sergeants, two commanders, and one police chief. The current ratio of sworn police officers to city residents is approximately 1.43 or one sworn officer per 700 residents although the ratio decreases during the business hours when the daytime population increases.[1]

The Police Department is organized into two divisions, each headed by a commander. Each of these divisions has 10 units headed by a supervisor. These units operate 24 hours a day, seven days a week. The Police Department has a diverse range of units that respond to the specific needs of the Police Department and the general community. These include patrol, K-9 units, investigations, narcotic enforcement team, records, communications, SWAT, code enforcement, property, parking enforcement, training and administration.

The City of Menlo Park is divided into three beats: Beat 1 covers areas west of the Caltrain right-of-way, Beat 2 covers areas between the Caltrain right-of-way and U.S. Highway 101 and Beat 3 covers areas east of U.S. 101. The Plan area, which is located generally west of the Caltrain right-of-way, falls within Beat 1. Two officers are assigned to this beat at all times, with additional officers sent to assist on an as-needed basis.[2]

The Police Department compiles crime statistics for the City, which are generally categorized by census tracts. According to the most recent crime statistics compiled for 2008, Census Tract 26,[3] in which most of the Specific Plan area is located, has the second highest rate of crime incidents, with 148 crimes perpetrated in the calendar year 2008. Census Tract 25,[4] which includes some of the Specific Plan area, has the fourth highest rate of crime incidents, with 120 crimes perpetrated

1 Menlo Park Police Department. Telephone and email communication with Nicole Acker, Management Analyst-Training/Hiring/Media Relations, January 26 and February 22, 2010.
2 Walker, Ashley, City of Menlo Park Police Department, Records Division, personal communication with ESA, July 28, 2009.
3 Census Tract 26 covers the area from Caltrain right-of-way to University Drive, between the creek and Watkins Avenue.
4 Census Tract 25 covers the area from Middlefield Road to the railroad tracks and between the creek to Encinal Avenue.

in the calendar year 2008. Most crimes within that period (115) fell under the "larceny" category, which includes auto burglary.[5]

The estimated response time of emergency calls to the project area is approximately four minutes, with approximately nine to ten minutes to non-emergency calls.

Fire Protection

The Menlo Park Fire Protection District (MPFPD) was created in 1916 as an independent Special District that is currently governed by five elected officials who oversee a Fire Chief that manages the agency. MPFPD provides emergency services consisting of fire, fire prevention, emergency medical, hazardous materials, disaster preparedness and public education as well as other important related emergency services. MPFPD provides these services to approximately 93,000 residents of Menlo Park, Atherton, East Palo Alto, and some unincorporated areas of San Mateo County. In addition, portions of state highways 101, 280, 84 (Dumbarton Bridge), the San Francisco Bay and federal facilities are located within its service area. The MPFPD participates in the San Mateo County Automatic Aid, Expanded Alarm, and Move and Cover plans and has an Automatic Aid agreement with the City of Palo Alto Fire Department located in Santa Clara County. The MPFPD is finalizing an agreement for Mutual Aid with the City of Fremont Fire Department located in Alameda County.

The MPFPD has seven fire stations and one administrative office building that are spread throughout the 33-square-mile service area. The MPFPD facility distribution averages one Fire Station every 4.7 square miles within the service area. As a minimum, each Fire Station is staffed with three personnel and one Fire Engine. Fire Station 1, located at 300 Middlefield Road, is staffed with three additional personnel who are assigned to the District's 100-foot aerial ladder truck, Truck One. A Battalion Chief provides supervision for each of three shifts, bringing the minimum daily emergency staffing level to 25 personnel. The MPFPD employs approximately 110 full-time equivalent employees consisting of emergency safety and support personnel. With 97 designated "safety" positions, the resident-to-firefighter ratio is essentially one firefighter to 1,000 residents in the service area. Each Engine Company is staffed with at least one advanced life support paramedic and all line suppression personnel are certified as emergency medical technicians. Paramedic ambulance transport service is provided under contract between San Mateo County and American Medical Ambulance Response.

The MPFPD responded to approximately 8,000 calls for emergency service in 2009. Of these, approximately 62 percent were emergency medical incidents, 11 percent were service calls, nine percent were good intent calls[6], four percent were fire calls, and two percent were hazardous conditions calls. Dispatch services are provided on a contractual basis by the San Mateo County Public Safety Communications Center (PSC) for all of the fire agencies in San Mateo County.

5 City of Menlo Park, Police Department. Menlo Park Police Department Summary Crime Report, 2008.
6 "Good intent calls" are those in which a person genuinely believes there is an actual emergency, but when the agency reports, it is determined that there is not an emergency.

When a call for service is made, PSC dispatches the closest available and appropriate unit or resource regardless of jurisdiction.

The Plan area is served primarily by Station 6, located at 700 Oak Grove Avenue, which is within the Plan area. Station 6 is staffed by three personnel assigned to a Fire Engine. In 2009, this Fire Engine responded to over 1,200 emergency calls for service and was the third busiest Fire Engine in the MPFPD. It was in the top one-third of the busiest Engine Companies in San Mateo County.

The Plan area is also served respectively by Menlo Park Fire Stations 1, 3, and 4. Station 1 is located at 300 Middlefield Road in Menlo Park and is approximately 1.17 miles and 3 minutes away from the Plan area. Station 3, located at 32 Almendral Avenue in Atherton, is approximately 1.66 miles and 4 minutes away from the Plan area and Station 4, located at 3322 Alameda De Las Pulgas in unincorporated San Mateo County (West Menlo Park), is approximately 2.22 miles and 6 minutes from the Plan area.[7]

The MPFPD has independently started planning for station modernizations, including in particular a replacement of Station 6, for which the MPFPD has acquired an additional property behind the current station parcel. The MPFPD is also exploring improvements to Station 1, its headquarters. The facility modernizations are planned to allow the MPFPD to meet existing and future needs of the community.

As noted previously, the Menlo Park Fire Protection District has an automatic aid agreement with the City of Palo Alto. An automatic aid agreement provides assistance dispatched automatically by contractual agreement between two communities or fire districts. This is different from a mutual aid agreement, which is arranged on a call by call basis. The City of Palo Alto Fire Department covers approximately 26 square miles, serves a population of 59,395, and has one ladder truck, which is located at Fire Station #6 on the Stanford Campus at 711 Serra Street. The closest Palo Alto Fire Department station to the Plan area is Station #1, which is an engine company located at 301 Alma Street.

Schools

The Plan area is served by the Menlo Park City School District (Elementary) and the Sequoia Union High School District. Other elementary school districts serving portions of the City of Menlo Park include the Ravenswood Elementary School District, the Las Lomitas School District and the Redwood City School District. However, because the Plan area is outside the boundaries of the Ravenswood, Las Lomitas and Redwood City school districts' service areas, it is not expected that the number of students generated by development under the Specific Plan would attend schools in these districts. The following discussion provides a brief description of each school district anticipated to serve the Specific Plan area; **Table 4.12-1** presents essential information on each of these school districts.

7 Schapelhouman, Harold, Fire Chief, Menlo Park Fire Protection District, letter communication, August 11, 2010.

TABLE 4.12-1
HISTORICAL STUDENT ENROLLMENTS

School District (Grade Levels)	Schools	Enrollment	FTE[a] Teachers	Pupil/ Teacher Ratio	Change in student Enrollment 2003/04 – 2008/09 academic years (5 years)
Menlo Park City School District (K-8)[b]	4	2,533	146	17.3	+14.2%
Sequoia Union High School District (9-12)[c]	6	8,713	469	18.6	+10.9%

[a] Full-time equivalent.

SOURCE: [b] Enrollment Projection Consultants, 2009 (for school year 2009-10)
[c] California Department of Education, 2010 (for school year 2008-09)

Menlo Park City School District

The Menlo Park City School District (MPCSD) serves parts of Menlo Park, Atherton and unincorporated San Mateo County. The MPCSD provides kindergarten through 8th grade education within its four schools: Laurel School (Grades K-2), Encinal School (Grades K-5), Oak Knoll School (Grades K-5) and Hillview Middle School (Grades 6-8). During the 2009/10 academic year, approximately 2,533 students were enrolled in the MPCSD schools, with a student-to-teacher ratio of 17.3.[8]

Throughout the 1990s, MPCSD maintained an average annual enrollment growth rate of 2.7 percent, although it began to accelerate in 2001 and grew to a rate of 15.4 percent over a five-year period. As shown in Table 4.12-1, a high five-year growth rate of 14.2 percent continued through 2009. The most recent enrollment projections forecast an approximate 12.4 percent growth over 2009 enrollment by 2014 followed by a 1.1 percent decline below 2014 enrollment by 2019.[9]

Based on a 2006 study of facility conditions, MPCSD determined a need to build 57 new classrooms by 2015 to replace the 40 existing portable classroom and accommodate anticipated growth. To plan for the future and address existing facility shortcomings, the Board of Education authorized Measure U, a $91 million facilities bond, which was placed on the June 2006 ballot and approved by 70 percent of voters. After the passage of Measure U, MPCSD began an aggressive planning process that led to the October 2006 Board adoption of *The Plan for Reconfiguration of the Elementary Schools.* As a result, MPCSD has undertaken a facility improvement project at Oak Knoll Elementary School and a modernization project at Encinal Elementary School. These projects were completed in 2010. In addition, construction of eight classrooms and site improvements at Laurel School has been completed. MPCSD plans to construct three more classrooms at

8 Enrollment Projection Consultants, 2009 Enrollment Forecast Study for Menlo Park City School District, October 12, 2009
9 Enrollment Projection Consultants, 2009 Enrollment Forecast Study for Menlo Park City School District, October 12, 2009.

Laurel School, which are scheduled for completion by August 2011. The existing Hillview Middle School will be replaced with a new campus on the existing field and the existing school will be demolished and replaced with a new field. The new school will accommodate approximately 1,000 students. The completion of Hillview Middle School is anticipated for fall 2012.[10]

The Plan area is within the attendance boundaries of the Encinal School and the Hillview Middle School. During the 2008/09 academic year, the Encinal School enrolled 556 students, while the Hillview Middle School enrolled 669 students.[11]

Sequoia Union High School District

The Sequoia Union High School District (SUHSD) serves students from eight feeder school districts, including Atherton, Belmont, East Palo Alto, Menlo Park, Portola Valley, Redwood City, San Carlos, and Woodside. The SUHSD contains four comprehensive high schools, a continuation high school, and an adult school. During the 2008/09 academic year[12], SUHSD served a student population of approximately 8,713, in addition to over 8,000 adults that are served by the adult school.[13]

Graduating eighth graders in the Plan area who attend public school would attend the Menlo-Atherton High School, located at 555 Middlefield Road in Atherton. Enrollment at Menlo-Atherton High School has been relatively stable in the past decade with totals fluctuating between 1,919 students in the 2006/07 academic year and a peak of 2,090 students in the 2003/04 academic year. During the 2008/09 academic year, the total enrollment at Menlo-Atherton High School was 2,089 students. Over the academic year periods between 2003/04 through 2008/09, the SUHSD experienced an approximately 11 percent increase (see Table 4.12-1).[14] The District has not forecast projections for future growth.

Parks and Recreational Facilities

The City of Menlo Park Community Services Department (Department) is responsible for providing recreational and cultural programs for children, adults, and seniors. The Department manages the City's facilities, including 13 parks, two community centers, two swimming pools, two child care centers, and two gymnasiums. The Department offers a variety of classes and over 10 special events annually. A summary of the parks within Menlo Park and their acreages and amenities are shown in **Table 4.12-2**, below. In addition to the parks operated by the City, Flood Park, a 26-acre facility operated by the County of San Mateo, is located within city limits and provides recreational opportunities for Menlo Park residents. Flood Park is currently temporarily closed for Hetch Hetchy water pipeline repairs. The County, which is facing a budget deficit, has discussed keeping Flood Park closed or transferring it to the City of Menlo Park, although no actions have taken place as of the preparation of this report.

[10] Sheikholeslami, Ahmed, Director of Facility Planning and Construction, Menlo Park City School District, email communication, July 13, 2010.
[11] California Department of Education, www.cde.ca.gov, accessed July 7, 2010.
[12] Enrollment data for 2009-10 will be available in September 2010 (2010, California Department of Education).
[13] California Department of Education, www.cde.ca.gov, accessed July 7, 2010
[14] California Department of Education, www.cde.ca.gov, accessed July 7, 2010

TABLE 4.12-2
SUMMARY OF PARKS FACILITIES IN MENLO PARK

Park	Amenities	Acreage
Bedwell Bayfront	Passive recreation (large open space; walking trails)	155.0
Burgess	Little League baseball field; soccer field (300' x 200'); regulation baseball field; open play field; lighted tennis courts (2); children's playground; picnic areas	9.31
Fremont	Lighted walkways; benches; drinking fountain; shaded areas	0.38
Jack W. Lyle	Walking path with benches; open play field; half court basketball; children's playground; tot-lot playground	4.55
Kelly	Basketball court; baseball diamond; soccer field; picnic tables	8.3
Marketplace	Playground; open grassy area; walkway	1
Nealon	Lighted tennis courts (5); softball field; playground; picnic areas; off-leash dog area	9.0
Seminary Oaks	Walking path with benches; open play field; "Serenity Rock Garden;" children's playground; tot-lot playground	3.51
Sharon Hills	Passive Recreation (benches; walking path)	12.50
Sharon	Lake with fountain; gazebo; walking path with benches; shaded picnic area; grassy area; natural wooded area; tot-lot playground	9.83
Stanford Hills	Benches ; walkways; large grassy space; parking areas	3.11
Tinker	Tennis courts; picnic area; tot-lot playground	0.54
Willow Oaks	Open play field; lighted tennis courts (3); children's playground; tot-lot playground; public art; off-leash dog area	2.63
	Total Acreage Citywide[a]	**219.66**

[a] Summary above does not include all public school sites within the City, many of which provide joint use recreation facilities.

SOURCE: Menlo Park, 2010 (Recreation webpage)

Parks in the vicinity of the Plan area include Fremont Park, Nealon Park, and Burgess Park. Fremont Park, located at Santa Cruz Avenue and University Avenue, is a 0.38-acre park that features passive recreational areas, benches, and lighted walkways. Nealon Park, located at Middle Avenue west of El Camino Real, is a nine-acre park that features tennis courts, a softball field, a playground, picnic areas, and an off-leash dog area. Burgess Park, a 9.3-acre park located adjacent to the Civic Center complex, provides diverse facilities such as a baseball and soccer fields, tennis courts, a playground, picnic areas and passive recreation areas. Burgess Pool, Burgess Recreation Center, Arillaga Family Gymnasium, Burgess Gymnastics Center (proposed to be reconstructed), and Burgess Skate Park are located adjacent to the Burgess Park and offer numerous recreational opportunities to the residents of Menlo Park.

The City of Menlo Park has adopted a goal of maintaining a ratio of five acres of developed parkland for every 1,000 residents.[15] Based on a City population of approximately 32,200, this translates to a requirement of at least 160 acres of parkland (see Section 4.11, *Population and Housing*). As shown in Table 4.12-2, the City currently exceeds its park acreage goal.

Public Utilities

Water Supply, Storage, Treatment, and Distribution

Water Supply

The City of Menlo Park is served by four water utilities: Bear Gulch District of California Water Service Company (Cal Water); Menlo Park Municipal Water District; O'Connor Tract Cooperative Water Company; and East Palo Alto Mutual Water Company. Approximately two-thirds of the City's water users receive water from the California Water Service Company (Cal Water), and the Menlo Park Municipal Water District serves the majority of remaining one-third; a small portion of Menlo Park is served with groundwater provided by the O'Connor Tract Cooperative Water Company. East Palo Alto Mutual Water Company serves about ten homes adjacent to East Palo Alto in the Willows neighborhood.

Cal Water and Bear Gulch District

Cal Water is an investor-owned public utility supplying water service to 1.7 million Californians through over 440,000 connections. Its 25 separate water districts serve over 50 communities from Chico in the north to the Palos Verdes Peninsula in Southern California. Cal Water's operations for individual service districts are regulated by the California Public Utilities Commission. The California Public Utilities Commission sets different tariff rates for each of Cal Water's individual districts. Cal Water incorporated in 1926, and has provided water service to the Bear Gulch District since 1936.

Cal Water is a retail water provider; in this capacity it receives wholesale treated water from the San Francisco Public Utilities Commission (SFPUC) to distribute throughout its service area. The Bear Gulch District and Cal Water's Bayshore Districts (Mid-Peninsula and South San Francisco) along with the 27 member agencies of the Bay Area Water Supply and Conservation Agency (BAWSCA) receive purchased treated water from the San Francisco Public Utilities Commission's (SFPUC) Regional Water System. The BAWSCA members purchase approximately two-thirds of the water delivered through Regional Water System and the balance is delivered to the City and County of San Francisco and its Retail customers.

The Bear Gulch District serves the Plan area. In accordance with the Water Code and CEQA Guidelines, Cal Water has coordinated preparation of a Water Supply Assessment (WSA) for the development expected under the Specific Plan. The following information regarding the environmental setting is based on information found in the WSA (Appendix D).

[15] City of Menlo Park, 1994. General Plan. General Plan Background Report, Public Facilities and Services, page B-VI-6. State law establishes a standard for provision of neighborhood and community park area of three acres of park area per 1,000 persons. As allowed by the State, Menlo Park has adopted a stricter standard of five acres per 1,000 persons.

The Bear Gulch District is located in San Mateo County approximately 30 miles south-southeast of the City of San Francisco. The area served by Bear Gulch District includes the communities of Atherton, Portola Valley, Woodside, portions of Menlo Park including the Plan area, and adjacent unincorporated portions of San Mateo County including; West Menlo Park, Ladera, North Fair Oaks, and Menlo Oaks. The Bear Gulch District's system is bordered on the north by Redwood City; on the east by Palo Alto, Stanford University, and unincorporated Santa Clara County; and on the south and west by unincorporated San Mateo County. The Bear Gulch District served an annual average 18,089 accounts in calendar year 2009; and expects to serve an annual average of 18,492 in calendar year 2010-2011.

San Francisco Public Utilities Commission (SFPUC)

The SFPUC of the City and County of San Francisco (San Francisco) currently delivers an annual average of approximately 265 million gallons per day (mgd) to Retail and Wholesale customers primarily within the San Francisco Bay Area. Approximately 85 percent of that water supply is provided by the Hetch Hetchy delivery system, which diverts water from the Tuolumne River in the Sierra Nevada. The balance (of approximately 15 percent) comes from runoff in the Alameda Creek watershed, which is stored in the Calaveras and San Antonio reservoirs, and runoff from the San Francisco Peninsula, which is stored in the Crystal Springs, San Andreas, and Pilarcitos reservoirs (which also provide storage for water delivered from the Hetch Hetchy Project and it delivery system).

Table 4.12-3 shows the quantities and volumes of supply and the respective percentages. The table also shows the approximate volume of supply when a 20 percent system-wide reduction is imposed by the SFPUC on the retail and wholesale customers within the regional Bay Area conveyance system over multiple dry years.

TABLE 4.12-3
SUPPLY SOURCES AND SYSTEM-WIDE REDUCTIONS

SFPUC Water Sources	Normal Year Supply Source			Approximate Multiple Dry-Year Supply Source (20% System-wide Reduction)	
	Origin/System	mgd	Approximate % of Supply	mgd	Approximate % of Supply
Local Source	Alameda System[a]	39.75	15	14.84	7
	Peninsula System[b]				
Imported Source	Hetch Hetchy System[c]	225.25	85	197.16	93
Total		**265.00**	**100**	**212.00**	**100**

[a] Calaveras Reservoir, San Antonio Reservoir.
[b] Crystal Springs Reservoirs, San Andreas Reservoir, Pilarcitos Reservoir.
[c] Hetch Hetchy Reservoir, Lake Lloyd, Lake Eleanor, New Don Pedro Reservoir, Tuolumne River System.

SOURCE: San Francisco Public Utilities Commission. 2005. *Urban Water Management Plan*. p. 11.

San Francisco holds pre-1914 appropriative water rights to store and deliver water from the Tuolumne River in the Sierra Nevada and locally from the Alameda and Peninsula watersheds. San Francisco also diverts and stores water in the San Antonio Reservoir under an appropriative water right license granted by the State Water Resources Control Board in 1959.

SFPUC Regional Water System

In 1934, in order to create the Regional Water System, the San Francisco combined its newly operational Hetch Hetchy water conveyance system and the existing Spring Valley system on the San Francisco Bay Peninsula, which it had recently acquired with the purchase of the Spring Valley Water Company. With this acquisition, the San Francisco also gained water rights to local diversions off existing streams on the San Francisco Peninsula that were originally held by the Spring Valley Water Company.

Currently, the Regional Water System delivers water to 2.5 million users in Tuolumne, Alameda, Santa Clara, San Mateo, and San Francisco counties. As introduced above, the Regional Water System delivers an annual average of approximately 265 mgd[16] – of this, 81 mgd serves the Retail customers within the City and County boundaries of San Francisco and the other 184 mgd is delivered to the Wholesale customers based primarily on the San Francisco Bay Peninsula, and then the Wholesale customers sell water to its consumers within the individual service areas.

The Regional Water System is a complex system, shown in **Figure 4.12-1**, and supplies water from two primary sources:

- Tuolumne River through the Hetch Hetchy Reservoir, and
- Local runoff into reservoirs in Bay Area reservoirs in the Alameda and Peninsula watersheds.

Water from Hetch Hetchy Reservoir, through the Hetch Hetchy facilities represents the majority of the water supply available to the SFPUC. During drought periods of low precipitation in the San Francisco Bay Area, water from the Hetch Hetchy system can amount to over 93 percent of the total water delivered through the Regional Water System.

Bay Area reservoirs provide on average approximately 15 percent of the water delivered by the SFPUC Regional Water System. The local watershed facilities are operated to conserve local runoff for delivery. On the San Francisco Peninsula, the SFPUC utilizes Crystal Springs Reservoir, San Andreas Reservoir, and Pilarcitos Reservoir to capture local watershed runoff. In the Alameda Creek watershed, the SFPUC constructed the Calaveras Reservoir and San Antonio Reservoir. In addition to capturing runoff, San Antonio, Crystal Springs, and San Andreas reservoirs also provide storage for Hetch Hetchy diversions. The local watershed facilities also serve as an emergency water supply in the event of an interruption to Hetch Hetchy diversions.

[16] Total Regional Water System deliveries in FY07/08 were 256.7 mgd.

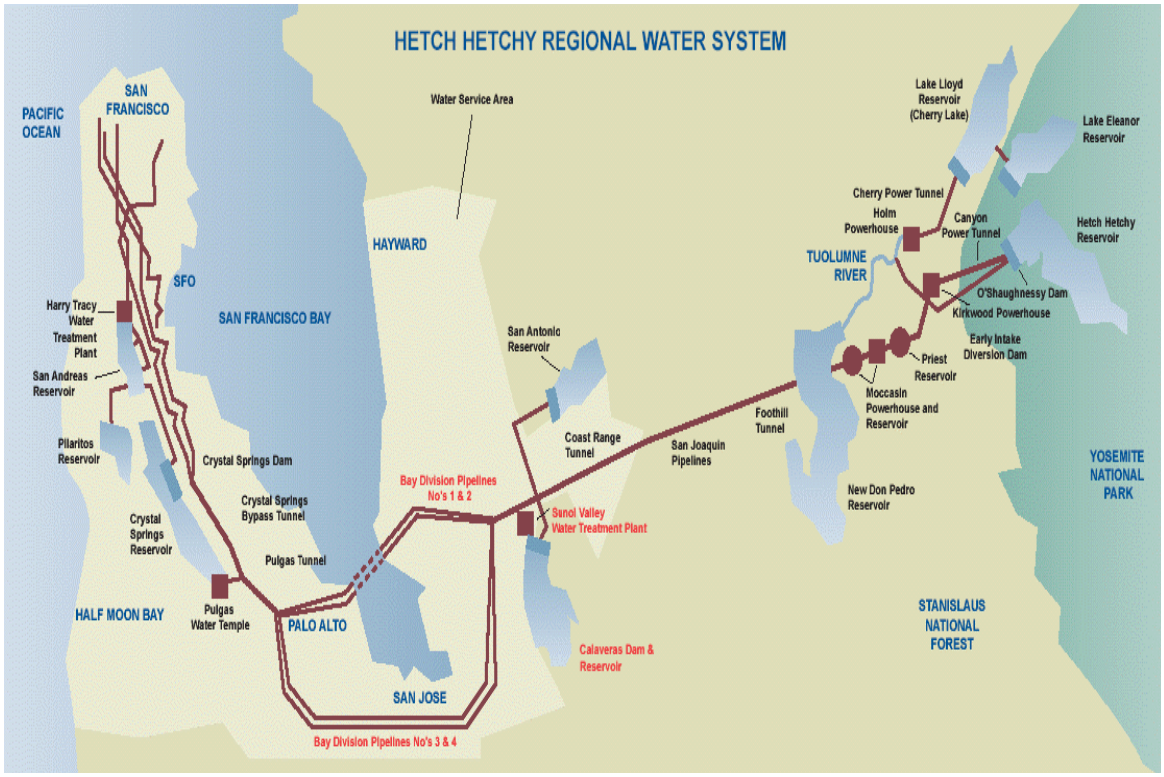

Figure 4.12-1
Regional Water Supply System

Water Supply Sources for Cal Water and Bear Gulch District

The water furnished to customers in the Bear Gulch District is a combination of purchased water and treated surface water.

Imported Purchased Water from SFPUC

The Bear Gulch District along with Bayshore Districts (Mid-Peninsula and South San Francisco) of Cal Water receives purchased treated water from the Regional Water System. The federal Raker Act prevents privately-owned utilities, like Cal Water, from receiving water from the Hetch Hetchy system, but allows purchases of treated water from local supply sources, such as the local watershed storage reservoirs. As such, by utilizing the storage and conveyance systems within the Regional Water System, the SFPUC serves all its retail and wholesale water demands with an integrated operation of imported water from Hetch Hetchy and/or locally produced Bay Area water.

Water Contracts and Agreements

In 1984, the SFPUC executed the Settlement Agreement and Master Water Sales Contract with the 27 member agencies of the BAWSCA. The BAWSCA members purchase approximately two-thirds of the water delivered by the SFPUC system and the balance is delivered to the City and County of San Francisco and its retail customers. The Settlement and Master Water Sales Contract primarily addresses the rate-making methodology used by SFPUC in setting wholesale

water rates for its wholesale customers, in addition to addressing water supply and water shortages within the regional water system. The Settlement Agreement and Master Water Sales Contract provides 184 mgd as an annual average of "Supply Assurance" to all BAWSCA wholesale customers, but is subject to reductions in the event of droughts, water shortage, earthquake, other acts of God or system maintenance and rehabilitation.[17] Each member holds an individual water supply contract and the Settlement Agreement and Master Water Sales Contract governs the contract. The original twenty-five year contract ended on June 30, 2009.

The SFPUC approved the new twenty-five year contract, now known as the Water Supply Agreement, in June 2009 and the BAWSCA agencies completed their approval of the Water Supply Agreement in October 2009. This new Water Supply Agreement expires on June 30, 2034. Section 7.01 of the 1984 Settlement Agreement and Master Water Sales Contract states "Supply Assurance continues in effect indefinitely, even after expiration of the MSA in 2009" and this is still the case in the new Water Supply Agreement. The condition is a reflection of case law, which holds that a municipal utility acts in a trust capacity with respect to water supplied to outside communities (Durant v. City of Beverly Hills, 39 Cal. App. 2d 133, 102 P.2d 759 (1940); and Hansen v. City of San Buenaventura, 42 Cal. 3d 1172 (1986)). In other words, entire communities have developed in reliance on these water supplies. Consequently, the Supply Assurance of up to 184 mgd will survive the termination of the Water Supply Agreement and the Individual Contracts.

Additional agreements and plans have been developed over the last twenty-five years and are summarized in the WSA. The Water Supply Agreement now includes an Individual Supply Guarantee for most Wholesale customers. The Individual Supply Guarantee establishes the minimum quantity of water the SFPUC will supply to each Wholesale customer during times of normal supply. The Water Supply Agreement does not guarantee that SFPUC will meet peak or hourly demands if the individual Wholesaler's annual usage exceeds the Individual Supply Guarantee. The Individual Supply Guarantee helps the Wholesaler plan for future demands and growth within their service area; for that reason, the Individual Supply Guarantee transcends the Water Supply Agreement expiration and continues indefinitely. The Individual Supply Guarantee for Cal Water secures 35.68 mgd for normal year deliveries.[18] However, some Wholesale agencies (Hayward) have been guaranteed the ability to increase water demands at the potential expense of other communities. Hayward and San Francisco executed a contract in 1962. This contract does not place a limit on Hayward's supply and SFPUC is contractually bound to meet these increasing demands. The contract stipulates that if Hayward purchases 22.1 mgd for three consecutive years, then SFPUC will recalculate the supply deliveries to the other BAWSCA agencies with an appropriate reduction. This has the potential in the future to affect the Individual Supply Guarantee for other communities, such as Cal Water. It should be noted that Hayward's 2007-2008 average annual supply purchase quantity was 19.1 mgd and in 2008-2009 Hayward's average annual purchase was 18.57 mgd – 2.5 mgd less than the 22.1 mgd delivery threshold.

[17] San Francisco Public Utilities Commission. April 2000. *Water Supply Master Plan*. p. 23.
[18] Bay Area Water Supply and Conservation Agency. March 2007. Annual Survey: FY 2005-06. p. 15.

These purchase reductions are indicative of positive demand reductions and would suggest that over the long-term, due to continued water use efficiencies that Hayward may not reach the 22.1 mgd threshold three years in a row.

In addition, the communities of San Jose and Santa Clara are also included in the Suburban Wholesalers and receive portions of the 184.0 mgd from SFPUC allocated to wholesale customers. Each community has been granted 4.5 mgd for a total of 9.0 mgd of the 184.0 mgd. This routinely creates issues with regard to allocating supply shortages and could potentially affect the supply deliveries to Cal Water and the other Wholesalers in times of Regional Water System reductions.

In terms of water supply reliability, the SFPUC's UWMP assumes "firm" delivery as the "amount the system can be expected to deliver during historically experienced drought periods."[19] The 1987 to 1992 drought is the basis for this plan, plus an additional period of limited water availability.[20] The SFPUC plans its water deliveries assuming that the worst drought experience is likely to reoccur and then adds an additional period of limited water availability. An 8.5-year drought scenario is referred to as the "design drought" and is ultimately the basis for SFPUC water resource planning and modeling. The "design drought" is based on the 1986-1992 drought plus 2.5 years of "prospective drought", which includes 6 months of recovery period.[21]

In 2000, the SFPUC Water Supply Master Plan identified a 239 mgd annual average delivery over a hydrologic period equivalent to that experienced from 1921 to 1999 with no deficiencies.[22] Currently, under existing operations, the SFPUC system has a firm delivery capability of 219 mgd.[23] This firm delivery decrease is due to the 2001 California Department of Safety of Dams operational restrictions on Calaveras Dam. It should be stated that actual annual deliveries greatly exceed 219 mgd. For example, in 2007-2008 the SFPUC delivered approximately 257.8 mgd.

However, as of this writing, the environmental review for the Calaveras Dam Replacement project is currently on-going, and the limitations on water storage capacity should be removed once the project is completed. Other repairs and improvements at Calaveras Reservoir have been completed or soon will be. It should also be noted that the Sunol Valley Water Treatment Plant, located at Calaveras Reservoir is scheduled for expansion and storage capacity improvements; in fact, the Draft Environmental Impact Report is currently being circulated for public review. Upon completion of the expansion, the treatment plant will be able to sustainably produce and deliver 160 mgd, which further improves SFPUC's ability to deliver firm supplies to the retail and wholesale customers.

According to the SFPUC's 2005 UWMP, there is sufficient water to meet all expected future demand in normal and wet hydrologic periods; however, the Water Supply Agreement allows the

19 San Francisco Public Utilities Commission. December 2005. *Urban Water Management Plan*. p. 21.
20 San Francisco Public Utilities Commission. December 2005. *Urban Water Management Plan*. p. 21.
21 San Francisco Public Utilities Commission. April 2000. *Water Supply Master Plan*. p. 22.
22 San Francisco Public Utilities Commission. April 2000. *Water Supply Master Plan*. p. 22.
23 City and County of San Francisco: San Francisco Planning Department. June 2007. *Draft Program Environmental Impact Report for the San Francisco Public Utilities Commission Water System Improvement Program*. p. 5.1-12.

SFPUC to curtail deliveries during droughts, emergencies and scheduled maintenance activities.[24] SFPUC system operations are designed to allow sufficient water remaining in SFPUC reservoirs after six years of drought to provide some ability to continue delivering water, although at significantly reduced levels.[25] This differs from the "design drought", which is a water supply planning tool and as previously stated is based on the 1986-1992 drought plus 2.5 years of "prospective drought", which includes 6 months of recovery period.[26] In order to meet current demand in the San Francisco Bay Area, SFPUC is currently delivering an annual average of 265 mgd,[27] about 46 mgd above firm delivery capabilities; consequently, if SFPUC declares a shortage, rationing would be necessary. Rationing is voluntary for up to a 10-percent system-wide reduction, but mandatory at greater than a 10-percent reduction. The SFPUC used the historical hydrologic record from 1920 to 2002 (83 years) to assess the availability of water supplies in the future. This methodology assumes that climatic history will repeat itself and similar hydrologic conditions will be experienced. Under 2005 conditions (year of available data), there is a 7.3 percent probability of a 10 percent system wide shortage and a 9.8 percent probability of a 20 percent system wide shortage.[28] However, water supply reliability is expected to increase following Crystal Springs and Calaveras Reservoir improvements expected to be completed by 2012.[29] These improvements would allow surface water storage of an additional 58,700 acre-feet (AF) at Calaveras Reservoir and 11,100 AF at Crystal Springs- essentially adding 69,800 AF of stored water.

The SFPUC and the Wholesale members developed a long-term strategy to accommodate or rectify the potential of future water shortages throughout its Wholesale and Retail operations.[30] The methodology for determining water supply reliability during drought years is the Water Shortage Allocation Plan. The Master Water Supply Agreement allocates water between SFPUC retail customers and BAWSCA (Tier 1) and allows BAWSCA to develop a formula to allocate water among its members (Tier 2) for system-wide shortages up to 20 percent. In 2010, BAWSCA members agreed on a Tier 2 allocation formula that will remain in effect until 2018. In 2018, BAWSCA members could extend the current formula or modify it if need be. If BAWSCA members are unable to agree unanimously on a Tier 2 allocation formula, the BAWSCA Board will set the formula.

Under the current Water Supply Agreement, reductions to wholesale customers are to be based on each agency's proportional purchases of water from the SFPUC during the year immediately preceding the onset of shortage, unless this formula is supplanted by a water conservation plan agreed to by all parties. The Water Supply Allocation Plan formula described hereafter is currently being renegotiated by the BWSCA membership. The Water Supply Allocation Plan was necessary because the Settlement Agreement and Master Water Sales Contract's default formula discouraged the wholesale customers from reducing purchases during normal or wet years by applying demand

[24] San Francisco Public Utilities Commission. 2005. *Urban Water Management Plan*. p. 15.
[25] San Francisco Public Utilities Commission. April 2000. *Water Supply Master Plan*. p. 20.
[26] San Francisco Public Utilities Commission. April 2000. *Water Supply Master Plan*. p. 22.
[27] San Francisco Public Utilities Commission. 2005. *Urban Water Management Plan*. p. 11.
[28] City and County of San Francisco: San Francisco Planning Department. June 2007. *Draft Program Environmental Impact Report for the San Francisco Public Utilities Commission Water System Improvement Program*. p. 9-13.
[29] San Francisco Public Utilities Commission. 2005. *Urban Water Management Plan*. p. 27.
[30] San Francisco Public Utilities Commission. 2005. *Urban Water Management Plan.* p. 22.

management programs (conservation measures) or pursuing alternative supplies (groundwater, water recycling, transfers, etc.). The Water Supply Allocation Plan somewhat addressed this issue by basing the allocation formula on the three immediate years preceding the shortage and allowing transfers of banked water credits (water within a drought allotment that is not used).

The Water Supply Allocation Plan has two components. The Tier One component of the Water Supply Allocation Plan allocates water between San Francisco and the Wholesale customer agencies collectively. In a called 20 percent reduction by the SFPUC, the City and County of San Francisco will only face an 18 percent reduction. The Tier Two component of the Water Supply Allocation Plan allocates the collective Wholesale customer shares among each of the 26 Wholesale customers and each Wholesaler receives a different share. The Tier Two allocation is based on a formula that considers three factors, the first two of which are fixed: (1) each agency's Individual Supply Guarantee from SFPUC, with certain exceptions, and (2) each agency's purchases from SFPUC during the three years preceding adoption of the Plan. The third factor is the agency's rolling average of purchases of water from SFPUC during the three years immediately preceding the onset of shortage.[31]

Cal Water's Individual Supply Guarantee is 35.68 mgd; this is its share of the 184 mgd allocated for the BAWSCA members.[32] The SFPUC 2004 Wholesale Customer Water Demand Projections study analyzed water demands associated with each customer sector and then forecasted demands over a twenty-five year (2005 – 2030) planning horizon. The Tier One (SFPUC to BAWSCA) and Tier Two (BAWSCA to retailer agencies) allocation plans were used to determine supply reductions in single and multiple dry year scenarios. The Water Supply Agreement allocates wholesale supplies up to 184.0 mgd to 2018 and due to the limitations on the Regional Water System Tier One supplies are held constant to 184 mgd through 2035.

Prior to 2018, SFPUC will re-assess its regional supply capacities in order to evaluate the Regional Water System's reliability - at that point in time, SFPUC, in its efforts to provide water supply projections to the BAWSCA agencies is likely to present new water supply planning data out to 2030 or 2035. Because water use efficiency and conservation efforts are needed to accommodate new growth throughout the Bay Area and it is unknown how or if new supplies would be available in the Regional Water System, this analysis is holding the wholesale supplies at 184.0 mgd and Cal Water's Individual Supply Guarantee to 35.68 mgd.

Bear Gulch District's Surface Water Supply (Local Watershed)

The Bear Gulch District manages and produces its own local surface water supplies within its service area. These local supplies are collected from the Bear Gulch Creek via two diversion facilities and stored in Bear Gulch Reservoir.[33] Diversions are limited in time and quantity of use by the State Water Resources Control Board through a license on the lower Station 3 diversion (Application A006753, License 005441) and a permit on the upper diversion (Application A014313, Permit 008816).

31 San Francisco Public Utilities Commission. 2005. *Urban Water Management Plan.* p. 81.
32 Bay Area Water Supply and Conservation Agency. January 2010. Annual Survey: FY 2008-09.
33 Bear Gulch District 2005 UWMP, page 25.

It should be noted that production from the Bear Gulch Reservoir is entirely dependent on annual precipitation and stormwater run-off in the area. In its 2005 UWMP the Bear Gulch District used 1,534 acre feet per year (AFY) (1.37 mgd) as its projected supplies from the Bear Gulch surface water system; however, these projections significantly overestimated the actual annual supply. New data in the Bear Gulch District's 2010 draft UWMP worksheets uses the 10-year average of 1,271 AFY or 1.12 mgd from the Bear Gulch Reservoir, which is more consistent with 25-year average of 1,280 AF. This analysis recognizes the importance of choosing a reliable number to use for long-term planning purposes and as such for consistency purposes the WSA also used 1,271 AFY (1.12 mgd) in its presentation of supply sources.

Total Water Supplies

Table 4.12-4 summarizes Cal Water and the Bear Gulch District's total water supplies now and over the 25-year planning period from 2010-2035. In 2010, the Bear Gulch District can access an annual average 12.30 mgd from all sources (SFPUC purchased water [11.18 mgd] and local surface water [1.12 mgd]). As discussed previously, for conservative water planning purposes, supplies from SFPUC are held constant over the 25-year planning horizon due to the diversion limitations placed on the Regional Water System (Total 35.68 mgd: 11.18 mgd for Bear Gulch District and 24.50 for Bayshore Districts).[34] These supplies are assumed to be available in the quantities listed in Table 4.12-4. As stated above, surface water supplies from the Bear Gulch Reservoir are held to 0.673 mgd, which is the daily average from the Bear Gulch Reservoir projected in normal, single dry and multiple dry years as identified in the Bear Gulch District 2005 UWMP. The Bear Gulch District intends to use these supplies to meet its customer demands.

Water Storage and Distribution

The water distribution system is owned and operated by Cal Water and consists of a pipe network which lies predominantly beneath the traveled roadway in the public street rights-of-way. Water lines typically are located adjacent to the gutter line within the streets. Distribution lines in the area are a combination of asbestos cement, transite, and cast iron pipe. Cal Water has a 50-year replacement program for cast iron pipe, as it tends to corrode in soil types that are common in Menlo Park. The six-inch cast-iron distribution lines placed beneath El Camino Real, Roble, Live Oak, Menlo, Santa Cruz, Oak Grove, Glenwood and Encinal avenues are part of this 50-year replacement program. If possible, any trench work, resurfacing and paving improvements that could be implemented as a result of the Specific Plan should be coordinated with replacement of the existing cast iron water line. Further, any changes to street cross sections that change gutter locations or add landscape features and/or street furniture will need to be coordinated with water line locations.[35]

[34] Bear Gulch District 2005 UWMP, Appendix C last Worksheet – used for planning purposes
[35] California Water Service Company, Bear Gulch District Existing Conditions Memorandum for Utilities Analysis in the El Camino Real / Downtown Specific Plan. Memorandum received April 18, 2011.

TABLE 4.12-4
NORMAL YEAR SUPPLIES FOR CAL WATER; AND BEAR GULCH DISTRICT

Years	FY 2008-09 (Actual)	2010	2015	2020	2025	2030	2035
Individual Supply Guarantee from SFPUC							
AFY	39,966.7	39,764	39,764	39,764	39,764	39,764	39,764
MGD	35.68	35.68	35.68	35.68	35.68	35.68	35.68
Bear Gulch District (mgd)							
SFPUC-Imported Water	12.77	11.18[a]	11.18[a]	11.18[a]	11.18[a]	11.18[a]	11.18[a]
Local Surface Water	0.542	1.12	1.12	1.12	1.12	1.12	1.12
Total	**13.31**	**12.30**	**12.30**	**12.30**	**12.30**	**12.30**	**12.30**
Bayshore Districts (mgd) [cities of San Carlos, San Mateo, Colma and South San Francisco]							
SFPUC-Imported Water	23.33	24.50[b]	24.50[b]	24.50[b]	24.50[b]	24.50[b]	24.50[b]
Local Groundwater[c]	0.279	1.2	1.2	1.2	1.2	1.2	1.2
Total	**23.60**	**25.70**	**25.70**	**25.70**	**25.70**	**25.70**	**25.70**
Cal Water Combined Totals (mgd)							
Cal Water -SFPUC Imported Water Subtotal (Individual Supply Guarantee)	36.10	35.68	35.68	35.68	35.68	35.68	35.68
Local Water Sources Subtotal	0.82	2.32	2.32	2.32	2.32	2.32	2.32
Total Supply	**36.92**	**38.0**	**38.0**	**38.0**	**38.0**	**38.0**	**38.0**

NOTES:
[a] Assumes Supply from SFPUC does not change after 2018 and Cal Water's supply from SFPUC remains at the current Supply Assurance Allocation of 35.68 mgd through 2035.
[b] 2010 - 2030 Supply from SFPUC is the difference b/w Bear Gulch District's annual amount and Cal Water's Supply Assurance Allocation for year each year. This assumes that SFPUC's Supply Assurance Allocation to Cal Water of 35.68 mgd remains unchanged before and after 2018.
[c] The actual production in 2008-2009 of groundwater in South San Francisco was constrained by treatment plant renovation and Health Department reauthorization. Anticipated future use is 1.2 to 1.37 mgd depending on outcome of the negotiations with SFPUC on the GWSRP (conjunctive use.

SOURCE: 2005 Bear Gulch District UWMP; 2010 Draft UWMP Worksheets and PBS&J, July 2010

The City of Menlo Park is divided into two separate pressure zones; the high zone and the low zone. The Specific Plan area is within the low zone, where static pressures range from 55 pounds per square inch (psi) to 65-psi. Hydrant tests conducted between 2006 and 2008 indicate, in general, that the following fire flow rates are available with a residual pressure of 20-psi: approximately 2,500 gallons per minute (gpm) in the area near Santa Cruz Avenue; 1,300 gpm at the south end of the Specific Plan area along El Camino Real and over 5,000 gpm at the north end of the Specific Plan area. Typically, a minimum of 1,500 gpm with a residual pressure of 20-psi is required to serve new developments. Depending on building sizes and construction types, local fire departments may require higher flow rates. If so, these requirements and/or necessary improvements would be coordinated during implementation of Specific Plan phases.

Water Treatment

SFPUC Purchased Water. The Bear Gulch District purchases approximately 90 percent of its treated water supplies from SFPUC as agreed upon in the current Water Sales Agreement and its Individual Supply Guarantee (ISG). The balance of its supply (approximately 1.2 mgd) is made up from local surface water from the Bear Gulch Reservoir.

The purchased water is treated at both the Sunol Valley WTP and the Harry Tracy WTP. SFPUC is currently engaged in a variety of water treatment and distribution system improvements projects that comprise its Water System Improvement Program (WSIP), which evolved out of the Water System Master Plan (2000). In October 2008, SFPUC certified the Program Environmental Impact Report (PEIR) for the WSIP. The WSIP consists of 85 projects, 26 of which are specifically for water supply reliability needed to accommodate projected growth, meet water quality standards, and add system redundancy in the event of an interruption due to seismic activity. The PEIR evaluated the impacts associated with implementation of the WSIP; individual projects would be subject to project-specific environmental review. SFPUC is in the process of completing the environmental review for expansion at the Sunol Valley WTP; once completed, the Sunol Valley WTP would have capacity to treat up to 160 mgd. The Harry Tracy WTP treats 120 mgd, but there are plans for expansion and upgrades to sustainably treat 180 mgd. When both of these WTPs are operating at capacity, SFPUC would be capable of producing up to 340 mgd. In addition, SFPUC initiated construction of the Tesla WTP in Tracy, California, which is scheduled for completion in 2011. The Tesla WTP will be the nation's largest ultraviolet disinfection treatment plant and will be capable of producing 315 mgd. Therefore, after 2011, SFPUC can deliver up to 655 mgd throughout its service area.

Local Surface Water. The Bear Gulch District manages and produces its own local surface water supplies within its service area. These local supplies are collected from the Bear Gulch Creek via two diversion facilities and stored in Bear Gulch Reservoir.[36] This surface water is treated at the outlet of the Bear Gulch Reservoir prior to entry into the distribution system.[37]

The Bear Gulch District's treatment facility is located adjacent to the Bear Gulch Reservoir. The water is clarified, filtered, and chloraminated in compliance with the Surface Water Treatment Rule and the Safe Drinking Water Act, and then pumped into the distribution system. The treatment plant, which was placed into operation in 1977, has a rated capacity of 6 mgd. The annual production ranges from a high of 2,812 AF (916 million gallons [MG]) to a low of 319 AF (103 MG) per year. The 25-year average (1980 to 2004) is 1,280 AFY.

Wastewater Conveyance and Treatment

The West Bay Sanitary District (WBSD) manages wastewater conveyance in Menlo Park.[38] The District serves an area of approximately 13 square miles and operates and maintains approximately 200 miles of public sewer main lines, which range in size from 3 to 54 inches, in

[36] Bear Gulch District 2005 UWMP, page 25.
[37] Bear Gulch District 2005 UWMP, page 26.
[38] West Bay Sanitary District (WBSD), http://www.westbaysanitary.org/about.htm, accessed July 7, 2010.

the cities of Menlo Park, East Palo Alto, Redwood City, Atherton, Woodside, Portola Valley and portions of unincorporated San Mateo County. WBSD employs eight pumping stations, but otherwise operates by gravity flow to its terminus at the end of Marsh Road in Menlo Park.

Wastewater generated in Menlo Park is transported via main line trunk sewers to the Menlo Park Pumping station (located at the entrance to Bayfront Park) and is then conveyed to the South Bayside System Authority (SBSA) Regional Treatment Plants in San Carlos, where it is treated. The SBSA facility, located in southeastern Redwood Shores, consists of primary clarifiers, fixed film reactors, aeration tanks, final clarifiers, dual media filters, and chlorination and dechlorination equipment and is responsible for the operation of four pump stations, one force main, and a sub-regional tertiary wastewater treatment facility. The treated wastewater is discharged through a 66 inch diameter pipeline to the submarine outfall diffuser about one mile offshore. The diffuser is located at a depth of 45 feet in the main shipping channel approximately 2 miles south of the San Mateo Bridge.

Through a Joint Powers Authority (JPA), the cities of Redwood City, Belmont and San Carlos together with the WBSD, own and operate the SBSA treatment plant. The SBSA plant has an existing dry weather capacity of 27 mgd and peak wet-weather-capacity of 71 mgd. SBSA is two years into implementing their Conveyance System Master Plan, which is a 10-year capital improvement program (CIP) intended to accommodate a projected need for 21 mgd of wastewater flows by the year 2030. Renovation and refurbishing of SBSA facilities under the CIP will increase treatment capacity to 29 mgd during dry weather and 80 mgd during peak wet weather.[39] The majority of these improvements are anticipated for completion in 2015 with full completion anticipated for 2018.[40]

In 2009, SBSA received a dry weather average of 15 mgd from residential and commercial customers in the SBSA service area. SBSA's actual peak wet weather flow in 2009 was 62 mgd. However, SBSA's actual peak wet weather flow in 2008 was 70 mgd (Child, 2010). During wet weather events, when wastewater flows exceed SBSA's capacity, flows are temporarily diverted to a 10-million-gallon equalization basin near the connection to SBSA's system. This temporary holding pond is owned and maintained by WBSA and can receive excess flows from WBSD, or other member agencies of the JPA.[41]

WBSD's entitled allocation of the SBSA plant capacity is approximately 6.6 mgd in dry weather and approximately 14.4 mgd during peak wet weather. WBSD's average daily flow during dry weather is approximately 5.0 mgd. Wet weather flows vary but generally peak around 14 mgd during wet weather events due to the inflow and infiltration of rainwater.[42]

[39] South Bayside System Authority (SBSA), SBSA Announces $339 Million, 10-Year Capital Improvement Program, Press Advisory, May 9, 2008.
[40] Child, Dan, South Bayside System Authority, email communication, July 22, 2010.
[41] Kitajima, Bill, West Bay Sanitary District, email communication, July 22, 2010.Menlo Park City School District (MPCSD), http://www.mpcsd.org/facilities.html, accessed April 8, 2010.
[42] Kitajima, Bill, West Bay Sanitary District, email communication, July 22, 2010.Menlo Park City School District (MPCSD), http://www.mpcsd.org/facilities.html, accessed April 8, 2010.

Solid Waste

The City, which previously had a contract with Allied Waste Services (Allied), currently has a contract (effective January 1, 2011 through December 31, 2020) with Recology San Mateo County for collection and transportation of solid waste and recyclables within the City. At present, collected solid waste is hauled to the San Carlos Transfer Station, located at 225 Shoreway Road in San Carlos, approximately six miles from the Plan area. The daily permitted capacity at the transfer station, which is owned by the South Bayside Waste Management Authority (SBWMA) and operated by Recology San Mateo, is 3,000 tons per day. Currently, the station receives approximately 1,500 to 1,900 tons per day.

Waste from the San Carlos Transfer Station is transported to the Ox Mountain Sanitary Landfill, located north of Highway 92 and Skyline Boulevard near the City of Half Moon Bay, approximately 12 miles from the Plan area. The Ox Mountain Sanitary Landfill accepts mixed municipal solid waste, agricultural, construction and demolition debris, asbestos, contaminated soil, and green waste. Ox Mountain Sanitary Landfill has a daily permitted capacity of 3,598 tons of solid waste or 1.3 million tons of solid waste per year, with a remaining capacity of 44.6 million cubic yards (as of January 2001), which is expected to be adequate until at least 2023.[43]

In 2007, the City of Menlo Park sent approximately 30,010 metric tons of solid waste to the Ox Mountain Sanitary Landfill. The City's diversion rate (the percentage of solid waste recycled and thereby diverted from landfills) has been increasing since 1995 and has surpassed the state goal of 50 percent in recent years. The City's diversion rate was 55 percent in 2005 and in 2006, the most recent years for which data is available.[44]

Electricity and Natural Gas

Electrical power and natural gas in the Plan area are provided by Pacific Gas and Electric Company (PG&E). PG&E is regulated by the California Public Utilities Commission (CPUC) and is the primary provider of gas and electrical power to San Mateo County. PG&E purchases both gas and electrical power from a variety of sources, including other utility companies. PG&E's service area extends from Eureka to Bakersfield (north to south), and from the Sierra Nevada to the Pacific Ocean (east to west). PG&E obtains its energy supplies from power plants and natural gas fields in northern California and from energy purchased outside its service area and delivered through high voltage transmission lines. No PG&E gas transmission lines go through the Plan area.

With a relatively mild Mediterranean climate and strict energy efficiency and conservation requirements, California has lower energy consumption rates than other parts of the country. According to the Department of Energy (DOE), per capita energy use in California is approximately 70 percent of the national average, the third lowest state in the nation. California has the lowest

[43] Cal Recycle, Active Landfills Profile for Ox Mountain Sanitary Landfill (41-AA-0002), http://www.calrecycle.ca.gov/Profiles/Facility/Landfill/LFProfile1.asp?COID=1&FACID=41-AA-0002, accessed July 8, 2010

[44] Cal Recycle, Jurisdiction Profile for City of Menlo Park, http://www.recycleworks.org/div_rates.html, accessed July 8, 2010a.

annual electrical consumption rates per person of any state and uses 20 percent less natural gas per person. Per capita transportation energy use in the state is near the national average. Nevertheless, with a population of 34 million people, the state is the tenth largest consumer of energy in the world.

Menlo Park is located in a coastal climate zone (Climate Zone 3 in the Title 24 Climate Zone designation mapping) and, with the moderating influence of the bay, requires less energy for heating and cooling than other parts of the state. PG&E delivered 4,955 million kilowatt (kW) hours to customers in San Mateo County in 2007. Approximately 32 percent of this power was sold to residential accounts. PG&E also delivered 225.5 million of therms of natural gas to San Mateo in 2007, with about 60 percent of it sold to residential customers.[45]

The Plan area is fully developed with a mix of uses and currently receives electricity and natural gas from PG&E.

4.12.2 Regulatory Setting

Federal

Safe Drinking Water Act

The United States Environmental Protection Agency (USEPA) administers the Safe Drinking Water Act (SDWA), the primary federal law that regulates the quality of drinking water and establishes standards to protect public health and safety. The Department of Health Services (DHS) implements the SDWA and oversees public water system quality statewide. DHS establishes legal drinking water standards for contaminates that could threaten public health.

State

Urban Water Management Planning Act

Section 10610.04 et seq. as amended, of the California Urban Water Management Planning Act specifies that "Urban Water Suppliers shall be required to develop water management plans to actively pursue the efficient use of available supplies." California Water Service Company prepared and adopted its Urban Water Management Plan (UWMP) for the Bear Gulch District in December 2005. The Bear Gulch District's 2005 UWMP is currently available online.[46] The Urban Water Management Planning Act requires water agencies to update their UWMP every five years. Cal Water currently is in the process of updating its UWMPs for adoption on or before July 1, 2011.

45 California Energy Commission (CEC), *Electricity Consumption by County*, http://www.ecdms.energy.ca.gov/elecbycounty.aspx, accessed July 7, 2010.
46 *City of Menlo Park 2005 Urban Water Management Plan*, www.menlopark.org/departments/pwk/ mpmwd.html.

California Water Code Section 10910 et seq.

Senate Bill 610

Effective January 1, 2002, the State of California, through Senate Bill 610 (SB 610) requires that a city or county, and the associated public water system, prepare a Water Supply Assessment (WSA) for projects that meet certain criteria: (1) a project creating the equivalent demand of 500 residential units, (2) a proposed shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet (s.f.) of floor space, and (3) a commercial office building employing more than 1,000 persons or having more than 250,000 s.f. of floor space. The proposed project meets the criteria for requiring a WSA because it would create employment for over 1,000 persons, include more than 250,000 s.f. of floor space, and create more than 500 residential units. The WSA that is required as part of the CEQA process must include, among other information, an identification of existing water supply assessments, water rights or water service contracts relevant to the identified water supply for the proposed project, and water received in prior years pursuant to those entitlements, rights, and contracts. A WSA has been prepared for the proposed project by PBS&J in June 2009 (Appendix D), the results of which are considered in this Public Services and Utilities section.

Title 22

The California Water Code requires the California Department of Public Health (CDPH) to establish water reclamation criteria. In 1975, the CDPH prepared Title 22 regulations to satisfy this requirement. Title 22 regulates production and use of reclaimed water in California by establishing three categories of reclaimed water: primary effluent, secondary effluent and tertiary effluent. Primary effluent typically includes grit removal and initial sedimentation or settling tanks. Secondary effluent is adequately disinfected, oxidized effluent which typically involves aeration and additional settling basins. Tertiary effluent is adequately disinfected, oxidized, coagulated, clarified, filtered effluent which typically involves filtration and chlorination. In addition to defining reclaimed water uses, Title 22 also defines requirements for sampling and analysis of effluent and specifies design requirements for treatment facilities.

Water Conservation Projects Act

California's requirements for water conservation are codified in the *Water Conservation Projects Act of 1985* (Water Code Sections 11950–11954), as reflected below:

- *11952 (a)*. It is the intent of the Legislature in enacting this chapter to encourage local agencies and private enterprise to implement potential water conservation and reclamation projects.

Senate Bill SBx7-7 2009 (Water Conservation Act of 2009)

SUMMARY: Requires state to achieve 20 percent reduction in urban per capita water use by December 31, 2020, requires agricultural water management plans and efficient water management practices for agricultural water suppliers, and promotes expanded development of sustainable water supplies at the regional level. Specifically, this part of SB x7 1:

1) Establishes statewide urban water conservation target of 10 percent by 2015, and 20 percent by 2020.

2) Establishes processes for urban water suppliers to meet the conservation targets:

   a) Requires urban retail water suppliers, individually or on a regional basis, to develop an urban water use target by July 1, 2011;

   b) Provides four (4) methods for urban water suppliers to choose from to set and achieve their water use target:

      1. 20% reduction in baseline daily per capita use, or

      2. Combination of efficiency standards for residential indoor use [55 gallons per capita daily (gpcd)]; residential outdoor use (Model Water Efficient Landscape Ordinance); and commercial, industrial, and institutional (CII) use (10 % reduction); or,

      3. 5% reduction in the Department of Water Resources (DWR) regional targets; or

      4. A method to be developed by DWR: Provisional method four (4) developed by DWR February 2011.

   c) Requires minimum 5 % reduction in base water use by 2020 for all urban water suppliers.

   d) Allows recycled water to count toward meeting urban supplier's water use target if recycled water offsets potable water demands.

   e) Allows urban suppliers to consider certain differences in their local conditions when determining compliance.

   f) Requires urban water suppliers to hold public hearings to allow for community input on the supplier's implementation plan for meeting their water use target, and requires the implementation to avoid placing a disproportionate burden on any customer sector.

   g) Conditions eligibility for water management grants and loans on an urban water supplier's compliance with meeting the requirements established by the bill.

3) Prohibits urban suppliers from requiring changes that reduce process water – defined in the bill as water used in production of a product – and allows urban water supplier to exclude process water from the development of the urban water target if substantial amount of its water deliveries are for industrial use.

4) Requires DWR review and reporting on urban water management plans and report to the Legislature by 2016 on progress in meeting the 20 percent statewide target, including recommendations on changes to the standards or targets in order to achieve the 20 percent target.

5) Creates a CII Task Force to develop best management practices (BMPs), assess the potential for statewide water savings if the BMPs are implemented, and report to the Legislature.

6) Re-establishes agricultural water management planning program.

7) Requires DWR to promote implementation of regional water resource management practices through increased incentives/removal of barriers and specifies potential changes.

8) Requires DWR, in consultation with SWRCB, to develop or update statewide targets as to recycled water, brackish groundwater desalination, and urban stormwater runoff.

Assembly Bill (AB) 939

The California Integrated Waste Management Act of 1989, or Assembly Bill (AB) 939, established the Integrated Waste Management Board, required the preparation, adoption and implementation of integrated waste management plans and also mandated that local jurisdictions divert at least 50 percent of all solid waste generated (from 1990 levels), by January 1, 2000[47].

California Code of Regulations Title 24

The State of California regulates energy consumption under Title 24 of the California Code of Regulations. The Title 24 Building Energy Efficiency Standards were developed by the California Energy Commission (CEC) and apply to energy consumed for heating, cooling, ventilation, water heating, and lighting in new residential and non-residential buildings. The CEC updates these standards periodically and adopted the latest standards in October 1, 2005, which provides new standards for outdoor lighting and residential lighting. These standards establish lighting zones that differentiate the amount of outdoor lighting by geographical location, and establish new performance standards for residential lighting.

Local Plans and Policies

City of Menlo Park General Plan

The following goal and policies within the Land Use Element of the City's General Plan are relevant to the project.

> *Policy I-G-1*: The City shall develop and maintain a parks and recreation system that provides areas and facilities conveniently located and properly designed to serve the recreation needs of all Menlo Park residents.
>
> *Goal I-H*: To promote the development and maintenance of adequate public and quasi-public facilities and services to meet the needs of Menlo Park's residents, businesses, workers and visitors.
>
> *Policy I-H-1*: The community design should help conserve resources and minimize waste.
>
> *Policy I-H-2*: The use of water-conserving plumbing fixtures in all new public and private development shall be required.
>
> *Policy I-H-3*: Plant material selection and landscape and irrigation design for City parks and other public facilities and in private developments shall adhere to the City's Water Efficient Landscaping Ordinance.

[47] County of San Mateo. *Five-Year Countywide Integrated Waste Management Plan Review Report*. Prepared by San Mateo County Department of Public Works. December 9, 2009.

Policy I-H-7: The use of reclaimed water for landscaping and other feasible uses shall be encouraged.

Policy I-H-12: Street orientation, placement of buildings, and use of shading should contribute to the energy efficiency of the community.

The following policies within the Housing Element of the City's General Plan are relevant to the project.

Policy III.D.1: The City will continue to promote energy conservation in the design of all new residential structures and will promote incorporation of energy conservation and weatherization features in existing homes.

Policy III.D.2: To the extent practical, the City will require that the design of all new residential development takes advantage of solar access.

The following goal and policy of the Open Space and Conservation Element of the City's General Plan are relevant to the project.

Goal 1: To develop a parks and recreation system which provides areas, facilities, and improvements conveniently located and properly designed to serve recreation needs of all residents of Menlo Park.

Policy 1: Provide open space lands for a variety of recreation opportunities. Make improvements, construct facilities, and maintain programs which encourage a maximum resident participation.

4.12.3 Impacts and Mitigation Measures

Significance Criteria

Implementation of the Plan would be considered to have a significant impact on public services and utilities if it would:

- Result in substantial adverse physical effects associated with the provision of new or physically altered police, fire, or school facilities, or the need for new or physically altered facilities; the construction of which could cause significant environmental impacts in order to maintain acceptable levels of service ratios, response times, or other performance objectives for any of the following services:
  - fire and police protection;
  - schools;
  - parks;
  - other public facilities;
- Not meet wastewater treatment standards of the Regional Water Quality Control Board;
- Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;

- Have insufficient water supplies available to serve the project from existing entitlements and resources, or require new or expanded entitlements;
- Result in a determination by the wastewater treatment provider which serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments;
- Be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs; and/or
- Not comply with federal, state, and local statutes and regulations related to solid waste.

Specific Plan Standards E.3.6.01, E.3.8.01, and E.3.8.03 and Guidelines D.5.05, D.5.13, D.5.20, D.6.07, D.6.08, E. 3.6.03 through E.3.6.05, E.3.6.07, E.3.8.04, E.3.8.10, E.3.8.11, E.3.8.15, E.3.8.16, and E.3.8.25. (see Table 3-2, *Menlo Park El Camino Real and Downtown Specific Plan Standards, Guidelines, and Policies*) would generally contribute to lessening Public Services and Utilities impacts in the Plan Area. In particular, these guidelines would encourage use of drought-tolerant plantings (helping reduce water use), provision of attractive and usable private open spaces (helping reduce usage of existing public parks and open spaces), LEED certification at the neighborhood and building levels (helping reduce general energy consumption), and solar design (helping reduce usage of energy for lighting and heating/cooling).

Impacts

Impact PUB-1: Implementation of the Specific Plan would not result in the need for new or physically altered police facilities. (Less than Significant)

Implementation of the Specific Plan could increase retail and commercial uses by about 330,000 square feet; residential units by approximately 680 dwelling units, and add approximately 380 hotel rooms. Development under the Specific Plan could generate approximately 1,357 new jobs/employees, as well as approximately 1,537 permanent residents. New retail uses would also increase the number of shoppers to the Plan area and the downtown. (See Section 4.11, *Population and Housing*.)

As a result of the Specific Plan, increased population in the Plan area could generate additional calls for police services and a need for additional patrol time related to crime, traffic and parking. However, even considering continued growth throughout the City, it is not anticipated that new police facilities would be required. According to the Police Department, existing facilities would be capable of adequately serving development in the Specific Plan area. Implementation of the Specific Plan would not require the Police Department to expand its current service boundary to include the Specific Plan area because it is already in Beat 1 served by the Police Department.[48]

[48] Menlo Park Police Department. Telephone and email communication with Nicole Acker, Management Analyst-Training/Hiring/Media Relations, January 26 and February 22, 2010.

Based on current service levels and service levels expected to occur under the Specific Plan, it is not expected that new police department facilities would need to be constructed.[49] Therefore, the Specific Plan would result in less-than-significant impacts to police facilities.

Mitigation: None required.

Impact PUB-2: Implementation of the Specific Plan would not result in the need for new or physically altered fire and emergency service facilities. (Less than Significant)

Development of the Specific Plan area, and the resulting increase in the number of employees, customers, and potential residents, would result in an incremental increase in calls for fire and emergency medical services. The operation or construction of individual projects could affect Menlo Park Fire Protection District (MPFPD) response times but more than likely would not require additional staff.[50] The Specific Plan would not extend the geographic boundaries of the MPFPD service area; all sites within the Plan area are currently already served by the MPFPD. The Specific Plan would not significantly modify the roadway network, with the exception of the Chestnut Street Paseo, which would still retain emergency vehicle access and for which there would also still be several nearby alternate routes.

Individual development proposals would be required to meet MPFPD standards related to fire hydrants, water fire flow requirements, spacing of hydrants and other fire hydrant requirements, design of driveway turnaround and access points to accommodate fire equipment, fire apparatus access roads, and other fire code requirements. Fire sprinklers would be installed throughout the proposed new buildings. This would include automatic fire sprinklers in all new one- and two-family homes and townhouses, as made effective January 1, 2011 by the 2010 California Residential Code.[51] The MPFPD would review the individual development construction plans and inspect the construction work to ensure that proposed buildings meet State and local Building and Fire Code requirements. In addition, as discussed in the Water Storage and Distribution section, existing fire flow and pressure in the Plan Area are adequate to accommodate future development. The maximum building heights being proposed for the Plan area would be 60 feet. Several buildings in and around the Plan area already approach or exceed this height, including buildings at 1330 University Drive (90 feet), 800 El Camino Real (56 feet), 1000 El Camino Real (49 feet), and 1010 El Camino Real (46 feet).

The MPFPD would continue to serve the project area and respond to calls for assistance from its existing stations. Fire Stations 6, 1, 3, and 4 are in close proximity to the Plan area and would serve the individual projects as described in the setting section above. The San Mateo County Emergency Medical Services Joint Powers Agreement establishes a time target standard of

[49] Menlo Park Police Department. Telephone and email communication with Nicole Acker, Management Analyst-Training/Hiring/Media Relations, January 26 and February 22, 2010.
[50] Schapelhouman, Harold, Fire Chief, Menlo Park Fire Protection District, letter communication, August 11, 2010.
[51] National Fire Protection Association, NFPA applauds states' actions on home fire sprinklers, http://www.nfpa.org/newsReleaseDetails.asp?categoryid=488&itemId=46068&cookie%5Ftest=1, accessed July 8, 2010.

6.59 minutes for the closest medical first response unit. For fire first response, two distance target standards consist of the Insurance Services Office standard of 1.5 miles maximum travel distance for Fire Engines and 2.5 miles maximum travel distance for Aerial Ladder Trucks. In addition, the National Fire Protection Association (NFPA) Standard 1710 for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments 2010 edition, under Section 4.1.2.1, identifies target standards of 240 seconds or less (4 minutes or less) travel time for the arrival of an Engine Company at a fire suppression incident and 480 seconds or less (8 minutes or less) travel time for the deployment of a first alarm assignment at a fire suppression incident including an aerial ladder truck. Given the current distribution of existing resources, these standards are currently met within the Plan area.[52] In addition, as noted earlier, the District has an automatic aid agreement with the City of Palo Alto to provide back up and respond in the event of a major fire. The Palo Alto Fire Department has a ladder truck located at Fire Station #6 on the Stanford Campus at 711 Serra Street, which is approximately two miles from the project area at its closest point and 3.5 miles at its farthest point. The automatic aid from this station would help ensure adequate ladder truck response in the event that MPFPD time to the Plan area from Fire Station 1 (300 Middlefield Road) is delayed due to train activity on the railroad tracks that cross Glenwood Avenue, Oak Grove Avenue, and Ravenswood Avenue.

As noted in the setting section above, the MPFPD is independently exploring station modernization and reconfiguration options. Under the current configuration, Truck One, MPFPD's 100-foot aerial ladder truck, responds from Station 1. To better serve proposed development in eastern Menlo Park, the MPFPD is considering moving Truck One to Station 2, located at 2290 University Avenue in East Palo Alto, or Station 77, located at 1467 Chilco Avenue in Menlo Park. However, plans are also underway to accommodate a second aerial ladder truck in western Menlo Park. In 2008, the MPFPD purchased property behind the existing Station 6 building with the intent of creating functional space to rebuild and modernize the existing facility. According to MPFPD, the existing facility, built in 1953, no longer adequately meets the existing and projected future needs of the community. The new facility is being designed to accommodate larger apparatus such as an aerial ladder truck and to aid MPFPD in serving the current and anticipated needs of the community. This potential reconfiguration would not negatively affect the MPFPD's ability to meet the distance and time response standards, and could improve it.

In addition to the planning efforts for a replacement of Station 6, the recent approval of the Menlo Gateway project (shown in Table 4-1 as 100-155 Constitution Drive and 100-190 Independence Drive) included a provision that allowed the Menlo Park City Manager the discretion to require the Menlo Gateway project sponsor to pay up to $25,000 to the City to cover the City's contribution toward the cost of a fire impact fee study to be performed by the MPFPD. Use of the $25,000 for this purpose would reduce other required payments on the part of the Menlo Gateway project sponsor. Although the specific focus of the study has not yet been determined, the Fire District is interested in studying options for responding to buildings that would be beyond the reach of the 24-foot ground ladders carried on Fire Engines, and evaluating the need to impose a

[52] Schapelhouman, Harold, Fire Chief, Menlo Park Fire Protection District. Personnel communication with ESA, August 11, 2010.

capital facilities fee on developers to fund future changes to District facilities and/or operations, including possible purchases of equipment such as an additional aerial ladder truck.

The Specific Plan would permit building heights up to 60 feet with set-backs of up to 20 feet and upper floor massing set-backs that use a 45 degree angle. Buildings of this shape and height would create a tactical operational challenge that would be beyond the reach of 24-foot ground ladders carried on Fire Engines and could only be served by an aerial ladder truck. As noted earlier in this section, the Plan area and its vicinity is already occupied by a number of similar height buildings that would continue to be served by the MPFPD even if the Specific Plan was not adopted. Under the current configuration, Truck One responds from Station 1, which is approximately 1.97 miles and 5 minutes away from the farthest point in the Plan area and well within the ISO and NFPA time and distance standards.[53] Based on the proximity of Fire Stations 6, 1, 3, and 4 to the Plan area, and the existing and future ability of the MPFPD to meet the ISO and NFPA time and distance standards, the proposed Specific Plan would result in less-than-significant impacts on existing fire and emergency facilities.

Mitigation: None required.

Impact PUB-3: Implementation of the Specific Plan would increase public school enrollment. (Less than Significant)

The Specific Plan area is located within the Menlo Park City School District (MPCSD) and the Sequoia Union High School District (SUHSD). Development under the Specific Plan could result in the construction of up to 680 new residential units in the Specific Plan area. As allowed by State law as well as MPCSD and SUHSD policy, new employees working in the Plan area who do not live within the districts' boundaries may choose to send their children to schools in these districts. However, this number is likely to be small and is too speculative for impact assessment under CEQA.

Menlo Park City School District (MPCSD)

The Menlo Park City School District uses a student yield factor of 0.5 students per dwelling unit for kindergarten through eighth grade. Using this rate, the Specific Plan would generate approximately 340 students per year when all housing units are built. However, the MPCSD's enrollment projection consultant has noted that while student yields can approach 0.5 students per dwelling unit for detached single-family housing, newer attached housing (the type most likely to be constructed in the Plan area) can be estimated at 0.12 students per dwelling unit.[54] At this rate, the 680 new housing units in the Plan area would be expected to generate 82 students per year at full buildout.

[53] Schapelhouman, Harold, Fire Chief, Menlo Park Fire Protection District, letter communication, August 11, 2010.
[54] Email correspondence from Tom Williams, Enrollment Projection Consultants, March 18, 2011.

The phenomenon of lower yield rates for multi-family housing can also be seen through Census data, which in 2000 (the most recent year for which enrollment data is currently available) showed that Menlo Park's Census Tracts 6125 and 6126 (which are predominantly composed of multi-family housing) generated 0.09 public elementary school students per dwelling unit, while the surrounding four Census Tracts (which are predominantly composed of single-family housing) generated 0.25 public elementary school students per dwelling unit. While overall student yields are known to have increased in the MPCSD since 2000, the relative difference between single- and multi-family housing yields has likely not changed substantially.

The MPCSD's detailed enrollment projections indicate that District-wide enrollment would increase by approximately 14.2 percent from 2009 to 2014 and decline by approximately 1.1 percent from 2014 to 2019.[55] These projections incorporate an estimate of the Plan's impact on the MPCSD; specifically that 274 new attached housing units could be constructed and occupied by 2019, which would generate approximately 33 students at the 0.12 yield factor. The small enrollment decline during the 2014 to 2019 projections is due to the fact that this slightly new student growth would happen concurrently with partly reduced yields from existing housing stock. Enrollment projections are not available past 2019, due to the fact that projections are based primarily on existing enrollments and birth data, which do not permit longer-range estimates.

The increase in student population over the next few years has been accounted for by MPCSD and Measure U bond funds are currently being used to modernize and improve existing school facilities to accommodate the projected student population growth.

Sequoia Union High School District (SUHSD)

The enrollment for Menlo-Atherton High School in the Sequoia Union High School District was 2,089 students for the school year 2008/09. The Sequoia Union High School District uses a student generation rate of 0.357 students per residential unit to project future student enrollment. Using this rate, the Specific Plan would generate approximately 243 new students per year in the Sequoia High School District when all 680 housing units are constructed and occupied. However, as noted in the discussion of MPCSD projections, multi-family attached housing typically generates lower yields than single-family housing. While the SUHSD has not provided an equivalent breakdown of single- versus multi-family yields, a potential multi-family rate of 0.09 students per attached housing unit can be estimated using the relative MPCSD weights[56], which would result in approximately 62 high school students being generated by the Plan area's new housing. Because high school enrollments typically follow elementary-level trends from a few years prior, it can be expected that SUHSD enrollment increases from the Plan area will generally happen concurrently with a leveling off of student growth from existing housing stock.

[55] Enrollment Projection Consultants, 2009 Enrollment Forecast Study for Menlo Park City School District, October 12, 2009.

[56] The 0.12 multiple-family elementary school generation rate represents 24 percent of the overall 0.5 elementary school generation rate. 24 percent of the overall 0.357 high school generation rate would be 0.9.

Given the enrollment trends, and school facilities expansion already underway, schools within the two districts will have the capacity to accommodate the project-related increase in school age children. Therefore, the impact of the Specific Plan on school facilities would be less than significant.

In addition, the California State Legislature, under Senate Bill 50 (SB 50)[57] has determined that payment of school impact fees shall be deemed to provide full and complete school facilities mitigation. All new developments would be required to pay appropriate school impact fees and as such would be considered to have fully mitigated their individual impacts.

Mitigation: None required.

Impact PUB-4: Implementation of the Specific Plan would increase the use of parks. (Less than Significant)

Development under the Specific Plan could generate about 1,357 new employees as well as approximately 1,537 permanent residents over the course of 30 years. Employees and potential residents of the Plan area would utilize nearby parks as well as other parks and open space resources throughout the City. Development within the Plan area would include the creation of additional open space areas in the form of plazas, pocket parks, and private open space.

New permanent residents in the Plan area would likely use the newly created spaces as well as existing recreational resources, such as Burgess and Nealon Park, and other larger recreational areas. As noted in the environmental setting subsection, the General Plan sets forth a goal of five acres of developed parkland per 1,000 persons.[58] Based on 220 acres of City parkland (see Table 4.12-2) and an estimated 32,200 City residents in 2010 (see Section 4.11, Population and Housing), the City currently exceeds this goal by providing 6.8 acres of parkland per 1,000 persons. Specific Plan-related residential population growth would reduce this ratio minimally, to 6.5 acres per 1,000 persons, still well above the standard of 5 acres of parks per 1,000 persons. In addition, the Specific Plan would include new publicly-accessible building frontage breaks on El Camino Real, as well as pocket parks, a Santa Cruz Avenue Central Plaza, and Chestnut Street Paseo in downtown. While exact measurements of these spaces will not be

[57] On August 27, 1998, the Governor signed into law Senate Bill 50 (Greene) ("SB 50"), the Leroy F. Greene School Facilities Act of 1998, which is identified as Chapter 407, Statutes of 1998. SB 50 imposes new limitations on the power of cities and counties to require mitigation of school facilities impacts as a condition of approving new development. SB 50 completely relieves cities and counties of the power to require development fees or other exactions in excess of the statutory maximum amounts to help fund school facilities. SB 50 amends Government Code Section 65995(a) to provide that only those fees expressly authorized by Education Code Section 17620 or Government Code Sections 65970 and following (the old interim facilities fees) may be levied or imposed in connection with or made conditions of any legislative or adjudicative act by a local agency involving planning, use, or development of real property. Subdivision (h) of section 65995 declares that the payment of the development fees authorized by Education Code Section 17620 is "full and complete mitigation of the impacts of any legislative or adjudicative act . . . on the provision of adequate school facilities." Section 65995(i) prohibits an agency from denying or refusing to approve a legislative or adjudicative act involving development "on the basis of a person's refusal to provide school facilities mitigation that exceeds the amounts authorized [by SB 50]."

[58] City of Menlo Park, 1994. General Plan

available until precise designs are completed, the conceptual diagrams in the Specific Plan indicate that approximately two acres of new public parks, plazas, and other open spaces could be added, which would increase the ratio to 6.9 acres per 1,000 persons. Extended sidewalks could also be considered new enhanced public spaces, although these are not quantified in the two-acre estimate. In addition, new residential developments would be required to pay recreation in-lieu fees to mitigate any impacts.

Given the availability of City-maintained parks, in addition to regional parks and the public school resources for which there is a joint use agreement, population growth related to development under the Specific Plan is not anticipated to increase the use of recreational resources such that substantial physical deterioration would occur. As such, the impact of the Specific Plan on park and recreational resources would be less than significant.

Mitigation: None required.

Impact PUB-5: Implementation of the Specific Plan would increase the demand for water supply. (Less than Significant)

Water Supply Analysis Methodology

Water Supply and Infrastructure

The analysis in this section focuses on the nature and magnitude of the change in levels of water use compared with existing and projected water use in the project area and the Bear Gulch District's water service area. To determine potential impacts, future water consumption was estimated from demand projection calculations and quantitative evaluation of data for existing land uses, approved projects, and proposed development, including that proposed for the project area. The primary resources used for this analysis include the WSA for the Proposed El Camino Real/Downtown Specific Plan Project, Atkins (April 2011); City of Menlo Park UWMP, adopted December 2005; the SFPUC UWMP (December 2005), the SFPUC Water Supply Improvement Program (WSIP) and its Program Environmental Impact Report, and Association of Bay Area Governments (ABAG) 2009 Projections Report. The Bay Area Water Supply and Conservation Agency (BAWSCA) has also completed a Long-Term Reliable Water Supply Strategy to improve supply reliability and reduce demand. The WSA concluded that even modest success in implementing these strategies would improve water supply availability on the Peninsula. There is also an anticipated increased in SFPUC supply reliability due to the implementation of the improvements included in the WSIP, which are currently underway.

Installation of new connections to the water distribution system could include improvements to permanent water distribution lines and appurtenances, corresponding to the construction phasing of the specific projects. The piping system within the project area would be sized to accommodate development; additional on-site water delivery system would consist of water distribution lines within the local street rights-of-way. Water supply design specifications would comply with the City of Menlo Park's standards regarding requirements for design and operation of water

distribution facilities. Final approvals by the City would be necessary prior to delivery of water to the project area. Any impacts associated with the installation of water supply infrastructure on-site are evaluated as part of the construction-related impacts analyzed in the other technical sections of this EIR, as appropriate.

Demand Analysis

The WSA prepared for the EIR developed water generation factors and derived water demand for the project area. The expected water use of the prospective development was determined by analyzing similar land uses and assigning a demand factor for each use. The demand analysis analyzes water use at the project-level under two growth scenarios: 1) the proposed Specific Plan; and, 2) Plan area identified in ABAG's 2009 Projections Report Priority Growth Area (maximum density scenario). The first growth scenario is used for the following project-level analysis, while the second growth scenario is described in more detail in the WSA and is used within this chapter's cumulative analysis as it relates to water demand within Cal Water's service area.

The expected water use of the proposed project was determined by analyzing similar land uses and assigning a demand factor for each use. This analysis evaluates the net demand at the project-level within the Plan area. Build-out of the proposed project is expected to occur incrementally over the next 30 years, as changes in the development market create opportunities for redevelopment. However, for conservative water supply planning purposes water demand in the project area is assumed to occur immediately and is added to existing demand to present the quantitative data needed to analyze current and future demand within the Bear Gulch District's service area. Projected demand generated by the proposed project (680 residential units and 1,357 new jobs), existing demand and planned future uses are extended over a 25-year planning horizon.

The demand factors were formulated based on data from current and historical uses at similar facilities in Northern California and the San Francisco Bay Area; however, installation of water efficient fixtures throughout the new facilities and use of drought-tolerant landscaping materials could further reduce on-site water demand from the proposed development components.

Project Evaluation

The growth projected in the Specific Plan is shown in **Table 4.12-5**. The proposed land use changes that could occur as a result of implementation of the proposed project would potentially create a net increase in water demand of 222 AFY or an average demand of 198,296 gallons per day (gpd) (0.20 mgd).

The WSA assumes that the proposed Specific Plan would use water supplied through surface water rights and entitlements from the Peninsula and Alameda Systems. These supplies would be delivered through existing Cal Water and Bear Gulch District's supply facilities and new water infrastructure, if needed, constructed for delivery into the project area per the requirements of the City of Menlo Park. In an effort to reduce water demand, those new developments could be required to install low-flow fixtures, appliances and hardware to reduce water consumption per the City's General Plan Policy I-H-2. All landscaping would be required to adhere to the City's Water Efficient Landscaping Ordinance.

TABLE 4.12-5
CITY OF MENLO PARK EL CAMINO REAL-DOWNTOWN SPECIFIC PLAN AREA (PROPOSED PROJECT) LAND USE AND WATER DEMAND

Specific Plan Land Uses (net increases)	Area or Type	Units	Water Demand Factor	Gallons per Day	MGD	AFY
Residential Development- Multiple Family	680	DU[a]	112 gpd/DU[c]	76,160	0.08	85.31
Retail Space	91,800	sf[b]	0.53 gpd/sf	48,654	0.05	54.50
Commercial Space	240,820	sf	0.10 gpd/sf	24,082	0.02	26.98
Hotel-Lodging Facilities	380	Rooms	130 gpd/room	49,400	0.05	55.34
Net Change in Water Demand	~	~	~	198,296	0.20	222.12

[a] DU = Dwelling Units
[b] sf = square feet
[c] Residential water demand factors provided by ESA (demand generated by multiple family units in Santa Clara County) April 2009.

SOURCE: City of Menlo Park and ESA April 2010 Based on preliminary demand data from PBS&J water demand factors-can be modified to reflect water efficient landscaping and hardware fixtures, Green Building Objectives or LEED certification, etc.

The Plan area occupies one of Menlo Park's most prominent arterial corridors and the City's downtown core, and includes a Caltrain station from which service is provided to San Francisco and San Jose. According to the available information, the proposed project area covers approximately 130 acres. **Table 4.12-6** illustrates the development program for the project area as envisioned in

TABLE 4.12-6
EL CAMINO REAL/DOWNTOWN SPECIFIC PLAN DEVELOPMENT PROGRAM

Land Use/Development Type	Area/Space	Unit
Residential	680	Dwelling Units
Retail Space	91,800	Square Feet
Commercial Space	240,820	Square Feet
Hotel/Lodging	380	Rooms

SOURCE: City of Menlo Park and ESA, April 2010.

the Specific Plan. Each of these development types would require new water service within the proposed project area. The exact build-out will take place incrementally and will likely vary from the initial projection over the 30-year time frame.

The proposed Specific Plan would increase the intensity of uses in the project area over existing conditions. As proposed, the Specific Plan would increase the number of residential units by 680, the net square footage by 332,620 square feet of new retail and commercial space and add 380 new hotel/lodging accommodations. The proposed project would also result in a net increase of employment of approximately 1,357 persons (refer to Section 4.11, Population and Housing), as well as guests at the restaurants and hotel/lodging facilities. Table 4.12-5 above shows estimated annual average water demand 0.20 mgd (222.12 AFY) for the proposed project. This is considered a net increase in demand over existing conditions since the proposed project would construct new

structures, buildings and facilities over the existing development. The WSA concludes under normal year conditions that the Bear Gulch District would have sufficient capacity to meet the water demands of the proposed project without compromising existing demands. As previously stated, SFPUC can reliably deliver the purchase request submitted by the BAWSCA member agencies (assumes implementation of the SFPUC's Water System Improvement Plan or after year 2018, increased diversions from the Tuolumne River under San Francisco's existing water rights). As such, in normal years, Cal Water would have sufficient water supply to serve the proposed project and the impact is less than significant. In critical dry and multiple-dry-year events, when the SFPUC could impose 20 percent reductions in supply, Cal Water and the Bear Gulch District have in place a water shortage contingency plan (California Water Code Section 10632) to balance supply and demand. With a water shortage contingency plan in place, plus the addition of supplies developed through the BAWSCA's Long-Term Water Supply Strategy combined with the SFPUC's WSIP improvements, Cal Water and the Bear Gulch District have sufficient water supplies available to serve the proposed project.

As discussed previously in the Regulatory Setting, development within the project area would be required to comply with the City of Menlo Park General Plan Policies I-H-2, I-H-3, I-H-7, and Municipal Code Chapter 12.44, which requires the installation of low-water use plumbing fixtures and landscaping in new development. In addition, Senate Bill X 7-7 (the Water Conservation Act of 2009) calls for reducing demand by 10 percent conservation per capita in 2015 and 20 percent by 2020. Because Cal Water can regulate its deliveries accordingly in response to a regional water supply reduction and mandate demand customer reductions within its service area, a less-than-significant impact would occur as result of implementation of the proposed Specific Plan.

Impact PUB-6: Implementation of the Specific Plan would not require or result in the construction of new water treatment facilities or expansion of existing facilities. (Less than Significant)

The potential water demands at the project area, depending on specific onsite development of either the proposed project or the Maximum Density projected by ABAG, would range from 0.20 mgd to 0.34 mgd above existing conditions. As shown in **Table 4.12-7**, water demands in Bear Gulch District's service area are expected to increase over the next 25 years and the demands at the project area would contribute to service area increases.

Because SFPUC has planned for improvements to the water treatment system to improve system reliability and accommodate projected growth in its regional service area, the proposed project, under any of the scenarios, would not prompt a need to expand treatment facilities in order to meet its demands. As stated above, SFPUC's WTPs currently have a maximum combined treatment capacity of 340 mgd, if operated continuously. After 2011 with the addition of the Tesla WTP (315 mgd), SFPUC can reliably deliver 655 mgd, which is well in excess of the demands within Cal Water and Bear Gulch District's service area, now and over the next 20 years.

TABLE 4.12-7
SERVICE AREA PROJECTED GROWTH AND WATER DEMAND

Bear Gulch District Draft 2010 UWMP Demand Projections						
	2010	**2015**	**2020**	**2025**	**2030**	**2035**
Projected Growth in Bear Gulch District's Service Area						
Connections	18,027	18,457	18,898	19,350	19,814	20,291
AFY	13,413	13,755	14,107	14,471	14,848	15,237
MGD	11.97	12.28	12.59	12.92	13.26	13.60

SOURCE: Bear Gulch District 2010 Preliminary Draft UWMP.

In order to ensure proper distribution, SFPUC also manages the regional conveyance system used to transport potable water supplies to the wholesale water agencies. In addition, SFPUC manages and maintains all the WTPs; any improvements or expansions are the responsibility of SFPUC and would not adversely affect Cal Water, the Bear Gulch District or any of the development scenarios proposed.

The Bear Gulch District's treatment facility is located adjacent to the Bear Gulch Reservoir. The water is clarified, filtered, and chloraminated in compliance with the Surface Water Treatment Rule and the Safe Drinking Water Act, and then pumped into the distribution system. The Bear Gulch District anticipates treating at least 1.12 mgd at its surface water treatment plant. The treatment plant, which has a rated capacity of 6 mgd could easily accommodate the increase in demand generated by the proposed Specific Plan of 0.20 mgd.

Therefore, as a result of the proposed project, no new or expanded water treatment facilities or storage would be required. Consequently, this impact is considered less than significant.

Impact PUB-7: Implementation of the Specific Plan would not exceed wastewater treatment requirements or require construction of new wastewater facilities or expansion of existing facilities. (Less than Significant)

As envisioned, the full build-out of the Plan area could result in 680 additional residential units; approximately 330,000 square feet of additional retail and commercial space; and 380 additional hotel rooms. Using a conservative sewer generation estimate based on a 10 percent reduction from water consumption (due to direct ground infiltration from irrigation or other outdoor uses), the additional sewer generation associated with this level of growth would be approximately 0.3 mgd. This equates to an approximately two percent increase over current treatment rates at the South Bayside System Authority (SBSA) (15 mgd) and one percent increase over the current SBSA capacity (29 mgd).

Using the same conservative sewer generation estimate based on a 10 percent reduction from water consumption, development under the Specific Plan would generate an average wastewater flow rate of approximately 175.5 gallons per minute (gpm) and peak flows of approximately 614 gpm and 884,652 gallons per day (gpd) as shown in **Table 4.12-8**.

TABLE 4.12-8
PROPOSED ESTIMATED SEWAGE GENERATION RATES – FULL BUILDOUT (30 Years)

Use Description	Units	Floor Area (sf)	Generation Rate (gpd/sf)	Average Daily Flow (gpd)	Peaking Factor	Peak Flow (gpd)
Residential	680	–	0.18 gpm/unit	176,256		
Retail Space	–	91,800	0.18 gpd/sf	16,524		
Commercial Space	--	240,820	0.09 gpd/sf	21,674		
Hotel	380 rooms	–	100.8 gpd/unit	38,304		
		Total Projected Demand		**252,758**	**3.5**	**884,652**

SOURCE: BKF, 2010

Wastewater Conveyance

West Bay Sanitary District (WBSD) is currently undertaking a Master Plan study, which will analyze the existing carrying capacity of the system's trunk lines and project any future need for increased conveyance capacity. The Master Plan will include wastewater flow average volume and peak rate projections based on anticipated growth in the WBSD service area through 2030, including build-out of the Specific Plan. Although the Master Plan will not be complete until 2011, preliminary results show the need for increased capacity is minimal.[59]

Wastewater Treatment

As noted above in the Public Utilities discussion in this section, the SBSA receives a dry weather average well below the existing treatment plant capacity. Wet weather flows, which increase significantly due to inflow and infiltration of rainwater into the wastewater system, are accommodated through a combination of the peak wet weather treatment capacity and, when necessary, WBSD's 10-million-gallon equalization basin. Although development under the Specific Plan was not assumed in SBSA's Conveyance System Master Plan, implementation of the associated Capital Improvement Program will result in surplus capacity during dry and wet weather conditions.

Mitigation: None required.

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[59] Kitajima, Bill, West Bay Sanitary District, email communication, July 22, 2010.

Impact PUB-8: The Specific Plan would be served by a landfill with sufficient permitted capacity to accommodate the Specific Plan's solid waste disposal needs, and would comply with federal, State, and local statutes and regulations related to solid waste. (Less than Significant)

Implementation of the Specific Plan would increase the amount of development in the Plan area, thereby increasing the generation of solid waste. The California Department of Resources Recycling and Recovery (CalRecycle) estimates disposal rates for various industries. Solid waste generation rate estimates include the amount of waste created by residences or businesses over a certain amount of time, inclusive of all materials discarded, whether or not they are later recycled or disposed in a landfill. The assumption for disposal rates is that land uses of a certain type (e.g., residential, commercial, hotel rooms) dispose similar wastes at similar rates (per unit, square foot or room), regardless of the location or size of the business.

As mentioned above, the City achieved a diversion rate of 55 percent in 2005 and 2006. It is assumed that development under the Specific Plan would be subject to the same programs for waste reduction and recycling and would, therefore, achieve similar diversion rates as the rest of the City.

Table 4.12-9 shows the estimated waste disposal rates based on the Specific Plan's development program.

TABLE 4.12-9
ESTIMATED WASTE DISPOSAL RATES BY DEVELOPMENT TYPE

Land Use	Units, Square Footage, Rooms	Waste Generation Rate	Estimated Waste (tons/year)	Estimated Landfill Waste (55% diverted) (tons/year)
Residential	680 units	0.42 lb/unit/day	52	29
Commercial/Retail	330,000 sf	5 lbs/1,000 sf/day	301	166
Hotel	380 rooms	2 lb/room/day	139	76
		Total	**492 tons/year (1.3 tons/day)**	**271 tons/year (0.7 tons/day)**

SOURCE: CalRecycle. Estimated Solid Waste Generation Rates for Residential, Commercial, and Service Establishments, www.ciwmb.ca.gov/WasteChar/WasteGenRates.htm, accessed February 10, 2010b.

As indicated in Table 4.12-3, development under the Specific Plan could be expected to dispose of a conservative estimate of 492 tons of solid waste per year at buildout, or 1.3 tons per day, all of which would go through the San Carlos Transfer Station. Assuming a consistent diversion rate of 55 percent, approximately 271 tons of solid waste per year at buildout, or 0.7 tons per day would eventually be disposed of in the Ox Mountain Sanitary Landfill.

The Ox Mountain Sanitary Landfill has a permitted capacity of 3,598 tons per day and sufficient remaining capacity to accept its maximum permitted daily amount through around 2023. As of 2007,

the landfill was reporting less than 2,000 tons per day.[60] As such, because it is such a small increase, the landfill would be able to accommodate the approximate 0.7 tons per day (or approximately 0.02 percent of permitted daily capacity) (at buildout) from the development under the Specific Plan. The San Carlos Transfer Station has a permitted capacity of 3,000 tons per day and receives 1,500 to 1,900 tons per day, so it would also be able to accommodate the approximate 1.3 tons per day of additional solid waste (at buildout) from the development under the Specific Plan.

As a result, the Specific Plan would have a less-than-significant impact on landfill capacities, and would not violate solid waste regulations.

Implementation of the Specific Plan could result in demolition of approximately 350,000 square feet of existing buildings, which could generate considerable amounts of demolition and construction waste. The individual future projects would be required to comply with the City's Construction and Demolition Recycling Ordinance, which requires salvage or recycling of at least 60 percent of construction-related solid waste generation. Therefore, construction and demolition waste would not result in a significant impact.

Mitigation: None required.

Impact PUB-9: The Specific Plan would not exceed existing gas and electric supplies. (Less than Significant)

The Specific Plan would intensify development in the Plan area, thereby increasing demand for gas and electric service. The Plan area has existing connections to PG&E's gas and electric facilities, as described above under the Environmental Setting subsection above. It is recognized that extensions of electrical and gas distribution systems to individual parcels may be required to accommodate new development. Such extensions would be provided by PG&E upon request and paid for by the individual future project sponsors. These extensions of the gas and electric distribution system would be relatively minor in the context of the utility's overall capacity and distribution system and would not be expected to interfere with normal PG&E services.

The energy consumption demands of the Specific Plan would conform to the State's Title 24 energy conservation standards such that the development would not be expected to wastefully use gas and electricity. While precise design plans for future development projects are not available at this time, such development projects would be expected to consider use of low-energy glass windows, renewable energy, efficient HVAC systems, and maximum natural lighting designs to reduce electricity use. As discussed in Chapter 3, Project Description, the Specific Plan would seek to obtain LEED certification at the neighborhood level of certain larger developments, which is designed to maximize energy efficiency. Moreover, the Specific Plan would require LEED

[60] Cal Recycle, Active Landfills Profile for Ox Mountain Sanitary Landfill (41-AA-0002), http://www.calrecycle.ca.gov/Profiles/Facility/Landfill/LFProfile1.asp?COID=1&FACID=41-AA-0002, accessed July 8, 2010

Silver certification for certain subsequent development projects, as specified in Specific Plan Standard E.3.8.03. In addition, Mitigation Measure GHG-1 discusses the existing City requirements for a 15 percent energy usage improvement, cool roof or equivalent energy saving construction, and duct testing for all new construction, which would further reduce energy consumption in the Plan area.

In addition, gas and electric service to the Plan area would be provided to meet the needs of the Specific Plan as required by the California Public Utilities Commission, which obligates PG&E to provide service to its existing and potential customers. Since the Specific Plan would comply with Title 24 conservation standards and would be served by PG&E, development under the Specific Plan would not directly require the construction of new energy generation or supply facilities and there would be no substantial adverse environmental impacts related to energy demand, and consequently, the impact would be less than significant.

Mitigation: None required.

Cumulative Impacts

Impact PUB-10: Implementation of the Specific Plan in combination with other past, present, and reasonably foreseeable plans and projects would not result in cumulative impacts with respect to public services or utility service systems. (Less than Significant)

Geographic Scope

The cumulative analysis encompasses other past, present, and reasonably foreseeable plans and projects within the City of Menlo Park that could contribute to cumulative impacts on public services and/or utility service systems. Past projects include projects that already exist in the built environment. Present projects include those approved and those under construction. Future projects include projects and plans in development or pending approval, described in Table 4-1.

Public Services

As discussed above, implementation of the Specific Plan would not result in significant impacts on police services, fire protection and emergency medical services, public schools, or parks and recreation facilities. Considered in combination with other past, present, and reasonably foreseeable development, there could be an increased demand for public services. In addition, projects identified for consideration in the cumulative scenario would be addressed case by case during the review of such development, and such projects would be required to pay relevant recreation in-lieu, school impact, and other standard mitigation fees. This process and fee payment would ensure that services to accommodate current and future citywide growth could be reasonably provided within the cumulative context. Therefore, it is not anticipated that implementation of the Specific Plan, when considered with other foreseeable development in the area, would result in a cumulative impact on public services.

Impact PUB-11: The proposed project, in combination with other development within the City of Menlo Park, could have insufficient water supplies available to serve the project from existing entitlements under normal, dry and multiple dry years. (Less than Significant)

The WSA prepared for the EIR for the proposed Specific Plan project considered the growth in demand estimated in the ABAG's Projections 2009 Report. This data can be considered as representing a cumulative growth scenario that could occur as a result of redevelopment at or near the project site. As shown in **Table 4.12-10**, the Specific Plan and other projects within the Bear Gulch District could create a net increase in water demand of 379 AFY or an average demand of 338,719 gpd (0.34 mgd).

TABLE 4.12-10
EL CAMINO REAL/DOWNTOWN SPECIFIC PLAN AREA LAND USE AND WATER DEMAND FROM ASSOCIATION OF BAY AREA GOVERNMENTS 2009 PROJECTIONS

Specific Plan Area (Net Increases)	Area or Type	Units	Water Demand Factor	Gallons per Day	MGD	AFY
Residential Development - Multiple Family	1,065	DU[a]	112 gpd/DU[b]	119,280	0.12	133.61
Jobs - Employment (Retail – Commercial with Office Space)	5,173	Jobs	42.42[c] gpd/ employee	219,439	0.22	245.80
Net Change in Water Demand				338,719	0.34	379.41

[a] DU = Dwelling Units
[b] Residential water demand factors provided by ESA (demand generated by multiple family units in Santa Clara County) April 2009.
[c] SFPUC average daily use per employee (SFPUC Water Supply Availability Study, October 2009).

SOURCE: Based on preliminary demand data from PBS&J water demand factors

The Bear Gulch District currently uses 11.18 mgd or approximately 31.3 percent of Cal Water's 35.68 mgd allocation from SFPUC. The balance is used to meet demand in Cal Water's Bayshore Districts. Although the proposed Specific Plan and other projects would contribute to demand within BGD's service area, this new demand would be accommodated through Cal Water's ISG (Individual Supply Guarantee) of 35.68 mgd. This analysis recognizes that in the event that the Bear Gulch District reaches its ISG maximum, in normal years, it could use additional supplies available to the BASWCA members to meet demand; because, the aggregated demand within the BAWSCA members has not reached its maximum of 184.0 mgd, and no supply limitations under these conditions are being enforced. The demand of the Specific Plan and other projects can be accommodated under normal year conditions and, if need be Cal Water could purchase supplemental supplies from the SFPUC without penalties.

As previously discussed, SFPUC can deliver an average of 239 mgd based on a hydrologic period equivalent to that experienced from 1921 to 1999 with no deficiencies and can meet the demand of its Retail and Wholesale customers.[61] SFPUC can reliably deliver the purchase request submitted by the BAWSCA member agencies (assumes implementation of the SFPUC's Water System Improvement Plan or after year 2018, increased diversions from the Tuolumne River under

[61] San Francisco Public Utilities Commission. April 2000. *Water Supply Master Plan*. p. 22.

San Francisco's existing water rights). As such, in normal years, the Bear Gulch District would have sufficient water supply to serve the proposed project and the impact is less than significant.

Table 4.12-11 includes the projected future supply and demand by varying hydrologic conditions over the 25-year planning horizon through 2035. As shown, only in normal or above-normal precipitation years can SFPUC meet the unconstrained demand generated in Cal Water's service areas – this assumes that demand is held to 35.68 mgd even with planned growth or no net gain in water demand. The Water Supply Agreement and Water Supply Allocation Plan allow the SFPUC to reduce water deliveries to Wholesale customers during periods of declared water shortages. The SFPUC used the historical hydrologic record from 1920 to 2002 to compare water supplies and demands into the future. This methodology assumes that climatic history will repeat itself and similar hydrologic conditions will be experienced.

TABLE 4.12-11
2010–2035 SUPPLY AND DEMAND COMPARISON FOR NORMAL AND CRITICAL DRY AND MULTIPLE DRY YEARS UNDER WITH 20% SYSTEMWIDE REDUCTIONS TO BAWSCA MEMBERS – NO NET DEMAND INCREASE SCENARIO WITH NO CONSERVATION

	Normal Year Purchase Request		20% System-wide Reductions to BAWSCA Members and Cal Water							
			A Critical Dry (Year 1)		Multiple Dry Year Event					
					Year 2		Year 3		Year 4	
	mgd	%	mgd	20%	mgd	20%	mgd	20%	mgd	20%
SFPUC/BAWSCA Allocation	184.0	100%	115.5	62.5%	115.5	62.5%	115.5	62.5%	115.5	62.5%
Cal Water Individual Supply Guarantee (Allocation)[a,b]	35.68	100%	24.04	66.8%	24.04	66.8%	24.04	66.8%	24.04	66.8%
Cal Water Demand[c]	35.68		35.68		35.68		35.68		35.68	
Difference	0.00	100%	-11.64	33.2%	-11.64	66.8%	-11.64	66.8%	-11.64	66.8%

[a] BAWSCA Allocation based on the 2009 Settlement Agreement and Master Water Sales Contract currently being approved by all parties in interest. Pursuant to the 2009 Settlement Agreement and Master Water Sales Contract, BAWSCA and its member agencies will receive 184 mgd. After 2018 SFPUC could obtain additional supplies from the Tuolumne River watershed; however, at this time that remains an unknown. Therefore, in order to meet potential growth now and beyond 2018 to 2030, BAWSCA and its member agencies must optimize conservation measures and pursue local water supply sources, i.e. groundwater, stormwater and recycled water. The Settlement Agreement and Master Water Sales Contract determined that the BAWSCA members are responsible for obtaining 25 mgd collectively.

[b] The tentative agreement among BAWSCA members is to use the results of Case 16A. It shows that in a 20% system-wide shortage, the average reduction among BAWSCA members is 26.88%. Cal Water would get a reduction of 33.2%.Source: BAWSCA Table 1 REVISED - DRIP Case 16A Results Plus Options 1, 2 (corrected), and 3 (corrected) to Address EPA Needs

[c] Total for Bayshore and Bear Gulch Districts.

As shown Table 4.12-11, within the next 25 years during critical dry and over multiple dry years when a 20 percent system-wide reduction could be imposed, SFPUC is incapable of sufficiently meeting Cal Water's unconstrained demand, including the net increase in demand generated by the proposed project. Under present regional water supply conditions, if a critical dry year is declared and SFPUC imposes a 20 percent system-wide reduction, water supplies to BAWSCA would be reduced to approximately 115.5 mgd; as such, the BAWSCA members would be required to reduce their individual demands according to the Tier Two Water Supply Allocation Plan formula.

In recent years, the SFPUC has delivered 265 mgd, and in fiscal year 2007 – 2008, SFPUC delivered approximately 254 mgd – these are above the firm delivery capabilities of 219 mgd. In terms of water supply reliability, the SFPUC's UWMP assumes "firm" delivery "as amount the system can be expected to deliver during historically experienced drought periods."[62] In recent years (2007-2009), when many water suppliers declared drought conditions in their service areas, SFPUC did not declare a drought and did not impose a limitations or supply reductions on the Regional Water System. As such, SFPUC was able to deliver adequate supply to meet all demand. It should be noted that during this 2007-2009 period, SFPUC did request a voluntary 10 percent reduction from the BAWSCA members.

Also, in critical dry and multiple-dry-year events, when the SFPUC could impose 20 percent reductions in supply, Cal Water and the Bear Gulch District have in place a water shortage contingency plan (California Water Code Section 10632) to balance supply and demand. The WSA concluded that with a water shortage contingency plan in place, plus the addition of supplies developed through the BAWSCA's Long-Term Water Supply Strategy combined with the SFPUC's WSIP improvements, Cal Water and the Bear Gulch District have sufficient water supplies available to serve the proposed project.

As discussed previously in the Regulatory Setting, development within the project area would be required to comply with the City of Menlo Park General Plan Policies I-H-2, I-H-3, I-H-7, and Municipal Code Chapter 12.44, which requires the installation of low-water use plumbing fixtures and landscaping in new development. In addition, Senate Bill X 7-7 (the Water Conservation Act of 2009) calls for reducing demand by 10 percent conservation per capita in 2015 and 20 percent by 2020. As such, if customers in the Bear Gulch District achieve as much as 20 percent conservation per capita, in the event regional supplies are reduced to the BAWSCA members, additional water conservation (within the Bear Gulch District) may not be necessary.

Water Supply Uncertainties

A number of uncertainties have the potential to impact long-term water supplies.

Climate Change. The future effects of climate change on long-term water supplies are commonly addressed as effects on precipitation forecasts. Change to weather patterns is difficult to predict and the California Department of Water Resources (DWR) estimates in the 2007 State Water Project Reliability Report a range of 1 percent increase to a 10 percent decrease in precipitation. Both the amount of precipitation and the form that is takes, i.e., snow versus rain, are important. Most of the SFPUC water supplies are the result of snow pack in the mountains that melts over a long period of time and flows to reservoirs for controlled conveyance to its customers, including the Bear Gulch District. A change from snow to rain would alter the ability to capture water in the Hetch Hetchy Reservoir and would alter the seasonal levels of water flow. This has two primary effects on water planning. One is possibly a reduction in the total amount of water available because of reduced precipitation and the second is a change in how water flow is used to balance ecological concerns and customer demands.

[62] San Francisco Public Utilities Commission. December 2005. *Urban Water Management Plan*. p. 21.

Localized weather patterns would possibly change the amount or timing of rain which has an effect on surface runoff and groundwater recharge; however, it is speculative to estimate any precise effect at this time as no model can predict local weather patterns. Climate change-related sea level rise could also have local effects on the groundwater aquifer and could change the dynamics of salt water intrusion. However, the Bear Gulch District does not currently use groundwater for water supply, nor does it have plans to in the future.

Pending System Improvements and Potential Policy Actions. Crystal Springs, Calaveras Dam, and Sunol Valley Water Treatment Plant currently have active or planned replacement/repair projects which would secure and improve their long-term supply capabilities. Although there is no specific reason that these improvements will not be completed, it is worth noting that delays or disruptions in these projects could affect long-term water supplies.

In addition, as identified in SFPUC's Phased Variant of its Water System Improvement Plan, and assuming regional achievements in water use efficiencies are met; the SFPUC could increase its diversions from the Tuolumne River under San Francisco's existing water rights, thereby improving supplies within the Regional Water Supply system. This also assumes that implementation of the Water System Improvement Plan would continue after 2018 and over the remainder of the planning horizon.

Other Uncertainties. As noted in the Environmental Setting section above, the communities of Hayward, San Jose, and Santa Clara have unique arrangements with the SFPUC, which may create issues with regard to allocating supply shortages and could potentially affect the supply deliveries to Cal Water and the other Wholesalers in times of Regional Water System reductions.

Conclusion. CalWater, based on the analysis in the WSA has concluded that none of these uncertainties will would require the development of alternative sources of water supply within its service area including the Specific Plan area, and that its Individual Supply Guarantee of 35.68 mgd coupled with its surface water rights of 1.12 mgd (1,271 AFY) are adequate meet demands generated by development consistent with the Specific Plan.

Water Conservation Best Management Practices

Water conservation is a method available to reduce water demand, thereby reducing water supply needs for the Bear Gulch District. The unpredictable water supply and ever-increasing demand on California's complex water resources have resulted in a coordinated effort by the Department of Water Resources, water utilities, environmental organizations, and other interested groups to develop a list of urban Best Management Practices for conserving water. This consensus-building effort resulted in a Memorandum of Understanding Regarding Urban Water Conservation in California, as amended September 16, 1999, among parties, which formalizes an agreement to implement these BMPs and makes a cooperative effort to reduce the consumption of California's water resources. The Memorandum of Understanding is administered by the California Urban Water Conservation Council. The Memorandum of Understanding was recently revised to reflect current conditions, new technologies and methodologies to use water more efficiently and improve conservation efforts.

The Memorandum of Understanding requires that a water utility implement only the Best Management Practices that are economically feasible. If a Best Management Practice is not economically feasible, the water utility may request an economic exemption for that Best Management Practice. The Best Management Practices as defined in the Memorandum of Understanding are generally recognized as standard definitions of water conservation measures. The Cal Water is a signatory of the Memorandum of Understanding. As a signatory of the Memorandum of Understanding, Cal Water has agreed to implement the Best Management Practices as defined in Exhibit 1 of the Memorandum of Understanding that are cost beneficial and complete such implementation in accordance with the schedule assigned each Best Management Practice. Cal Water must submit to the California Urban Water Conservation Council a report every two years describing Best Management Practice implementation.

The following Best Management Practices outlined by the California Urban Water Conservation Council and other demand management programs that are currently in effect to reduce demand in the event of supply cutbacks, include:

1. Water Survey Programs for Residential Customers;
2. Residential plumbing retrofit;
    - Water Conservation Kits (high-efficiency showerheads, hose nozzles, etc.)
    - Residential High-Efficiency Toilet Rebates
3. Leak reductions through constant maintenance, system repair audits, leak detection, and repair;
4. Metering with commodity rates for all new connections and retrofit of existing connections;
5. Large landscape conservation programs and incentives;
6. High-efficiency washing machine rebate programs;
7. School education programs, and public outreach, includes water efficient landscaping;
    - Restaurant Table Tents
    - Radio Public Service Announcements
    - Fact Sheets
    - Direct Mailers/Bill Inserts
    - Resource Action Programs – Water Wise Program
    - Disney Planet Challenge (Collaborating Partner)
8. Conservation programs for commercial, industrial, and institutional accounts.

    Rebates Programs for:

    - High-Efficiency Toilet; High-Efficiency Clothes Washers; High-Efficiency Urinal; Pressurized Waterbroom; and, X-Ray Film Processor Re-Circulation System
9. Conservation pricing;
10. Water conservation coordinator;
11. Water waste prohibition;
12. Residential ultra-low-flush toilet replacement programs; and
13. System Pressure Control Program.

These programs and conservation measures are currently in effect by Cal Water and the Bear Gulch District. Each of these programs along with new programs outlined in the forthcoming Bear Gulch District's 2010 UWMP would work to reduce customer demand and reduce or eliminate the supply shortfalls. Unfortunately, it is not possible to quantify the water savings associated with these programs; however, over the 1987-1992 drought, Cal Water observed water-savings of up to 25 percent in its service areas.[63]

Water efficiency fixtures and conservation efforts at the project site would help to ensure that each development component within the project area remains low and would not contribute considerably to the Bear Gulch District's cumulative demand. However, at this point in time, because there are no individual projects with plans and specifications for development at the project site, actual conservation measures and water savings are unquantifiable. In these instances, Cal Water, through its water shortage contingency plan can also impose supply curtailments and implement subsequent stages of demand reductions to balance demand against curtailed supplies as would all other BAWSCA Wholesale agencies. The Bear Gulch District's water shortage contingency plan is presented in Section 3.5.1 of the WSA prepared for the project, located in Appendix D.

As demonstrated in this section regarding the cumulative effect of projected development on water supply for the Specific Plan area, Cal Water, based on the analysis in the WSA concluded that its Individual Supply Guarantee of 35.68 mgd coupled with its surface water rights of 1.12 mgd (1,271 AFY) are adequate to serve the Specific Plan area and projected cumulative development, and this impact is considered less than significant.

Impact PUB-12: The proposed project, in combination with other development within the City of Menlo Park, would not require or result in the construction of new water treatment facilities or the expansion of existing facilities, which could cause significant environmental effects. (Less than Significant)

As stated in Impact UT-2, Cal Water purchases 35.68 mgd of treated water supplies from SFPUC and the distributes treated water to customers within the Bear Gulch District service area. Purchased water is treated at both the Sunol Valley WTP and the Harry Tracy WTP. SFPUC is currently engaged in a variety of water treatment and distribution system improvements projects that comprise its Water System Improvement Program (WSIP), which evolved out of the SFPUC Water System Master Plan (2000). As recently as fall 2008, SFPUC certified the Program Environmental Impact Report (PEIR) for the WSIP. The WSIP consists of 85 projects, 26 of which are specifically for water supply reliability needed to accommodate projected growth, meet water quality standards and add system redundancy in the event of an interruption due to seismic activity. The PEIR programmatically evaluated the impacts associated with the implementation of the WSIP, while individual projects would be subject to project-specific environmental review. SFPUC is in the process of completing the environmental review for expansion at the Sunol

63 Bear Gulch District 2005 UWMP, p. 43.

Valley WTP; once completed, the Sunol Valley WTP would have capacity to treat up to 160 mgd. The Harry Tracy WTP treats 120 mgd but will be expanded and upgraded to sustainably treat 180 mgd. When both of these WTPs are operating at capacity, SFPUC will be capable of producing up to 340 mgd. In addition, SFPUC initiated construction of the Tesla WTP in Tracy, California, which is scheduled for completion in 2011. The Tesla WTP will be the nation's largest ultraviolet disinfection treatment plant and will be capable of producing 315 mgd. Therefore, after 2011, SFPUC can deliver up to 655 mgd.

SFPUC has sufficient water treatment capacity within its existing and planned facilities; consequently, it is not necessary for the City of Menlo Park to operate a proprietary water treatment plant. Because SFPUC has planned for improvements to the water treatment system to improve system reliability and accommodate projected growth in its regional service area, there would be no cumulative impact. As stated above, after 2011, SFPUC's WTP's will be capable of producing 655 mgd if operated continuously, which is well in excess of the demands within Cal Water's or the Bear Gulch District's service area now and over the next 20 years.

In order to ensure proper treatment and distribution, SFPUC also manages the regional conveyance system used to transport potable water supplies to the wholesale water agencies. In this capacity, SFPUC manages and maintains its own WTPs; consequently, all repairs, improvements or expansions are the responsibility of SFPUC – the BAWSCA members have no control of these facilities. When and if repairs are necessary, SFPUC, as the wholesaler remains responsible for all of the treatment facilities and conveyance systems to the BAWSCA members including Cal Water, the Bear Gulch District, and the development of the proposed Specific Plan or the projected development identified in the ABAG 2009 Projections. In the regional context, SFPUC, as the wholesaler would make the necessary improvements to its own WTPs, if needed; consequently, Cal Water and the Bear Gulch District as retailers cannot control SFPUC operations or its repair schedule. Because SFPUC acts on its own accord for water treatment and conveyance and is currently in the process of upgrading its facilities to improve supply reliability and treatment, the BAWSCA members including Cal Water would not need to construct or operate new treatment facilities. Therefore, this analysis finds that no other new or expanded water treatment facilities or storage would be required. Therefore, the project's contribution to this impact within the regional context would be less than significant.

The Bear Gulch District's treatment facility is located adjacent to the Bear Gulch Reservoir. The water is clarified, filtered, and chloraminated in compliance with the Surface Water Treatment Rule and the Safe Drinking Water Act, and then pumped into the distribution system. The Bear Gulch District anticipates treating at least 1.12 mgd at its surface water treatment plant. The treatment plant, which has a rated capacity of 6 mgd could easily accommodate the increase in demand generated by the cumulative growth scenario (0.34 mgd), which is derived from ABAG's 2009 Projections Report.

Therefore, as a result of the proposed project, no new or expanded water treatment facilities or storage would be required. Consequently, this impact is considered less than significant.

Wastewater

Development under the Specific Plan, in conjunction with past, present and reasonably foreseeable projects, could result in a cumulative increase in wastewater generation, resulting in increased demand on the wastewater conveyance and treatment facilities serving the City of Menlo Park. However, it is not anticipated that the wastewater demands of the Specific Plan combined with future projects in the City would diminish West Bay Sanitary District's (WBSD) or South Bayside System Authority's (SBSA) capacity to serve the Specific Plan's projected demand in addition to its existing commitments within its service area. In addition, both WBSD (wastewater conveyance) and SBSA (wastewater treatment) are in the process of analyzing and planning for increased demands associated with cumulative development to the year 2030. Overall, the effect of the Specific Plan implementation on the need for new or expanded wastewater conveyance and treatment facilities, in combination with other foreseeable projects would be less than significant.

Solid Waste

Development under the Specific Plan, in conjunction with past, present, and reasonably foreseeable projects, could result in a cumulative increase in solid waste and debris. However, comprehensive implementation of existing waste reduction and diversion requirements and programs in the Specific Plan related to individual development projects as well as other past, present, and reasonably foreseeable projects, would reduce the potential for exceeding existing capacities of existing landfills. As a result, the Specific Plan, in combination with other foreseeable projects, would not result in the need for new or expanded landfill facilities or impede the City's ability to meet mandated waste diversion requirements. As such, this would a less-than-significant impact.

Electricity and Natural Gas

Despite annual statewide increases in energy consumption, the net increase in power demand from the cumulative scenario, relative to the power demands of the regional service area, would be minimal. The City of Menlo Park is mostly already served by gas and electricity infrastructure and the increase in demand from the cumulative scenario would not require new or expanded power facilities as a direct result of Specific Plan implementation. Further, all future projects would be required to comply with all standards of Title 24 of the California Code of Regulations. Therefore, the effect of the Specific Plan implementation on electricity and natural gas consumption levels, in combination with other past, present and reasonably foreseeable projects in the City, would be less than significant.

Mitigation: None required.

4.13 Transportation, Circulation and Parking

This section describes the transportation, circulation, and parking conditions, including transit services and pedestrian and bicycle facilities in the project area and its vicinity, and provides an analysis of the Specific Plan's potential impacts. This section summarizes the findings of the *Revised Draft Menlo Park El Camino Real / Downtown Specific Plan Transportation Impact Analysis* (Fehr and Peers, 2010). **Appendix E** contains the full traffic impact study, with technical background information relating to transportation, circulation and parking.

The analysis evaluates the traffic-related impacts of the Specific Plan during both the weekday morning and evening peak hours. Traffic conditions are assessed for study intersections and roadways segments for the following four scenarios:

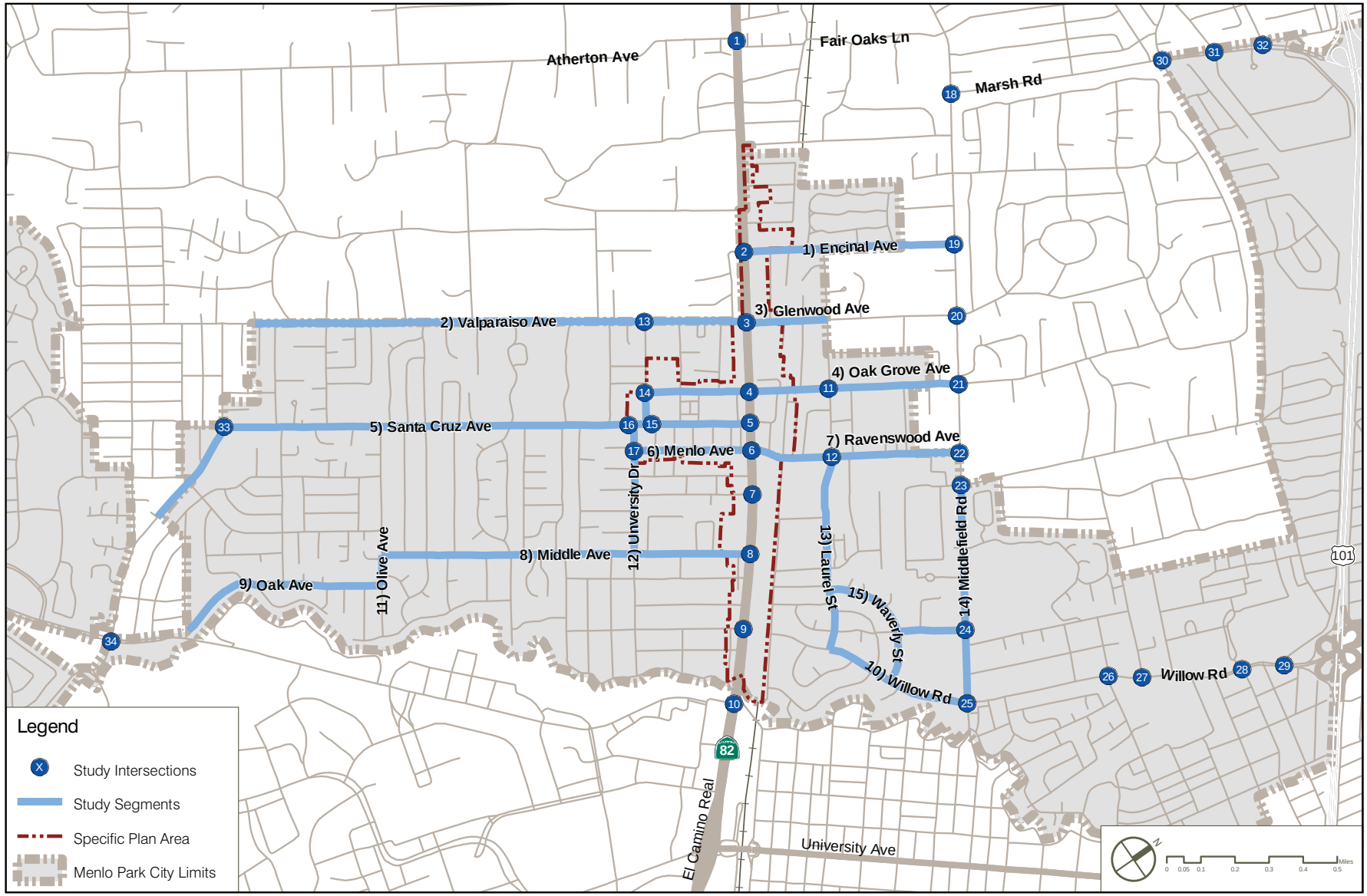
- ***Existing*** – Represents existing conditions with volumes obtained from recent traffic counts and the existing roadway system.
- ***Existing With Project Buildout*** – Existing conditions plus project-related traffic under full buildout conditions.
- ***2035 No Project –***This scenario represents long range conditions and includes existing peak-hour volumes multiplied by a twenty-year growth factor to represent regional growth plus traffic generated by approved and pending development projects in Menlo Park.
- ***2035 With Project Buildout –*** Future forecasted conditions for the year 2035, as determined in the 2035 No Project scenario, plus project-related traffic under full buildout conditions.

4.13.1 Existing Setting

The existing transportation-related context for the proposed Specific Plan is described below, beginning with a description of the study area and the street network that serves the Plan area. Existing transit service, bicycle and pedestrian facilities, and on- and off-street parking in the vicinity of the Plan area are also described. Intersection and roadway levels of service are then defined and current conditions for roadways and intersections in the Plan area vicinity are summarized. This subsection also discusses planned transportation improvements in the Plan area vicinity as well as the applicable planning policies.

Existing Roadway Network

Regional vehicular access to the Plan area is provided by U.S. Route 101, Interstate 280 (I-280), State Route (SR) 84 (Bayfront Expressway) and SR 82 (El Camino Real). Local access is also provided via El Camino Real, as well as Ravenswood/Menlo Avenues, Santa Cruz Avenue and Oak Grove Avenue. These and other major roadways in the study area are described below and are illustrated in **Figure 4.13-1**.



SOURCE: Fehr & Peers

Menlo Park El Camino Real/Downtown Specific Plan EIR . 208581

Figure 4.13-1

Study Intersections and Roadway Segments

Freeways

U.S. Route 101 (Bayshore Freeway) is an eight-lane north-south freeway that connects Menlo Park with San Jose (and points south) and with San Francisco (and points north). It has two interchanges that serve Menlo Park – Willow Road and Marsh Road. There are high occupancy vehicle (HOV) lanes on this freeway in the Menlo Park area. The average daily traffic (ADT) volume for this roadway is approximately 178,000 vehicles.

I-280 (Junipero Serra Freeway) is also an eight-lane north-south freeway that connects San Jose with San Francisco. Its interchanges with Alpine Road and Sand Hill Road provide access to Menlo Park. There are no HOV lanes on this freeway in the Menlo Park area. The ADT for this roadway is approximately 98,000 vehicles.

Arterial Roadways

El Camino Real (SR 82) is a primary north-south arterial that connects San Jose with San Francisco. It enters the City just north of Sand Hill Road as a six-lane arterial, becomes a four-lane arterial near downtown Menlo Park, and exits the City as a five-lane arterial (three southbound lanes and two northbound lanes) north of Encinal Avenue. The ADT for this roadway is approximately 38,000 vehicles.

Bayfront Expressway (SR 84) is a primary east-west expressway that connects both Marsh Road and Willow Road to the cities on the east side of San Francisco Bay via Dumbarton Bridge. This roadway is six-lanes throughout its entire length. The ADT for this roadway is approximately 52,000 vehicles.

Marsh Road is an east-west arterial roadway that connects Bayfront Expressway with Middlefield Road. It enters the City as a six-lane primary arterial at Bayfront Expressway and becomes a minor four-lane arterial at the U.S. Route 101 interchange. The ADT for this roadway ranges from approximately 21,500 to 33,500 vehicles depending on the location.

Middlefield Road is a minor north-south arterial roadway that extends from Sunnyvale to Redwood City. It enters the City at San Francisquito Creek south of Willow Road as a four-lane arterial and narrows to a two-lane arterial at Ravenswood Avenue. The ADT for this roadway is approximately 20,000 vehicles.

Ravenswood Avenue is a minor east-west two-lane arterial roadway. It extends between Middlefield Road and El Camino Real near downtown Menlo Park. This roadway is one of four east-west roadways in the City that crosses the Caltrain railroad tracks. The ADT for this roadway is approximately 20,000 vehicles. Ravenswood Avenue becomes Menlo Avenue west of El Camino Real and is discussed in further detail below.

Sand Hill Road is a primary east-west arterial roadway that connects I-280 with El Camino Real. It enters the City west of I-280 as a two-lane arterial and widens to a four-lane arterial between I-280 and Arboretum Road. It is two lanes wide between Arboretum Road and El Camino Real. The ADT for the portion of this roadway in Menlo Park is approximately 30,000 vehicles.

Santa Cruz Avenue is a minor east-west two-lane arterial roadway. It extends between Sand Hill Road and the Menlo Park Caltrain Station. This roadway serves as the "main street" in downtown Menlo Park. The ADT for this roadway in the downtown area is approximately 8,000 vehicles.

Valparaiso Avenue is a minor east-west two-lane arterial roadway extending from approximately Alameda de las Pulgas to El Camino Real. This roadway serves as the northern City boundary between El Camino Real and Delfino Way. The ADT for this roadway is about 13,000 vehicles. Valparaiso Avenue becomes Glenwood Avenue east of El Camino Real and is discussed below.

Willow Road is an east-west arterial roadway. It extends from Bayfront Expressway, as a primary four-lane arterial, becomes a minor two-lane arterial at the U.S. Route 101 interchange, and ends as a two-lane collector at Alma Street. The ADT for this roadway east of Middlefield Road is approximately 26,000 vehicles.

Collector Roadways

Alma Street is a north-south two-lane collector roadway. It extends from south of Willow Road, parallels the Caltrain railroad tracks on the east side of the railway, to Oak Grove Avenue. The ADT for this roadway between Oak Grove Avenue and Ravenswood Avenue is approximately 1,500 vehicles.

Encinal Avenue is an east-west two-lane collector roadway. It extends from Middlefield Road in the Town of Atherton to El Camino Real. This roadway is one of four east-west roadways in the City that cross the Caltrain railroad tracks. The ADT for this roadway is about 4,500 vehicles.

Glenwood Avenue is an east-west two-lane collector roadway. It extends from east of Middlefield Road in the Town of Atherton to El Camino Real. This roadway is one of four east-west roadways in the City that cross the Caltrain railroad tracks. The ADT for this roadway is approximately 5,800 vehicles. Glenwood Avenue becomes Valparaiso Avenue west of El Camino Real.

Menlo Avenue is an east-west two-lane collector roadway. It extends between University Drive and El Camino Real. The ADT for this roadway is approximately 8,000 vehicles. Menlo Avenue becomes Ravenswood Avenue east of El Camino Real.

Middle Avenue is an east-west two-lane collector roadway. It extends between Olive Street and El Camino Real. The ADT for this roadway is approximately 8,000 vehicles.

Oak Grove Avenue is an east-west two-lane collector roadway. It extends from east of Middlefield Road in the Town of Atherton to University Drive in downtown Menlo Park. This roadway is one of four east-west roadways in the City that cross the Caltrain railroad tracks. The ADT for this roadway is approximately 7,000 vehicles west of El Camino Real and 9,000 vehicles to the east.

University Drive is a north-south two-lane collector roadway that has two discrete segments on the west side of downtown. The first segment extends from south of Middle Avenue to Santa Cruz Avenue. The second segment extends from Santa Cruz Avenue approximately 150 feet east of the first segment to Valparaiso Avenue. The ADT for this roadway is about 7,000 vehicles.

Existing Transit Service

The City of Menlo Park is served by two major transit providers. San Mateo County Transit District (SamTrans) provides local and regional bus service, and Caltrain provides commuter rail service. Local shuttles are also provided in Menlo Park during commute hours by Caltrain and during mid-day hours by the City. Both shuttles operate on weekdays (Monday through Friday) only. Transit service and facilities – bus routes, major bus stops, Caltrain tracks, and the Caltrain station – are shown on **Figure 4.13-2**. For FY2011-2012, Caltrain initially proposed a service reduction that could eliminate weekend and off-peak service, among other changes. However, Caltrain identified short-term solutions that allowed the existing schedule to be retained. Caltrain and associated transit agencies continue to investigate long-term solutions to ensure service remains at current levels.

SamTrans Bus Service

SamTrans operates bus service in San Mateo County. There are 54 routes in the county that can be categorized as community, express, BART connection, Caltrain connection, and BART and Caltrain connection routes. These routes serve approximately 14,630,000 annual riders. Most bus routes typically operate along major arterial corridors and operate from early morning into the late evening.

Route KX provides service between Palo Alto and San Francisco via El Camino Real and U.S. Route 101. Headways are between approximately 15 to 60 minutes on weekdays and 20 to 60 minutes on weekends.

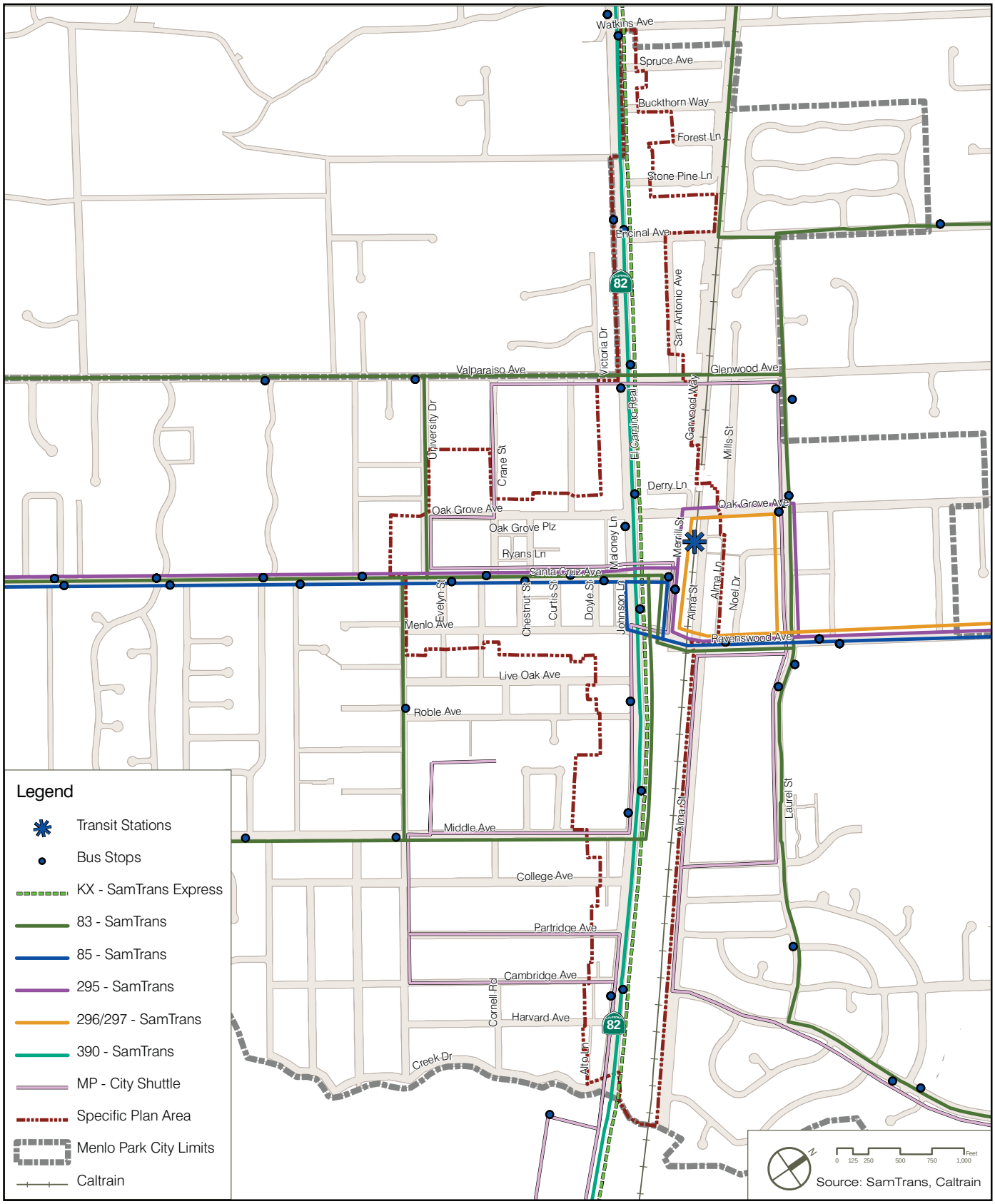
Route 83 provides service within the City of Menlo Park via a variety of roadways, providing service to all local public schools. This route operates on school days only, and headways vary between 2 and 75 minutes.

Route 85 provides service between Menlo Park and Woodside via Santa Cruz Avenue, Alpine Road, and Portola Road. Headways are between approximately 30 to 120 minutes on weekdays. This route only operates in the morning between 6:30 a.m. and 8:00 a.m. and in the afternoon between 12:00 p.m. and 4:30 p.m.

Route 295 provides service between San Mateo and Menlo Park via a variety of roadways. Headways are between approximately 15 to 60 minutes on weekdays and this route does not operate on weekends.

Route 296 provides service between East Palo Alto and Redwood City via Clarke Avenue, Bay Road, Willow Road, and Middlefield Road. Headways are between approximately 30 to 60 minutes on weekdays and approximately 60 minutes on weekends.

Route 297 provides service between Palo Alto and Redwood City via University Avenue, Bay Road, and Middlefield Road. Headways are approximately 60 minutes on both weekdays and weekends. This route only operates during the late evening, overnight and early morning hours. The route does not operate mid-day.



SOURCE: Fehr & Peers

Figure 4.13-2
Existing Transit Service

Route 390 provides service between Palo Alto and Daly City via El Camino Real. Headways are between approximately 30 to 60 minutes on both weekdays and weekends.

Route 397 provides service between Palo Alto and San Francisco via University Avenue, Bay Road, Middlefield Road, El Camino Real, Millbrae Avenue, Bayshore Boulevard, and Mission Street. Headways are approximately 60 minutes on both weekdays and weekends. This route only operates to San Francisco during the overnight and early morning hours. This route is an extension of Route 297, and it does not operate mid-day.

SamTrans Short Range Transit Plan

Planned short-range improvements to SamTrans service focus on optimizing the current system's condition and performance.[1] These planned improvements include vehicle replacement, vehicle expansion, adding Clipper (formerly TransLink) and other fare collection equipment, installing information technology, and planning for transit oriented development (TOD), defined as being within a reasonable walking distance of a transit station. SamTrans planning efforts are being curtailed by their current financial constraints.

Planned development envisioned in the Specific Plan and located in the Menlo Park Caltrain Station area or in the Downtown near El Camino Real (clustered around SamTrans bus stations) is a TOD (as defined above).

Caltrain

Caltrain operates 50 miles of commuter rail between San Francisco and San José, and limited service trains to Morgan Hill and Gilroy during weekday commute periods. Caltrain is owned by the Peninsula Corridor Joint Powers Board, operated under contract with Amtrak, and managed under contract with SamTrans.

On weekdays, Caltrain operates approximately 100 trains per day of local, limited stop, and express services in both directions. Travel time between Menlo Park and San Francisco is approximately 60 minutes and travel time between Menlo Park and San Jose is approximately 40 minutes for local and limited stop services. Caltrain's express service travels between Menlo Park and San Francisco or San Jose in less than 45 minutes or 25 minutes, respectively. Caltrain offers 22 weekday commute-hour express trains, some of which serve Menlo Park southbound in the a.m. peak period and northbound in the p.m. peak period.

The Menlo Park Caltrain Station is located east of El Camino Real between Ravenswood Avenue and Santa Cruz Avenue. Lockable, sheltered bike parking is provided adjacent to the station platform, and bus and shuttle access is provided at the nearby bus transfer facility. On weekends, Caltrain operates approximately 30 trains per day with local stops only. Currently, approximately 1,400 passengers board and alight daily at the Menlo Park Caltrain station, including approximately 100 daily passengers with bikes (Peninsula Joint Powers Board, 2008).

[1] San Mateo County Transit District (SamTrans), *Short Range Transit Plan 2008-2017* (January, 2008).

Caltrain tracks are also used by Union Pacific freight trains. Union Pacific typically operates two round-trips (four one-way trips) by freight trains through Menlo Park each day. The Union Pacific trains are diesel trains with similar attributes as the current Caltrain trains. Union Pacific freight trains do not serve any sites within the Plan area.

Caltrain Short-Range Transit Plan

Planned short-range improvements to Caltrain focus on a strategy called the State of Good Repair which will concentrate on a systematic approach in optimizing the current system's condition and performance.[2] These planned improvements include upgrading signaling and communications systems, replacing old bridges, enhancing approach speeds and flexibility at the San Francisco terminus, and eliminating all of the remaining hold-out stations. Hold-out stations are areas where trains are required to wait while another train is in the main station and therefore increase service delays. Planned long-range improvements to Caltrain include electrification of the entire line to improve operating efficiency and provide environmental benefits. Caltrain planning efforts are being curtailed by their current financial constraints.

Shuttle Service

Local shuttle service in Menlo Park is provided by Caltrain and the City of Menlo Park. Each shuttle service is described below.

Caltrain Shuttles

Free shuttles are provided between the Menlo Park Caltrain Station and employment centers east of U.S. Route 101 on either Marsh Road or Willow Road. These shuttles are also open to the public. Headways are based on train arrivals and departures at the Menlo Park Caltrain Station and the shuttles operate during commute periods on weekdays only.

City of Menlo Park Shuttles

Free shuttles are provided via the Menlo Park Mid-day Shuttle service within Menlo Park and adjacent cities. These shuttles serve the Stanford Medical Center, Stanford Shopping Center, downtown Menlo Park, Menlo Park Caltrain Station, Menlo Park Library, Veterans Administration Medical Center, and Menlo Park Senior Center. The shuttles are open to the public. Headways are approximately 60 minutes and the shuttles operate during mid-day hours on weekdays only.

Existing Bicycle / Pedestrian Network

Bicycle Facilities

Bikeway planning and design in California typically relies on the guidelines and design standards established by California Department of Transportation (Caltrans) in the Highway Design Manual (Chapter 1000: Bikeway Planning and Design).[3,4] Chapter 1000 follows standards developed by

2 Peninsula Corridor Joint Powers Board (Caltrain), *Short Range Transit Plan 2008-2017* (February, 2008).
3 California Department of Transportation. *Guide for the Preparation of Traffic Impact Studies* (December, 2002).
4 California Department of Transportation. Highway Design Manual, 6th Edition (September, 2006).

the American Association of State Highway and Transportation Officials (AASHTO) and the Federal Highway Administration (FHWA), and identifies specific design standards for various conditions and bikeway-to-roadway relationships. Under California Law, bicyclists are allowed to use all roadways in California unless posted as closed. Therefore, even for the roadways that have no designated (or planned) bikeways identified, a majority are open for cycling.

Caltrans standards provide for three distinct types of bikeway facilities, as generally described below.

- **Class I Bikeway (Bike Path)** provides a completely separate right-of-way and is designated for the exclusive use of bicycles and pedestrians with vehicle and pedestrian cross-flow minimized.

- **Class II Bikeway (Bike Lane)** provides a restricted right-of-way and is designated for the use of bicycles with a striped lane on a street or highway. Bicycle lanes are generally five feet wide. Adjacent vehicle parking and vehicle/pedestrian cross-flow are permitted.

- **Class III Bikeway (Bike Route)** provides for a right-of-way designated by signs or pavement markings for shared use with pedestrians or motor vehicles.

Existing and Planned Bicycle Facilities

Figure 4.13-3 shows the existing and planned bicycle facilities in and near the Plan area as identified in the *Menlo Park Comprehensive Bicycle Development Plan*.[5] There are no Class I bike paths in the project vicinity. Class II bike lanes are located or proposed along segments of major roadways in the study area, as listed below.

Existing Class II Bike Lanes

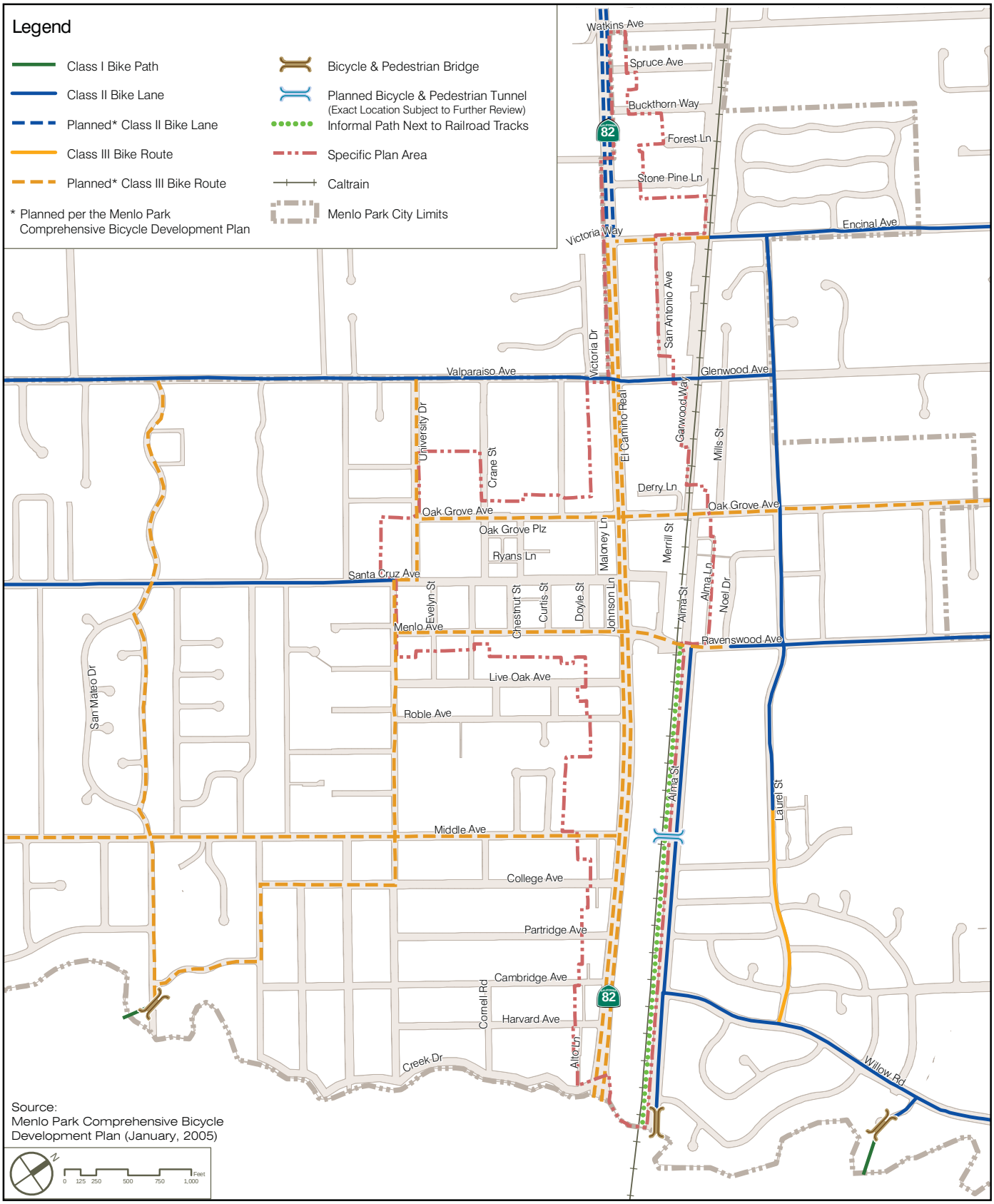
- Valparaiso Avenue, between Alameda de las Pulgas and El Camino Real
- Glenwood Avenue, between El Camino Real and Laurel Street
- Santa Cruz Avenue, between Orange Avenue and University Drive
- Encinal Avenue, between Caltrain tracks and Middlefield Road
- Laurel Street, between Encinal Avenue and north of Burgess Avenue
- Ravenswood Avenue, between Noel Drive and Middlefield Road
- Alma Street, between Ravenswood Avenue and San Francisquito Creek (south City limit)
- Willow Road, between Alma Street and Durham Street

Planned Class II Bike Lanes

- El Camino Real, between Encinal Avenue and north City limit

A Class III bike route is provided on Laurel Street between Willow Road and north of Burgess Avenue. Class III bike routes are planned along the following segments.

5 City of Menlo Park, *Menlo Park Comprehensive Bicycle Development Plan* (January, 2005).



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SOURCE: Fehr & Peers

Figure 4.13-3

Existing and Planned Bicycle Facilities

- El Camino Real, between Encinal Avenue and south City limit
- Encinal Avenue, between El Camino Real and Caltrain tracks
- Glenwood Avenue
- Oak Grove Avenue, between University Drive and Middlefield Road
- University Drive, between Valparaiso Avenue and College Avenue
- Middle Avenue, between Olive Street and El Camino Real
- College Avenue, between Arbor Road and University Drive
- San Mateo Drive, between Valparaiso Avenue and San Francisquito Creek (south City limit)

Several bicycle and pedestrian bridges/undercrossings also are provided or planned near the Plan area. Existing bridges are provided at San Mateo Drive, Alma Street and Willow Place over San Francisquito Creek along the south edge of the City. A planned undercrossing of the Caltrain tracks is under consideration near Middle Avenue.

Pedestrian Facilities

The pedestrian facilities within the study area are off-street paths, sidewalks along roadways, pedestrian signals, and crosswalks. Two main types of crosswalks exist: marked (striped) crosswalks and unmarked (no striping) crosswalks. Controlled, marked crosswalks include those striped and controlled by traffic/pedestrian signals or stop signs. Uncontrolled, marked crosswalks can exist mid-block or at intersections with side-street stop control only (or all-way yield control intersection with low volumes).

Existing Pedestrian Facilities

The sidewalk network is nearly complete within the downtown area along Santa Cruz Avenue and the area to the south (see **Figure 4.13-4**). These areas have the most concentrated centers of pedestrian activity. The section of El Camino Real north of Valparaiso Avenue fronting Menlo College has no sidewalks. An informal off-street path is provided along the east side of the Caltrain tracks from the San Francisquito Creek bicycle/pedestrian bridge at Alma Street to Ravenswood Avenue.

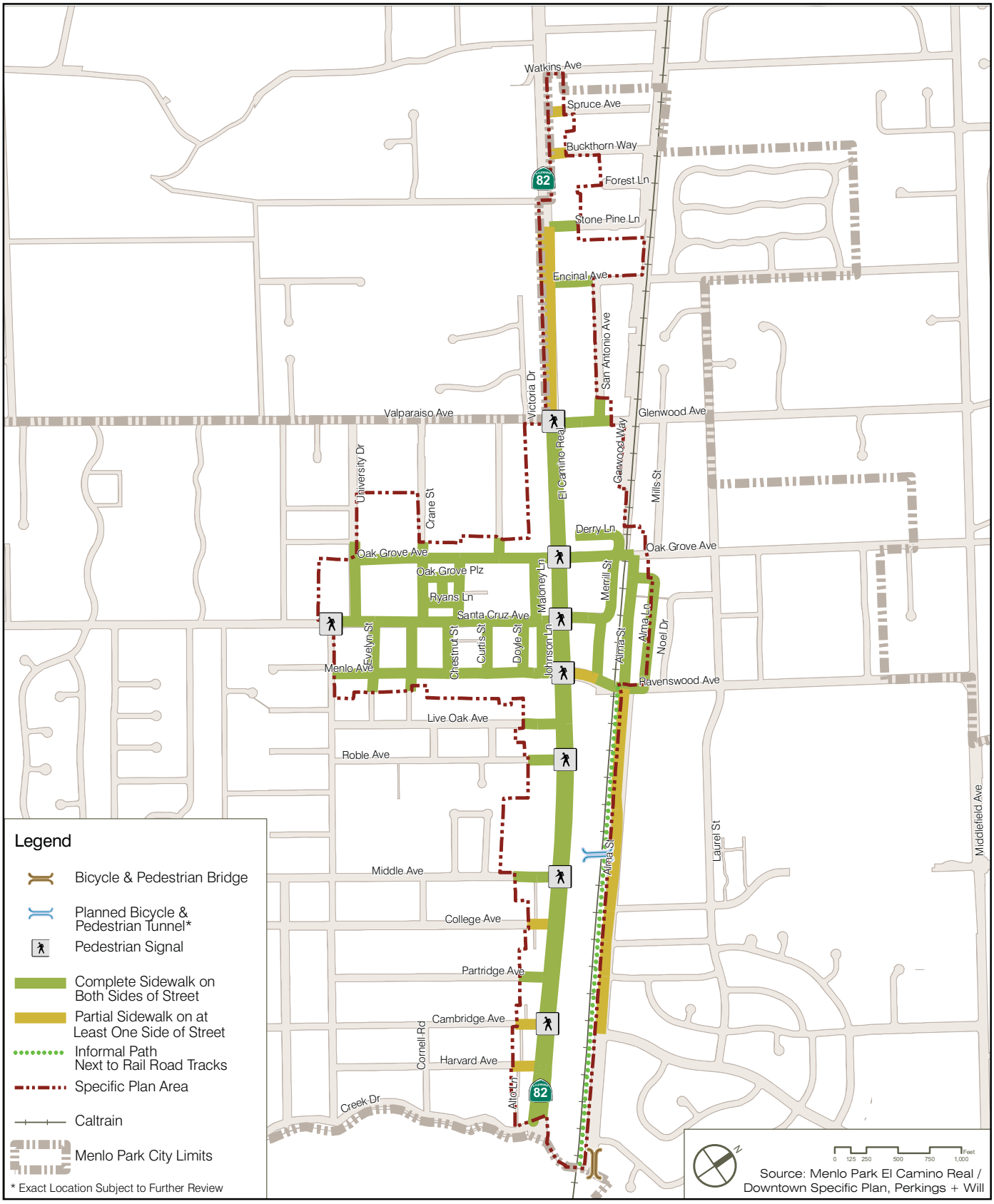
Signalized Crosswalks

Pedestrian signals exist at all of the signalized intersections within the study area, along El Camino Real and at Santa Cruz Avenue/University Drive. Traffic signals at the El Camino Real intersections at Oak Grove Avenue, Santa Cruz Avenue, and Menlo Avenue-Ravenswood Avenue also include audible pedestrian signals.

Crosswalks are marked at all signalized intersections, although crossings on some legs of the signalized intersections have been closed to reduce vehicular delays, as listed below.[6]

- El Camino Real/Encinal Avenue – south leg

[6] Intersections typically have three or four legs, where a leg comprises both the lanes approaching the intersection and departing the intersection from one direction.



SOURCE: Fehr & Peers

Figure 4.13-4

Existing Pedestrian Facilities Inside Specific Plan Area

- El Camino Real/Menlo Avenue-Ravenswood Avenue – south leg
- El Camino Real/Roble Avenue – north leg
- El Camino Real/Middle Avenue – south leg
- El Camino Real/Cambridge Avenue – south leg
- Santa Cruz Avenue/University Drive – west leg

Average pedestrian crossing times for the El Camino Real intersections at Oak Grove Avenue, Santa Cruz Avenue, and Menlo Avenue were estimated based on field observations completed in March 2009. Pedestrian delays crossing El Camino Real at these three intersections were just over one-and-a-half minutes; pedestrians crossing the side-streets (Oak Grove Avenue, Santa Cruz Avenue, and Menlo Avenue-Ravenswood Avenue) also experienced delays of approximately one-and-a-half minutes.

Uncontrolled Crosswalks

Within the Specific Plan area, several marked, uncontrolled (mid-block) crosswalks exist, as listed below.

- Across El Camino Real near Stone Pine Lane-Alejandra Avenue and Watkins Avenue-Isabella Lane (intersections include enhanced diagonal crosswalk markings, yield lines across traffic lanes in both directions in advance of the crosswalks, in-street Pedestrian Crossing signs in the median adjacent to the crosswalks facing both directions of traffic, a Yield Here To Pedestrian sign placed at the yield line facing oncoming traffic, and a Pedestrian Crossing symbol sign in advance of the yield line on both directions of El Camino Real)
- Across Ravenswood Avenue at Alma Street (in-pavement lighting is provided)
- Across Santa Cruz Avenue, near Curtis Street, Crane Street, and Evelyn Street
- Across Oak Grove Avenue near Hoover Street (in-pavement lighting is provided) and Merrill Street
- Across Menlo Avenue near Chestnut Street and Doyle Street
- Across Alma Street near Library and Civic Center entrance

Several of the uncontrolled crosswalks on City streets include high visibility striping and advance signage.

Santa Cruz Avenue Crosswalks

Marked crosswalks (both controlled and uncontrolled) within the downtown core along Santa Cruz Avenue are enhanced with colored, stamped pavement and are striped with two parallel lines. Many of these crossing locations include curb extensions to improve lines of sight between drivers and pedestrians and to shorten the pedestrian crossing distance. Along Santa Cruz Avenue and adjacent streets, pedestrian activity is frequent; thus, crossings are anticipated by most drivers, who were observed generally to yield to pedestrians.

Bridges/Undercrossings

Several bicycle and pedestrian bridges/undercrossings are provided or planned near the Plan area. Existing bridges are provided at San Mateo Drive, Alma Street and Willow Place over San Francisquito Creek. A planned grade-separated crossing of the Caltrain tracks is currently under consideration near Middle Avenue.

Existing Parking Characteristics

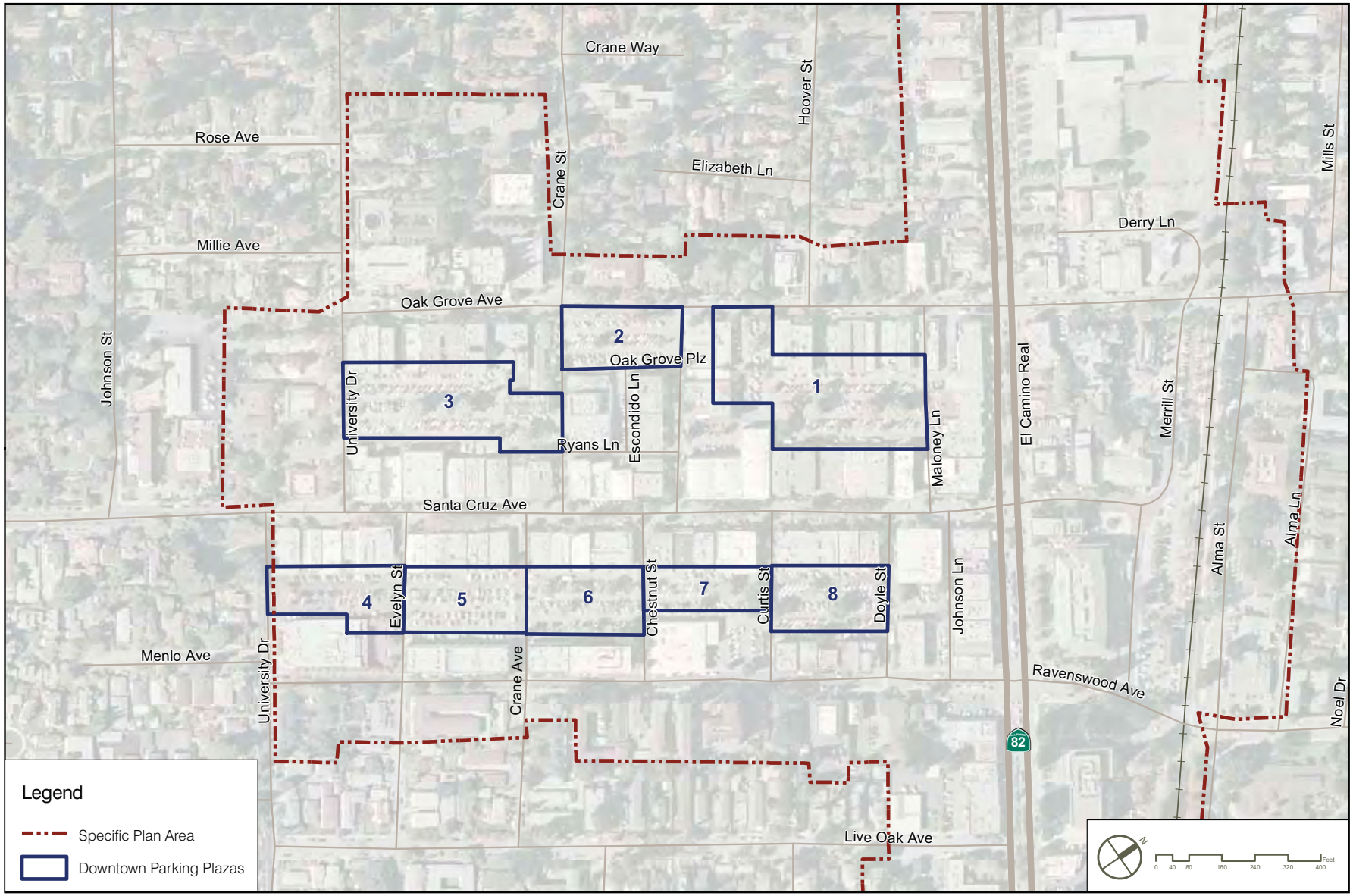
The downtown area of Menlo Park is defined as the areas fronting El Camino Real, Oak Grove Avenue, Santa Cruz Avenue, Menlo Avenue, University Drive, and Alma Street between Oak Grove Avenue and Ravenswood/Menlo Avenues. The existing downtown parking supply and demand was surveyed by Wilbur Smith Associates for the downtown parking study recently completed and is summarized in this section.[7] The existing public parking supply in the downtown core area consists of 1,186 spaces in the public parking plazas and 409 spaces on-street, for a total of 1,595 public spaces (**Table 4.13-1**).[8] Additional spaces are provided in private parking lots. The parking plaza locations are shown on **Figure 4.13-5**.

TABLE 4.13-1
EXISTING DOWNTOWN PUBLIC PARKING SUPPLY (spaces)

Parking Location		Supply[a]
Parking Plazas		
Parking Plaza 1		249
Parking Plaza 2		95
Parking Plaza 3		212
Parking Plaza 4		105
Parking Plaza 5		150
Parking Plaza 6		136
Parking Plaza 7		94
Parking Plaza 8		145
	Total	1,186
On-Street Spaces		
Santa Cruz Avenue		116
Chestnut Street North		26
Chestnut Street South		17
Oak Grove Avenue		80
Other Streets		170
	Total	409
	Downtown Core Area Total	**1,595**

[a] *2009-2010 Downtown Menlo Park Parking Study*, Wilbur Smith Associates.

[7] Wilbur Smith Associates, *2009-2010 Downtown Menlo Park Parking Study*.
[8] The downtown core area is bounded by Oak Grove Avenue, El Camino Real, Menlo Avenue, and University Drive.



SOURCE: Fehr & Peers

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Figure 4.13-5
Downtown Parking Plazas

Management

Parking at City lots currently is free, but restricted to two hours from 9:00 a.m. to 6:00 p.m., Monday through Friday. Annual passes at a cost of $569 (and temporary full- and half-day permits, at a cost of $10 and $5, respectively) are available for downtown employees to park for longer than the two-hour limit in all parking plazas except #4. In addition, Parking Plazas 1 and 5 allow for hourly paid parking above the two-hour free time period, with payment through on-site meters.

On-street parking is comprised entirely of unmetered spaces, with time limits (in effect from 7:00 a.m. to 6:00 p.m., Monday through Friday, except holidays) that vary by street in Menlo Park. Santa Cruz Avenue currently is time-limited to one hour, with some 15-minute spaces at high-demand locations. Most side-streets such as Crane Street and Oak Grove Avenue are restricted to one hour. Lastly, there are spaces that are not time-limited, such as those on Alma Street. In 2010, the Menlo Park City Council approved the recommendations in the Downtown Menlo Park Parking Study, and authorized funding to implement changes to parking time restrictions, which have been implemented.

Supply and Demand

The existing peak parking demand for the public spaces in the downtown core measured by Wilbur Smith Associates on weekdays is 1,260 parked vehicles (or occupied spaces). The percent of occupied spaces steadily increases during the morning, reaches a peak of about 80 percent between 12:00 noon and 2:00 pm and then steadily decreases. Approximately 65 percent of spaces are occupied at 5:00 pm. The peak occupancy measured on a Saturday was 63 percent at 1:00 pm. The practical capacity of downtown areas is usually between 85 and 90 percent occupied spaces. Downtown Menlo Park approaches this limit for a few hours each weekday, based on data collected in November 2009 (**Appendix E**).

The parking demand in downtown Menlo Park may be higher during more robust economic conditions. For example, according to the 2007 *MTC Smart Growth Parking Policy Study,* the weekday midday peak parking occupancy in the downtown commercial core was approximately 84 percent.[9] The 1999 *Downtown Parking Study* reported a peak occupancy rate of 89 percent.[10]

Existing Traffic Conditions

Intersection Level of Service Analysis Methodologies

The operation of a local roadway network is commonly measured and described using a grading system called Level of Service (LOS). The LOS grading system qualitatively characterizes traffic conditions associated with varying levels of vehicle traffic, ranging from LOS A (indicating free-flow traffic conditions with little or no delay experienced by motorists) to LOS F (indicating congested conditions where traffic flows exceed design capacity and result in long delays). This LOS grading system applies to both roadway segments and intersections. **Table 4.13-2** summarizes the relationship between delay and LOS and signalized and unsignalized intersections.

9 Metropolitan Transportation Commission (MTC), *MTC Smart Growth Parking Policy Study* (June 2007).
10 City of Menlo Park, *Downtown Parking Study* (March, 1999).

TABLE 4.13-2
DEFINITIONS FOR INTERSECTION LEVEL OF SERVICE

Unsignalized Intersections		Level of Service Grade	Signalized Intersections	
Description	Average Total Vehicle Delay (Seconds)		Average Control Vehicle Delay (Seconds)	Description
No delay for stop-controlled approaches.	≤10.0	A	≤10.0	Free Flow or Insignificant Delays: Operations with very low delay, when signal progression is extremely favorable and most vehicles arrive during the green light phase. Most vehicles do not stop at all.
Operations with minor delay.	>10.0 and ≤15.0	B	>10.0 and ≤20.0	Stable Operation or Minimal Delays: Generally occurs with good signal progression and/or short cycle lengths. More vehicles stop than with LOS A, causing higher levels of average delay. An occasional approach phase is fully utilized.
Operations with moderate delays.	>15.0 and ≤25.0	C	>20.0 and ≤35.0	Stable Operation or Acceptable Delays: Higher delays resulting from fair signal progression and/or longer cycle lengths. Drivers begin having to wait through more than one red light. Most drivers feel somewhat restricted.
Operations with increasingly unacceptable delays.	>25.0 and ≤35.0	D	>35.0 and ≤55.0	Approaching Unstable or Tolerable Delays: Influence of congestion becomes more noticeable. Longer delays result from unfavorable signal progression, long cycle lengths, or high volume to capacity ratios. Many vehicles stop. Drivers may have to wait through more than one red light. Queues may develop, but dissipate rapidly, without excessive delays.
Operations with high delays, and long queues.	>35.0 and ≤50.0	E	>55.0 and ≤80.0	Unstable Operation or Significant Delays: Considered to be the limit of acceptable delay. High delays indicate poor signal progression, long cycle lengths and high volume to capacity ratios. Individual cycle failures are frequent occurrences. Vehicles may wait through several signal cycles. Long queues form upstream from intersection.
Operations with extreme congestion, and with very high delays and long queues unacceptable to most drivers.	>50.0	F	>80.0	Forced Flow or Excessive Delays: Occurs with oversaturation when flows exceed the intersection capacity. Represents jammed conditions. Many cycle failures. Queues may block upstream intersections.

SOURCE: Transportation Research Board, Special Report 209, *Highway Capacity Manual*, updated 2000.

Signalized Intersections

At signalized intersections, traffic conditions are evaluated using the 2000 *Highway Capacity Manual* (HCM) operations methodology and the Synchro traffic analysis software program.[11] The operation analysis uses various intersection characteristics (e.g., traffic volumes, lane geometry, and signal phasing/timing) to estimate the average control delay experienced by motorists traveling through an intersection.

Unsignalized Intersections

For unsignalized (all-way stop-controlled and side-street stop-controlled) intersections, traffic conditions are evaluated using the HCM operations methodology and the Synchro traffic analysis software program. With this methodology, the LOS is related to the total delay per vehicle for the intersection as a whole (for all-way stop-controlled intersections), and for each stop-controlled movement or approach only (for side-street stop-controlled intersections). Total delay is defined as the total elapsed time from when a vehicle stops at the end of the queue until the vehicle departs from the stop line. This time includes the time required for a vehicle to travel from the last-in-queue position to the first-in-queue position.

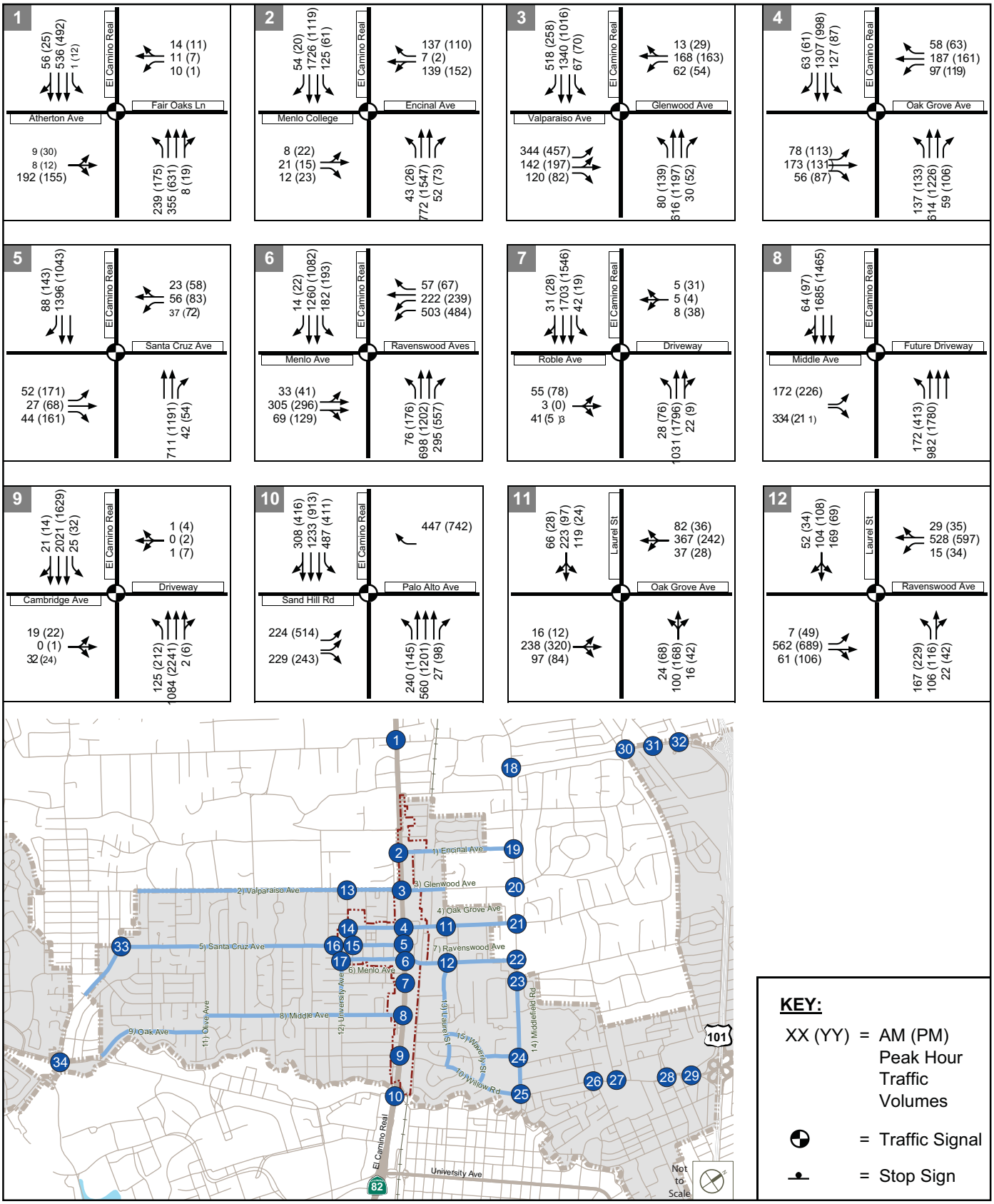
Existing Traffic Volumes and Intersection Levels of Service

Study Intersections

Operations at 34 intersections in the vicinity of the Plan area, listed below (with controlling jurisdiction[s]) and illustrated in Figure 4.13-1, were evaluated during the weekday morning (a.m.) and evening (p.m.) peak periods for Existing and 2035 conditions. The City of Menlo Park conducted traffic counts for the two two-hour peak periods, 7:00 a.m. to 9:00 a.m. and 4:00 p.m. to 6:00 p.m., in 2009 and early 2010. The highest one-hour measured volumes during each of these periods were used in the intersection analysis. The peak-hour traffic volumes and existing lane configurations at the study intersections are shown on **Figures 4.13-6a** through **4.13-6c**.

1. El Camino Real and Atherton Avenue/Fair Oaks Lane (Caltrans/Atherton)
2. El Camino Real and Encinal Avenue (Caltrans/Atherton/Menlo Park)
3. El Camino Real and Glenwood Ave./Valparaiso Ave. (Caltrans/Atherton/Menlo Park)
4. El Camino Real and Oak Grove Avenue (Caltrans/Menlo Park)
5. El Camino Real and Santa Cruz Avenue (Caltrans/Menlo Park)
6. El Camino Real and Menlo Avenue/Ravenswood Avenues (Caltrans/Menlo Park)
7. El Camino Real and Roble Avenue (Caltrans/Menlo Park)
8. El Camino Real and Middle Avenue (Caltrans/Menlo Park)
9. El Camino Real and Cambridge Avenue (Caltrans/Menlo Park)
10. El Camino Real and Sand Hill Road (Caltrans/Palo Alto)
11. Laurel Street and Oak Grove Avenue (Menlo Park)
12. Laurel Street and Ravenswood Avenue (Menlo Park)
13. University Drive and Valparaiso Avenue (Menlo Park/Atherton)
14. University Drive and Oak Grove Avenue (Menlo Park)
15. University Drive (N) and Santa Cruz Avenue (Menlo Park)
16. University Drive (S) and Santa Cruz Avenue (Menlo Park)
17. University Drive and Menlo Avenue (Menlo Park)

[11] Transportation Research Board. *Highway Capacity Manual* (2000).



SOURCE: Fehr & Peers

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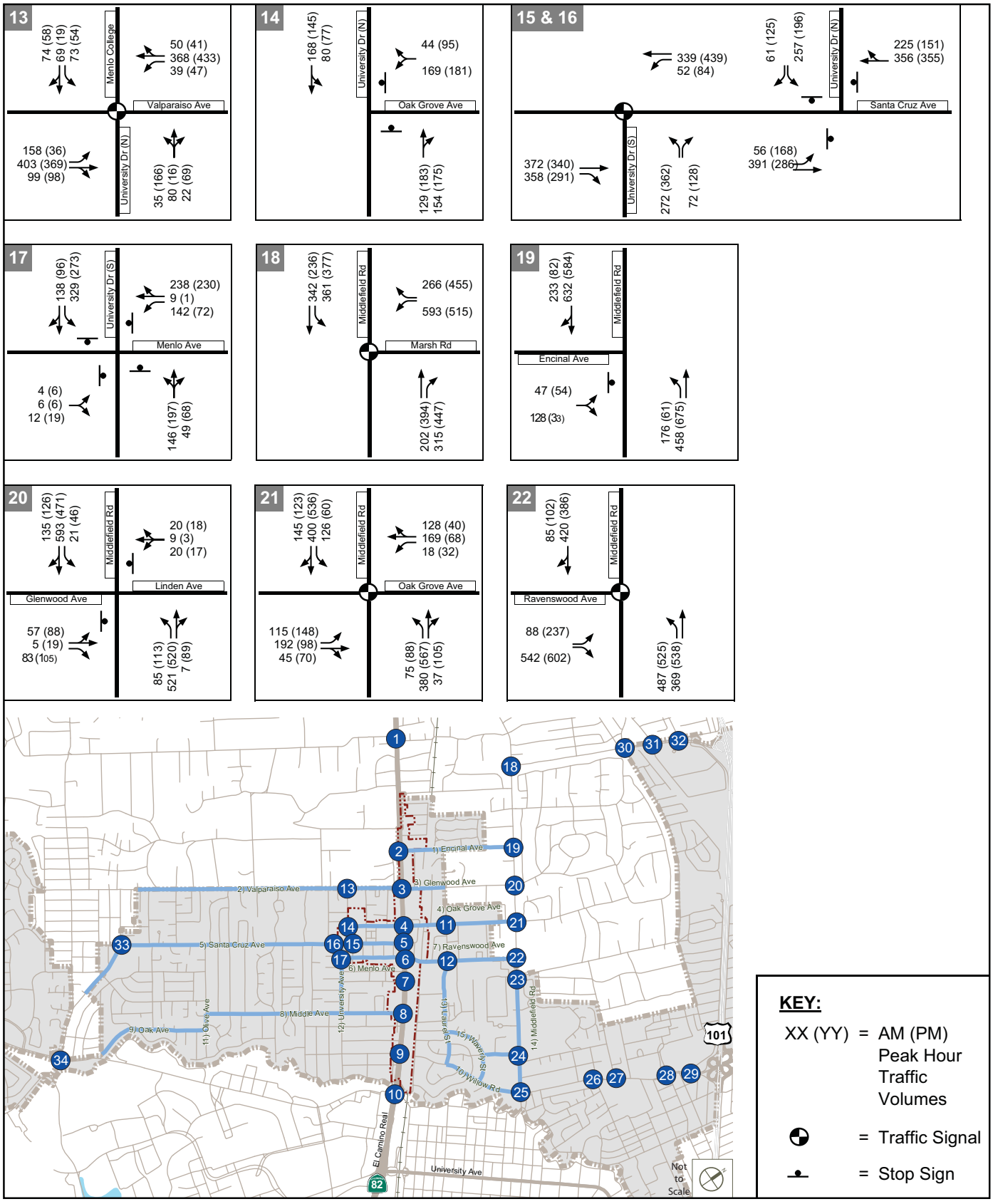
Figure 4.13-6a
Existing Lane Configurations,
Traffic Control Devices and Intersection Volumes



SOURCE: Fehr & Peers

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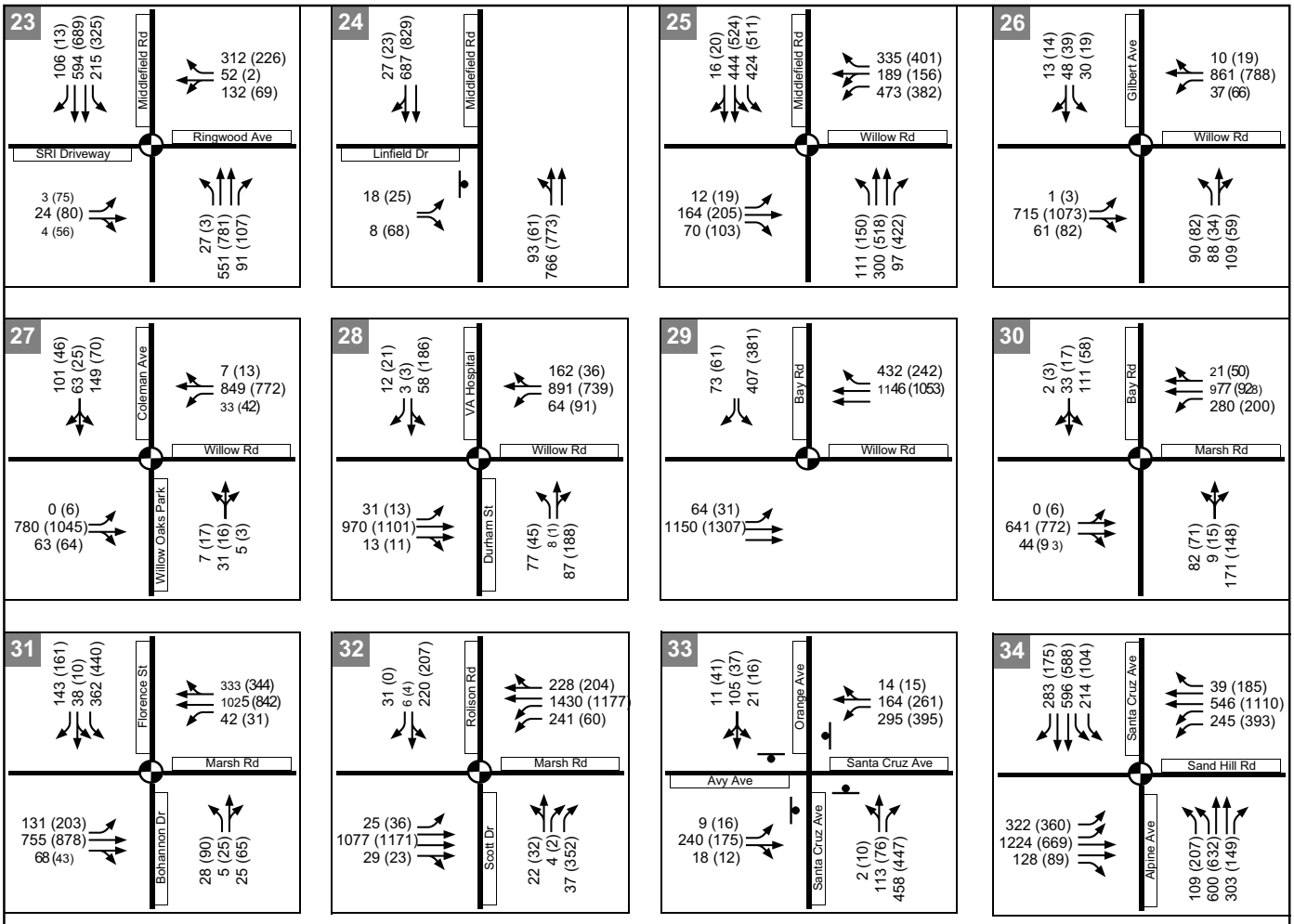
Figure 4.13-6b
Existing Lane Configurations,
Traffic Control Devices and Intersection Volumes



SOURCE: Fehr & Peers

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Figure 4.13-6c
Existing Lane Configurations,
Traffic Control Devices and Intersection Volumes

18. Middlefield Road and Marsh Road (Atherton)
19. Middlefield Road and Encinal Avenue (Atherton)
20. Middlefield Road and Glenwood Avenue/Linden Avenue (Atherton)
21. Middlefield Road and Oak Grove Avenue (Atherton)
22. Middlefield Road and Ravenswood Avenue (Menlo Park/Atherton)
23. Middlefield Road and Ringwood Avenue (Menlo Park/Atherton)
24. Middlefield Road and Linfield Drive (Menlo Park)
25. Middlefield Road and Willow Road (Menlo Park)
26. Gilbert Avenue and Willow Road (Menlo Park)
27. Coleman Avenue and Willow Road (Menlo Park)
28. Durham Street and Willow Road (Menlo Park)
29. Bay Road and Willow Road (Caltrans/Menlo Park)
30. Bay Road and Marsh Road (Menlo Park)
31. Florence Street/Bohannon Drive and Marsh Road (Menlo Park)
32. Scott Drive and Marsh Road (Menlo Park)
33. Orange Avenue/Santa Cruz Avenue and Avy Avenue/Santa Cruz Avenue (Menlo Park)
34. Santa Cruz Avenue/Alpine Avenue and Sand Hill Road (Menlo Park)

The results of the baseline intersection LOS analysis are presented in **Table 4.13-3**, and the corresponding calculation sheets are contained in the technical appendices of the transportation impact analysis (**Appendix E**). The focus of the EIR is on potential impacts associated with the proposed project (i.e., changes from existing baseline conditions), but to provide information on the acceptability of the existing conditions, Table 4.13-3 shows the LOS threshold (i.e., minimum acceptable service level for the study intersections). See Significance Criteria (page 4.13-33) for a full discussion of the thresholds of significance for intersections under the different jurisdictions.

All study intersections currently operate at an acceptable LOS under existing conditions, except those listed below.

- Eastbound Encinal Avenue approach to Middlefield Road (a.m. and p.m. peak hours)
- Eastbound Glenwood Avenue approach to Middlefield Road (a.m. and p.m. peak hours)

Field observations of traffic conditions found moderate to high levels of congestion along El Camino Real during the peak hours, although queues typically cleared within one signal cycle. The signals along El Camino Real benefit from adaptive signal timing, where the timing 'adapts' to the prevailing traffic conditions and responds to increased queues on a given approach by increasing the amount of green time assigned to that approach.

Study Freeway Segments

Freeway segments on U.S. Route 101 and I-280 were evaluated per the San Mateo County Congestion Management Program (CMP) requirements. Existing peak-hour volumes were obtained from Caltrans' 2008 Annual Average Daily Traffic volume counts and adjusted using Caltrans' Peak Hour Volume Data Report. Existing freeway segment levels of service were obtained from the *San Mateo County Congestion Management Program 2009 Traffic Level of Service and Performance Measure Monitoring Report.*[12]

[12] City and County Association of Governments of San Mateo County (C/CAG), *San Mateo County Congestion Management Program 2009 Traffic Level of Service and Performance Measure Monitoring Report* (2009).

TABLE 4.13-3
EXISTING INTERSECTION LEVELS OF SERVICE

Intersection (Jurisdiction)[a]	Traffic Control	Peak Hour	Average Delay[b]	LOS[c]	LOS Threshold
El Camino Real & Atherton Avenue/Fair Oaks Lane (Ct/At)	Signal	AM PM	39.8 35.9	D D	D
El Camino Real & Encinal Avenue (Ct/At/MP)	Signal	AM PM	18.3 17.8	B B	D
El Camino Real & Glenwood Ave./Valparaiso Ave. (Ct/At/MP)	Signal	AM PM	35.5 42.8	D D	D
El Camino Real & Oak Grove Avenue (Ct/MP)	Signal	AM PM	31.8 29.7	C C	D
El Camino Real & Santa Cruz Avenue (Ct/MP)	Signal	AM PM	10.6 24.2	B C	D
El Camino Real & Menlo Ave./Ravenswood Ave. (Ct/MP)	Signal	AM PM	40.5 44.1	D D	D
El Camino Real & Roble Avenue (Ct/MP)	Signal	AM PM	11.0 14.3	B B	D
El Camino Real & Middle Avenue (Ct/MP)	Signal	AM PM	29.0 27.6	C C	D
El Camino Real & Cambridge Avenue (Ct/MP)	Signal	AM PM	11.2 12.3	B B	D
El Camino Real & Sand Hill Road (Ct/PA)	Signal	AM PM	26.5 34.0	C C	D
Laurel Street & Oak Grove Avenue (MP)	Signal	AM PM	13.4 11.5	B B	C
Laurel Street & Ravenswood Avenue (MP)	Signal	AM PM	13.7 11.9	B B	D
University Drive & Valparaiso Avenue (MP/At)	Signal	AM PM	13.6 15.4	B B	D
University Drive & Oak Grove Avenue (MP)	All-way Stop	AM PM	10.0 11.2	B B	C
University Drive (N) & Santa Cruz Avenue (MP)	All-way Stop	AM PM	31.5 19.0	D C	D
University Drive (S) & Santa Cruz Avenue (MP)	Signal	AM PM	12.2 15.0	B B	D
University Drive & Menlo Avenue (MP)	All-way Stop	AM PM	13.5 12.4	B B	C
Middlefield Road & Marsh Road (At)	Signal	AM PM	34.0 29.0	C C	D
Middlefield Road & Encinal Avenue (At)	Side Street Stop	AM PM	**72.6** **50.3**	**F** **E**	D
Middlefield Road & Glenwood Avenue/Linden Avenue (At)	Side Street Stop	AM PM	**56.1** **>150**	**F** **F**	D
Middlefield Road & Oak Grove Avenue (At)	Signal	AM PM	11.6 10.8	B B	D
Middlefield Road & Ravenswood Avenue (MP/At)	Signal	AM PM	22.7 28.1	C C	D
Middlefield Road & Ringwood Avenue (MP/At)	Signal	AM PM	27.7 26.4	C C	D
Middlefield Road & Linfield Drive (MP)	Side Street Stop	AM PM	21.4 15.9	C C	D
Middlefield Road & Willow Road (MP)	Signal	AM PM	41.6 53.5	D D	D
Gilbert Avenue & Willow Road (MP)	Signal	AM PM	13.1 13.5	B B	D

TABLE 4.13-3 (Continued)
EXISTING INTERSECTION LEVELS OF SERVICE

Intersection (Jurisdiction) [a]	Traffic Control	Peak Hour	Average Delay[b]	LOS[c]	LOS Threshold
Coleman Avenue & Willow Road (MP)	Signal	AM PM	22.5 10.9	C B	D
Durham Street & Willow Road (MP)	Signal	AM PM	27.3 45.0	C D	D
Bay Road & Willow Road (Ct/MP)	Signal	AM PM	20.7 18.6	C B	D
Bay Road & Marsh Road (MP)	Signal	AM PM	16.1 14.3	B B	D
Florence Street/Bohannon Drive & Marsh Road (MP)	Signal	AM PM	16.4 20.7	B C	D
Scott Drive & Marsh Road (MP)	Signal	AM PM	22.6 26.6	C C	D
Orange Avenue/Santa Cruz Avenue & Avy Avenue/Santa Cruz Avenue (MP)	All-way Stop	AM PM	21.6 24.1	C C	D
Santa Cruz Avenue/Alpine Avenue & Sand Hill Road (MP)	Signal	AM PM	42.8 44.7	D D	D

[a] Jurisdictions: Ct - Caltrans, At - Atherton, MP - Menlo Park, PA - Palo Alto
[b] Whole intersection weighted average total delay for signalized and all-way stop-controlled intersections (expressed in seconds per vehicle). For side-street stop controlled intersections, delays for worst approach are shown.
[c] LOS calculations performed using the 2000 *Highway Capacity Manual - Special Report 209* delay methods for signalized and unsignalized intersections.

Unacceptable operations are indicated in **bold** type.

SOURCE: Fehr & Peers, 2010.

The study freeway segments are listed below.[13]

1. U.S. Route 101 North of Marsh Road
2. U.S. Route 101 South of Willow Road
3. I-280 North of Sand Hill Road
4. I-280 South of Alpine Road

The levels of service were based on average speeds obtained from travel time surveys. The study segments of U.S. Route 101 are currently operating at LOS F (with the exception of northbound U.S. Route 101 during the a.m. peak hour, which is operating at LOS D). Northbound I-280 in the study area is operating at LOS A/B during the a.m. peak hour and LOS D during the p.m. peak hour. In the southbound direction, I-280 is operating at LOS C during the a.m. peak hour and LOS A/B during the p.m. peak hour. As reported by San Mateo City/County Association of Governments (C/CAG) in their monitoring report, the selected segments affected by the Specific Plan-generated trips are currently operating at, or better than, their CMP LOS standards.

[13] Specific Plan traffic approaching from or departing to the north on US 101 will use the Marsh Road exit and conversely Specific Plan traffic approaching from or departing to the south on US 101 will use the Willow Road or University Avenue exit. Therefore the segment of US 101 between Marsh Road and Willow Road was not evaluated as the Specific Plan will not add traffic to this segment. A similar rationale was used to determine that Specific Plan traffic would not be added to the segment on I-280 between Sand Hill Road and Alpine Road.

4.13.2 Regulatory Setting

There are a number of agencies (regional, county, and local) whose policies apply to the Plan area. The policies listed below pertain to transportation and circulation.

California Department of Transportation (Caltrans)

The Caltrans has authority over the State highway system, including freeways, interchanges, and arterial State routes. Caltrans approves the planning, design, and construction of improvements for all State-controlled facilities including I-280, U.S. Route 101, SR 82 (El Camino Real), and the associated interchanges for these facilities located in Menlo Park. Caltrans strives to maintain LOS C operations on all state facilities. Caltrans considers any increase in traffic to a state-operated facility operating at an unacceptable level of service to be a significant impact.

For the purpose of the Specific Plan transportation analysis, mainline segments of U.S. Route 101 and I-280 are evaluated based on the Congestion Management Program threshold, and the El Camino Real intersections are evaluated based on the City of Menlo Park's thresholds.

Context Sensitive Solutions

Caltrans advocates enhancements to state facilities, such as SR 82 – El Camino Real that promote a community's vision and needs. Recognizing that meeting these needs may require flexibility; Caltrans has developed a process for approving alternative designs to their standards. This process evaluates each requested deviation for its potential effects on highway safety, regional needs, and the surrounding environment. Deviations from Caltrans policy or standards to meet community requests may require approval of an exception to a policy or nonstandard feature. The Main Streets: Flexibility in Design and Operations document provides possible solutions to the communities' needs.

Complete Streets

Caltrans issued a Deputy Directive noting that Caltrans develops integrated multimodal projects in balance with community goals, plans, and values. This is facilitated by creating "complete streets", which recognize that transportation corridors have multiple users with different abilities and mode preferences. The complete streets directive was used in the planning process for the Specific Plan in identifying changes to El Camino Real.

Metropolitan Transportation Commission (MTC)

The MTC is the Bay Area's regional transportation planning agency and federally-designated Metropolitan Planning Organization (MPO). MTC is responsible for preparing the Regional Transportation Plan, a comprehensive blueprint for the development of mass transit, highway, airport, seaport, railroad, bicycle, and pedestrian facilities within the nine county Bay Area region. The Regional Transportation Plan is a 20-year plan and is updated every three years to reflect new planning priorities and changing projections of growth and travel demand. The long-range plan must be based on a realistic forecast of future revenues and taken as a whole; the

improvement projects included must help improve regional air quality. MTC also screens requests from local agencies for state and federal grants for transportation projects to determine compatibility with the Regional Transportation Plan. As noted separately, the 2009 Regional Transportation Plan (RTP) (*Transportation 2035 Plan for the San Francisco Bay Area*) is the source for projections of background traffic growth in the cumulative analysis.

In recent years, state and federal laws have given MTC an increasingly important role in financing Bay Area transportation improvements. Most significant was the 1991 Intermodal Surface Transportation Efficiency Act (ISTEA), which increased the powers of Metropolitan Planning Organizations like MTC to determine the mix of transportation projects best suited to meet their region's needs. MTC also administers state monies, including those provided by the Transportation Development Act. Legislation passed in 1997 gives MTC increased decision-making authority over the selection of projects and allocation of funds for the State Transportation Improvement Program (STIP). The current federal funding program is known as Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU).

San Mateo City/County Association of Governments (C/CAG)

C/CAG serves as the Congestion Management Agency (CMA) of San Mateo County.[14] As the County's CMA, C/CAG is responsible for managing the county's blueprint to reduce congestion and improve air quality. C/CAG is authorized to set state and federal funding priorities for transportation improvements affecting the San Mateo County Congestion Management Program (CMP) transportation system. El Camino Real is the only roadway within the Plan area that is designated as a part of the CMP roadway system. C/CAG forwards on the County's prioritized list of projects to MTC for incorporation into the regional list to receive state and federal funding. C/CAG administers three primary programs and plans relevant to the Specific Plan; these programs are discussed below.

Congestion Management Program

The CMP specifies a system of highways and roadways for which traffic level of service standards are established. The San Mateo County system includes all freeways, state highways, and principal arterials in the county. The program sets level of service standards for all CMP roadway segments and intersections. El Camino Real has a level of service standard of LOS E. The CMP also contains an element promoting the use of alternative transportation modes and ways to reduce future travel demand. Improving the county's jobs/housing balance and implementing travel demand management strategies are specifically mentioned as ways of attaining the objectives of this element of the CMP. C/CAG requires local jurisdictions to analyze impacts of new developments or land use policy changes on CMP facilities. C/CAG has adopted a biennial schedule for monitoring the CMP Roadway System. The last monitoring report was completed in 2009. As noted separately, the 2009 CMP is the source for freeway segment traffic growth projections in the cumulative analysis.

[14] City/County Association of Governments of San Mateo County, *San Mateo County Congestion Management Program 2009* (September, 2009).

Countywide Bicycle Transportation Plan

The *San Mateo Countywide Bicycle Transportation Plan* details a set of policies, goals and objectives designed to be in concert with the county's and cities' general plans, the cities' bicycle plans, and other relevant regional plans.[15] These policies address important issues related to San Mateo County's bikeways such as planning, community involvement, utilization of existing resources, facility design, multi-modal integration, safety and education, support facilities and programs, funding, implementation and maintenance.

Along with the completion of a comprehensive countywide bikeway network that is coordinated with the individual city bicycle plans, the plan calls for new educational and promotional programs to be implemented over the 20-year life of the plan. The plan provides a detailed proposal for enhancements to safety education and marketing, including strategies to educate both bicyclists and motorists, improvements to curriculum, and marketing techniques to raise public awareness to the rules of the road. The plan also recommends that the implementation of bikeways, facilities and signage follow adopted Caltrans standards. C/CAG implements the countywide bicycle plan.

Countywide Transportation Plan

The *Countywide Transportation Plan* was adopted by C/CAG in 2001.[16] It seeks to reduce traffic congestion, increase demand for transit, decrease demand for automobile travel, and increase capacity for all modes. The plan also seeks to increase the safety, reliability, and convenience of all transportation systems. It discuses grade separations and Intelligent Transportation Systems, but does not note specific improvements for Menlo Park. The plan covers San Mateo County and includes improvements that are beyond cities' jurisdictions. The goal is for the countywide plan and city plans to be consistent.

San Mateo County Transit District (SamTrans)

SamTrans serves as primary transit operator for San Mateo County and is responsible for the development, operation, and maintenance of the transit system within the county. SamTrans operates over 50 bus lines in addition to shuttle and paratransit service.

Grand Boulevard Initiative

The Grand Boulevard Initiative is a collaboration of 19 cities, two counties, and several regional and local agencies and other stakeholders united in an effort to transform the El Camino Real corridor, which stretches from Daly City to San Jose.[17] The vision adopted by the Grand Boulevard Task Force is:

[15] City and County Association of Governments of San Mateo County, *San Mateo County Bicycle Route Plan* (October 2000).
[16] City and County Association of Governments of San Mateo County, San *Mateo County Countywide Transportation Plan* (April 2001).
[17] *Grand Boulevard Multimodal Transportation Corridor Plan* (October 2010).

> El Camino Real will achieve its full potential as a place for residents to work, live, shop and play, creating links between communities that promote walking and transit and an improved and meaningful quality of life.

The initiative seeks to improve the performance, safety, and aesthetics of El Camino Real. It challenges communities to rethink the corridor's potential for housing and urban development, balancing the need for cars and parking with viable options for transit, walking and biking. The initiative's guiding principles are listed below.

- Target housing and job growth in strategic areas along the corridor.
- Encourage compact mixed-use development and high-quality urban design and construction.
- Create a pedestrian-oriented environment and improve streetscapes, ensuring full access to and between public areas and private developments.
- Develop a balanced multi-modal corridor to maintain and improve mobility of people and vehicles along the corridor.
- Manage parking assets.
- Provide vibrant public spaces and gathering places.
- Preserve and accentuate unique and desirable community character and the existing quality of life in adjacent neighborhoods.
- Improve safety and public health.
- Strengthen pedestrian and bicycle connections with the corridor.
- Pursue environmentally sustainable and economically viable development patterns.

City of Menlo Park General Plan

The City of Menlo Park's General Plan provides a blueprint for growth within the City, and sets the goals, policies, and programs that apply to the Plan area.[18] Goals and policies related to transportation, circulation, and parking are primarily found in the circulation and land use elements.

Circulation Element

The Circulation Element includes specific goals and policies for motor vehicle, public, and non-motorized transportation, as well as overall transportation systems management. Given the length of the goal and policy statements, selected policies from the Circulation Element are summarized below. Reference to the specific goal or policy is provided in parenthesis to enable the reader to refer to the exact language in the Circulation Element.

[18] City of Menlo Park, *General Plan* (December, 1994).

Thoroughfares

- Maintain a circulation system that will provide for the safe and efficient movement of people and goods throughout Menlo Park for residential and commercial purposes. (Goal II-A)

- Level of Service D or better shall be maintained at all City-controlled signalized intersections during peak hours, except at the intersection of Ravenswood Avenue and Middlefield Road and at intersections along Willow Road from Middlefield Road to U.S. Route 101. (Policy II-A-1)

- The City should attempt to achieve and maintain average travel speeds of 14 miles per hour or better on El Camino Real and other arterial roadways controlled by the State and at 46 miles per hour or better on U.S. Route 101 (Level of Service D). (Policy II-A-2)

- The City shall work with Caltrans to ensure that average stopped delay on local approaches to State-controlled signalized intersections does not exceed Level of Service E. (Policy II-A-3)

- New development shall be restricted or required to implement mitigation measures in order to maintain the levels of service and travel speeds specified in Policies II-A-1 through II-A-3. (Policy II-A-4)

- The City shall employ appropriate modern technology traffic signal equipment with the objective of limiting average vehicle delay to Level of Service E on any approach to a City-controlled signalized intersection during peak hour periods and attempt to approach demand control during off-peak periods. (Policy II-A-5)

- The City shall work with Caltrans to ensure they use appropriate modern traffic technology traffic equipment on State routes with the objective of limiting average vehicle delay to Level of Service E on all minor approaches during peak hour periods and attempt to approach demand control during off-peak periods. (Policy II-A-6)

- All streets should operate consistent with the Roadway Classification System Guidelines in Part II of the General Plan, that presents a hierarchy of street classifications reflecting trade-offs between traffic flow and property access (i.e., primary arterials, minor arterials, collectors and local streets). (Policy II-A-7)

- The City should provide safe, efficient, and equitable use of streets by pedestrians and bicyclists through good roadway design, maintenance, and effective traffic law enforcement. (Policy II-A-12)

- The City should cooperate with other jurisdictions to secure funding for improvements and develop methods to reduce traffic impacts on a regional and subregional basis. (Policy II-A-13)

Impacts on Local Neighborhoods

- New development shall be reviewed for its potential to generate significant traffic volumes on local streets in residential areas and shall be required to mitigate potential significant traffic problems. (Policy II-A-8)

- Neighborhood streets should be protected from excessive speeds and excessive volumes of through traffic. (Policy II-A-9)

Transit Facilities

- The City should consider transit modes in the design of transportation improvements and the review and approval of development projects. (Policy II-B-1)

- As many activities as possible should be located within easy walking distance of transit stops, and transit stops should be convenient and close to as many activities as possible. (Policy II-B-2)

Transportation Systems Management/Transportation Demand Management

- The City should work with employers to encourage employees to use alternatives to the single occupant automobile in their commute to work. (Policy II-C-1)

- Commuter shuttle service should be maintained and improved. (Policy II-C-7)

Bicycling

- The City should work to complete a system of bikeways within Menlo Park. (Policy II-D-2)

- The design of streets should consider the impact of street cross section, intersection geometrics, and traffic control devices on bicyclists. (Policy II-D-3)

- Bicycle storage should be provided at new commercial and industrial developments. It should also be provided at transit stations. (Policy II-D-4)

Pedestrians

- The City shall endeavor to maintain safe sidewalks and walkways where existing within the public right-of-way. (Policy II-E-2)

- Appropriate traffic control should be provided for pedestrians at intersections. (Policy II-E-3)

- The City shall incorporate appropriate pedestrian facilities, traffic control, and street lighting within street improvement projects to maintain or improve pedestrian safety. (Policy II-E-4)

- The City should support full pedestrian access across all legs of an intersection at all signalized intersections which are City-controlled and at the signalized intersections along El Camino Real. (Policy II-E-5)

Parking

- Adequate off-street parking should be required for all new development in the downtown area. (Policy II-F-1)

- Short-term retail customer parking shall be first priority for the allocation of parking spaces in downtown parking plazas. Long-term employee parking shall be located in such a manner that it does not create a shortage of customer parking adjacent to retail shops. (Policy II-F-2)

Land Use Element

The following policies of the land use element are applicable to transportation, circulation and parking.

- Parking which is sufficient to serve the retail needs of the downtown area and which is attractively designed to encourage retail patronage shall be provided. (Policy I-B-2)

- New development shall not reduce the number of existing parking spaces in the Assessment District, on P-zoned parcels, or on private property where parking is provided in lieu of Assessment District participation. (Policy I-B-3)

- New and upgraded retail development shall be encouraged along El Camino Real near downtown, especially stores that will complement the retailing mix of downtown. Adequate parking must be provided and the density, location, and site design must not aggravate traffic at congested intersections. (Policy I-C-1)

- Any new or expanded office use must include provisions for adequate off-street parking, mitigating traffic impacts, and developing alternatives to auto commuting. (Policy I-E-4)

- Well-designed pedestrian facilities should be included in areas of intensive pedestrian facilities. (Policy I-G-11)

Menlo Park Comprehensive Bicycle Development Plan

The Comprehensive Bicycle Development Plan recommends the enhancement of the existing network with the addition of approximately 0.3 miles of new Class I Bike Paths, 3.6 miles of new Class II Bike Lanes, and 16.8 miles of new Class III Bike Routes.[19] Several long-term projects are also identified; including two short Class I connector segments near the Bayfront Expressway and two new bicycle/pedestrian undercrossings including the Caltrain crossing near Middle Avenue.

The plan outlines new educational and promotional programs aimed at bicyclists and motorists. These programs include bicycle parking improvements, multi-modal (transit) support facilities, bicycle safety and education programs for cyclists and motorists, safe routes to schools programs, community and employer outreach programs, continued development of bikeway network maps, and bike-to-work and school day events, among others. The prioritization and budgeting of individual bicycle improvements takes place through City Council approval of the five-year CIP (Capital Improvement Program). This process incorporates public comment.

Sidewalk Master Plan

The *Sidewalk Master Plan* identifies segments with no standard walkway or discontinuous walkway facilities; identifies opportunities and constraints for future walkway facilities; recommends changes and additions to existing programs, policies, and municipal codes; and develops prioritization criteria and procedures for installing standard sidewalks.[20] The Sidewalk Master Plan identified priority streets as those roadways that provide network connectivity and

[19] City of Menlo Park, *Menlo Park Comprehensive Bicycle Development Plan* (January, 2005).
[20] City of Menlo Park, *Sidewalk Master Plan* (January 2009).

access to important pedestrian destinations, such as schools, parks, and downtown. The priority streets make up over a third of the roadways under Menlo Park's jurisdiction. As with bicycle improvements, the prioritization and budgeting of individual sidewalk improvements takes place through City Council approval of the five-year CIP (Capital Improvement Program) which incorporates public comment.

Transportation Impact Fee (TIF)

The City levies a Transportation Impact Fee (TIF), the current version of which was developed in 2009 by establishing a nexus among the trips associated with development projects, their impacts on the transportation system, and the cost to improve the City's impacted transportation system. The detailed TIF study looked at projected growth, and then examined potential intersection mitigation measures identified in the General Plan, new intersection mitigation measures not previously identified, and other measures to improve the traffic flow within the City and reduce the impacts to the intersections and roadways. The total cost of these improvements was then estimated, and the developer/City shares were calculated to generate specific fees that will be required for new development.

The TIF study reviewed the improvement measures on a preliminary level. The adoption of the TIF ordinance does not require the City to construct all of the improvements in the plan. The mix of projects and the details related to each individual project can be modified and prioritized by Council over time. A more detailed design would need to be developed for each improvement measure prior to implementation. Not every mitigation measure may ultimately be feasible, depending on variables such as right-of-way acquisition.

El Camino Real/Downtown Vision Plan

The vision of the Menlo Park community for the El Camino Real corridor and downtown is expressed as 12 goals in the *El Camino Real/Downtown Vision Plan* unanimously accepted by the Menlo Park City Council on July 15, 2008.[21] Selected transportation-related goals from the Vision Plan are listed below.

- Provide greater east-west town-wide connectivity.
- Improve circulation and streetscape conditions on El Camino Real.
- Protect and enhance pedestrian amenities on Santa Cruz Avenue.
- Provide an integrated, safe and well-designed pedestrian and bicycle network.
- Develop parking strategies and facilities that meet the commercial and residential needs of the community.

[21] City of Menlo Park, *El Camino Real/Downtown Vision Plan* (July, 2008).

4.13.3 Impacts and Mitigation Measures

Significance Criteria

a) Implementation of the Plan would have a significant impact on intersection operations if it would result in the following.

- *At arterial signalized intersections in Menlo Park,* the addition of project traffic causes an intersection operating at LOS D or better to operate at LOS E or F; or an increase of 23 seconds or greater in average vehicle delay; or an increase of more than 0.8 seconds of delay to vehicles on the most critical movements of an arterial intersection operating at LOS E or F prior to the addition of project traffic.
- *At local approaches to State controlled signalized intersections in Menlo Park,* the addition of project traffic causes an intersection operating at LOS D or better to operate at LOS E or F; or an increase of 23 seconds or greater in average vehicle delay; or causes an increase of more than 0.8 seconds of delay to vehicles on local approaches to State controlled signalized intersections operating at LOS E or F prior to the addition of project traffic.
- *At other signalized intersections (collector or local streets),* the addition of project traffic causes an intersection operating at LOS C or better to operate at LOS D, E or F; or an increase of 23 seconds or greater in average vehicle delay; or an increase of more than 0.8 seconds of delay to vehicles on the most critical movements of a collector or local street intersection operating at LOS D, E or F prior to the addition of project traffic.
- *At signalized intersections within the City of Palo Alto,* the addition of project traffic causes a regional intersection operating at LOS E or better to operate at LOS F; or cause an intersection currently operating at LOS F to increase in critical movement delay of four seconds or more; and increase the critical volume-to-capacity (v/c) ratio by 0.01 or more.
- *At signalized intersections within the Town of Atherton,* the addition of project traffic causes an intersection operating at LOS D or better to operate at LOS E or F; or cause an intersection currently operating at LOS E to operate at LOS F; or cause an intersection currently operating at LOS F to increase delay by more than 4 seconds.
- *On minor arterial streets*, if the existing Average Daily Traffic Volume (ADT) is: (1) greater than 18,000 (90% of capacity) and there is a net increase of 100 trips or more in ADT due to project related traffic; (2) the ADT is greater than 10,000 (50% of capacity) but less than 18,000, and the project related traffic increases the ADT by 12.5% or the ADT becomes 18,000 or more; or (3) the ADT is less than 10,000, and the project related traffic increases the ADT by 25%.
- *On collector streets*, if the existing ADT is: (1) greater than 9,000 (90% of capacity) and there is a net increase of 50 trips or more in ADT due to project related traffic; (2) the ADT is greater than 5,000 (50% of capacity) but less than 9,000, and the project related traffic increases the ADT by 12.5% or the ADT becomes 9,000 or more; or (3) the ADT is less than 5,000, and the project related traffic increases the ADT by 25%.
- *On local streets*, a traffic impact may be considered potentially significant if the existing ADT is: (1) greater than 1,350 (90% of capacity) and there is a net increase of 25 trips or more in ADT due to project related traffic; (2) the ADT is greater than

750 (50% of capacity) but less than 1,350, and the project related traffic increases the ADT by 12.5% or the ADT becomes 1,350; or (3) the ADT is less than 750, and the project related traffic increases the ADT by 25%.

- *On freeway segments*, the addition of project traffic causes a freeway segment to operate worse than its adopted CMP LOS standard, or adds traffic equivalent to one percent of the segment's capacity for segments violating the CMP LOS standard prior to the addition of project traffic.

b) Implementation of the Plan would have a significant impact on transit operations if:

- The proposed project would generate a substantial increase in transit riders that cannot be adequately served by the existing transit services; or
- The proposed project would generate demand for transit services in an area that is more than ¼-mile from existing transit routes.

c) Implementation of the Plan would have a significant impact on pedestrian or bicycle circulation if:

- The project would not provide adequate pedestrian or bicycle facilities to connect to the area circulation system; or
- Vehicles would cross pedestrian facilities on a regular basis without adequate design and/or warning systems, causing safety hazards; or
- The project design would cause increased potential for bicycle/vehicle conflicts.

d) Implementation of the Plan would have a significant impact on parking if:

- The project fails to provide a sufficient quantity of parking for vehicles;
- The project increases off-site parking demand above that which is provided in the immediate project area; or
- The project fails to provide a sufficient quantity of parking for bicycles.

Comments received in response to the Notice of Preparation (NOP) included a concern with the potential impacts of the proposed parking garages on the ability of delivery and garbage vehicles to serve the adjacent properties. The Specific Plan requires a 25-foot setback between the garages and any adjacent private property for the express intent of providing services and emergency access. As a result, there would not be an impact from the parking garages on access to adjacent property, and this topic is not analyzed further.

There was also an NOP comment regarding vehicle queuing across the Caltrain tracks. This topic is not analyzed further due to the fact that there is not a specific threshold of impact and the fact that the Specific Plan would not substantially modify the existing conditions. Vehicle queues currently cross the Caltrain tracks during peak hours at the Ravenswood Avenue grade crossing, but warning devices and signage currently prevent most drivers from stopping directly on the tracks, and should continue to do so in the future. Turn restrictions at the adjacent intersection of Ravenswood Avenue and Alma Street during the PM peak hours also serve to improve traffic flow and limit the potential for cars stopping on the tracks.

Approach to Analysis

The Specific Plan would affect travel in Menlo Park in two general ways: (1) the new development that would occur because of the land use changes would increase travel demand, particularly vehicle traffic which is the primary travel mode in Menlo Park; and (2) the transportation system changes would cause some minor mode shifts and traffic diversions.[22] The increases in travel demand due to the new land uses and the associated amount of added traffic to the study locations on surrounding roadway system are addressed first, followed by a discussion on mode shift and traffic diversion.

Land Use Travel Demand and Traffic Projections

The Specific Plan's land use program includes both new development and redevelopment, which replaces existing land uses with, in some cases, different land uses or larger amounts of the same land use. The potential maximum amount of land use changes within the Plan area are summarized below:

- 680 multi-family dwelling units (apartments, condominiums, and townhouses);
- 91,800 square feet of retail space;
- 240,820 square feet of commercial (office) space; and
- 380 hotel rooms.

Trip Generation Rates

The amount of travel generated by the land use changes was estimated by applying trip generation rates and equations from the Institute of Transportation Engineers (ITE) Trip Generation, 8th edition.[23] The resulting trip generation rates are presented in **Table 4.13-4**.[24] This table also identifies the ITE land use associated with the rates. The rates were selected to reflect that this is an analysis of a land use plan and does not include specific land use developments. For example, general office rates were used to estimate trips generated by the commercial space, even though other uses, such as medical office space which has a slightly higher trip generation rate, are allowed. Using more land-use-specific rates was deemed to be overly speculative, especially as the City has discretion to require more detailed analyses of specific land use projects when they are proposed.

The ITE rates are derived from surveys of stand-alone uses in suburban locations with little to no transit access or opportunity for trips to be made between nearby uses via walking, bicycling, or very short vehicle trips. Therefore they are not reflective of the types of uses and development patterns of the Specific Plan. Trip reductions were applied to account for the infill and mixed-use nature of the land use plan and to account for transit trips due to the close proximity of the Menlo Park Caltrain station.

22 City of Menlo Park, *Transportation Impact Analysis Guidelines.*
23 Institute of Transportation Engineers (ITE), *Trip Generation, 8th Edition* (2008).
24 The equations for all uses (except retail, motel, and auto dealership uses, in which average rates were used) were applied to the total amount of each use in each subarea to obtain subarea specific rates. Therefore there are some slight variations in the rates. Apartment rates were selected for the residential uses as they are higher than condominium/townhouse rates and are therefore more conservative.

TABLE 4.13-4
TRIP GENERATION RATES

Specific Plan Land Use	ITE Land Use	ITE Land Use Code	Unit	Rates						
					AM Peak Hour			PM Peak Hour		
				Daily	In	Out	Total	In	Out	Total
Residential	Apartment	220	du	6.07[a] / 6.09[b] / 6.08[c] / 6.10[d]	0.10[a] / 0.10[b] / 0.10[c] / 0.11[d]	0.41[a] / 0.42[b] / 0.41[c] / 0.42[d]	0.50[a] / 0.52[b] / 0.51[c] / 0.53[d]	0.40[a] / 0.44[b] / 0.42[c] / 0.47[d]	0.22[a] / 0.24[b] / 0.22[c] / 0.26[d]	0.62[a] / 0.68[b] / 0.64[c] / 0.73[d]
Retail	Shopping Center	820	sf	42.94	0.61	0.39	1.00	1.83	1.90	3.73
Auto Dealership	New Car Sales	841	sf	33.34	1.50	0.53	2.03	1.01	1.58	2.59
Commercial	Office	710	sf	11.01 / 11.17[c]	1.36 / 1.42[c]	0.19	1.55 / 1.61[c]	1.25	1.23	1.49 / 1.48[c]
Motel	Motel	320	rm	5.63	0.16	0.29	0.45	0.25	0.29	0.47
Hotel	Hotel	310	rm	8.17 / 7.71[c]	0.34	0.22	0.56	0.31	0.22	0.59

[a] Downtown Area
[b] Station Area
[c] El Camino Real South Area
[d] El Camino Real North Area

SOURCE: Institute of Transportation Engineers, *Trip Generation*, 8th Edition (2008).

Infill/Mixed Use Development and Transit Trip Reductions

There are few methodologies available to estimate the unique trip generation characteristics of mixed-use and infill developments. One of the most commonly used methods is to use trip generation rates or equations from the Institute of Transportation Engineers (ITE) Trip Generation and apply reductions from the mixed-use internalization spreadsheet from the *ITE Trip Generation Handbook*.[25] This method has some shortcomings in that it is based on a limited sample size of six mixed-use sites in Florida, it is not recommended for town center projects such as the land uses changes proposed in Menlo Park's El Camino Real/Downtown Specific Plan, it is limited to three land use types (residential, retail, and office), and it does not take into account the influence of nearby land uses.

A more comprehensive analysis of mixed-use and infill trip generation was developed and is presented in the paper, *Traffic Generated by Mixed-Use Developments – A Six-Region Study Using Consistent Built Environmental Measures.*[26] The study gathered data from 239 sites/data sources, developed a trip internalization methodology (MXD model), and validated the methodology at 16 sites. Among the validation sites, use of the MXD model produced superior statistical performance of estimated versus observed external vehicle trips when compared to applications of the ITE rates alone or application of the ITE rates with the ITE trip internalization technique.

[25] Institute of Transportation Engineers (ITE), *Trip Generation Handbook, 2nd Edition* (March, 2004).
[26] Ewing, Reid, Michael Greenwald, Ming Zhang, Jerry Walters, et. al., *Traffic Generated by Mixed-Use Developments – A Six-Region Study Using Built Environmental Measures* (September, 2008).

Internalization reductions were estimated using both methods. The ITE reductions ranged from 0 to 13 percent, and the MXD reductions ranged from 10 to 16 percent. It was determined that a 10 percent reduction was appropriate to account for the infill and mixed-use nature of the land use plan where vehicle trips would be linked and/or replaced with walk and bicycle trips to nearby land uses.

Reductions in vehicle trips due to transit usage are based on the proposed transit mode share. Transit mode shares for mixed-use developments near transit stations were obtained from a January 2004 report titled *Travel Characteristics of Transit-Oriented Development in California*.[27] Transit use information for employment sites near rail stations was also obtained from Transportation Research Record 1835, Paper No. 03-4352, *Transit Use and Proximity to Rail – Results from Large Employment Sites in the San Francisco, California, Bay Area*, by Jennifer Dill.[28] This information, plus 2000 Census data, was used to develop transit use reductions for this analysis due to the proximity of the Caltrain station and bus routes on El Camino Real. Anticipated transit trip reductions for potential land use developments in the Plan area are presented in **Table 4.13-5**.

TABLE 4.13-5
TRANSIT TRIP REDUCTIONS

Location	Residential	Commercial (Office)	Retail	Hotel
Downtown Area[a]	5%	3%	2%	1%
Station Area[b]	10%	5%	3%	1%
El Camino Real South Area	2%	1%	0%	0%
El Camino Real North Area	2%	1%	0%	0%

NOTE: The reductions presented in Table 4.13-6 refer to the amount of vehicle trips being replaced by transit trips, primarily rail due to the proximity of the Caltrain station.

[a] Also includes adjacent parcels in the El Camino Real North and South Areas on the west side on El Camino Real
[b] Also includes adjacent parcels in the El Camino Real North and South Areas on the east side on El Camino Real

SOURCE: Fehr & Peers, 2010

Trip Generation Estimates

The trip generation estimates were summarized by subarea and for the Plan area as a whole as presented in **Table 4.13-6**. Rates based on land use type were applied to the new uses to be added and the existing occupied space to be removed to estimate the amount of net added traffic. It should be reiterated that these estimates represent an analysis of a land use plan and do not pertain to particular land use developments.[29]

[27] Lund, Hollie, Robert Cervero, Richard Wilson, *Travel Characteristics of Transit-Oriented Development in California* (January, 2004).
[28] Dill, Jennifer, *Transit Use and Proximity to Rail – Results from Large Employment Sites in the San Francisco, California, Bay Area* (January, 2003)
[29] The City has discretion to require more detailed analyses of specific land use projects when they are proposed and if their trip estimates differ from those in Table 4.13-7.

TABLE 4.13-6
SUMMARY OF TRIP GENERATION ESTIMATES BY SUB AREA

Area	Number of Trips						
	Daily	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Downtown							
Vehicle Trips Generated by Added Uses	5,243	133	137	270	243	239	482
Vehicle Trips Subtracted from Existing Uses being Removed	-643	-34	-8	-42	-23	-44	-67
Net Added Vehicle Trips	**4,600**	**99**	**129**	**228**	**220**	**195**	**415**
Station Area							
Vehicle Trips Generated by Added Uses	1,837	28	55	83	97	79	176
Vehicle Trips Subtracted from Existing Uses being Removed	-374	-46	-7	-53	-8	-43	-51
Net Added Vehicle Trips	**1,463**	**-18**	**48**	**30**	**89**	**36**	**125**
El Camino Real South							
Vehicle Trips Generated by Added Uses	8,221	429	190	619	327	482	809
Vehicle Trips Subtracted from Existing Uses being Removed	-1,814	-61	-31	-92	-66	-86	-152
Net Added Vehicle Trips	**6,407**	**368**	**159**	**527**	**261**	**396**	**657**
El Camino Real North							
Vehicle Trips Generated by Added Uses	1,410	77	49	126	70	95	165
Vehicle Trips Subtracted from Existing Uses being Removed	-495	-7	-5	-12	-21	-22	-43
Net Added Vehicle Trips	915	70	44	114	49	73	122
Plan Area							
Vehicle Trips Generated by Added Uses	16,711	667	431	1,098	737	895	1,632
Vehicle Trips Subtracted from Existing Uses being Removed	-3,326	-148	-51	-199	-118	-195	-313
Total Net Added Vehicle Trips	**13,385**	**519**	**380**	**899**	**619**	**700**	**1,319**

SOURCES: ITE *Trip Generation*, 8th Edition (2008); Fehr & Peers, 2010.

Trip Distribution and Assignment

The traffic generated by the Specific Plan land uses would be distributed on the roadway system based on the locations of complementary land uses. For example, the outbound residential vehicle trips during the a.m. peak hour would primarily comprise residents driving to work and school. Therefore these trips would be headed to employment centers and schools. The City of Menlo Park has developed directions of approach and departure for residential, employment, and commercial (retail) uses to be used to assign traffic generated by proposed developments to the City's roadway system. These directions are presented in the Circulation System Assessment document and were obtained from household interview surveys conducted in 1999, the City of Menlo Park *Employee Transportation Survey*, and pedestrian interviews conducted in 1998.[30] They vary based on the general locations within the city: Sharon Heights; West Menlo Park; West of U.S. Route 101; and East of U.S. Route 101. The Plan area is in West Menlo Park. Directions

[30] *City of Menlo Park, Circulation System Assessment Document (February, 2010) and City of Menlo Park, Menlo Park Employee Transportation Survey (1999).*

of approach and departure for the hotels were developed based on the relative locations of the San Francisco and San Jose Mineta International airports, major employment areas, and other nearby destinations. The directions of approach and departure are presented in **Table 4.13-7**. These directions of approach and departure were used to assign the Specific Plan added traffic to the study intersections, roadway segments, and freeway segments.

TABLE 4.13-7
DIRECTIONS OF APPROACH AND DEPARTURE

Gateway	Residential	Commercial (Office)	Retail	Hotel
I-280 North	5%	12%	7%	5%
I-280 South	9%	16%	3%	5%
Sand Hill West	1%	1%	1%	0%
SR 84 East	2%	20%	1%	10%
U.S. Route 101 South	9%	17%	3%	15%
U.S. Route 101 North	2%	4%	2%	15%
Alameda North	6%	4%	4%	0%
El Camino Real North	10%	7%	6%	10%
Junipero South	5%	3%	4%	0%
Sand Hill East	3%	1%	3%	0%
El Camino South	14%	7%	15%	17%
Sharon Heights	5%	1%	8%	3%
Downtown	26%	6%	38%	20%
Willows	3%	1%	5%	0%
Total	100%	100%	100%	100%

SOURCE: Circulation System Assessment Document, City of Menlo Park and Fehr & Peers, 2010.

Specific Plan Transportation Improvements

The Specific Plan contains transportation improvements aimed to make walking and bicycling more attractive modes of transportation. These include widened sidewalks on El Camino Real and Santa Cruz Avenue, improved crosswalks on El Camino Real to enhance the pedestrian experience, new grade-separated pedestrian/bicycle crossings at the Caltrain tracks near Santa Cruz Avenue and near Middle Avenue, and new bike lanes on Oak Grove Avenue. In addition, the Specific Plan introduces a hybrid category for planning purposes titled “Proposed Future Class II/Minimum Class III Bikeway.” The intention of this designation is to indicate that, within the long-term planning horizon of the Specific Plan, a Class II bicycle lane is desirable and may be feasible, while a Class III bicycle route should be designated in the short term. This approach is due to constraints that exist throughout the Plan area. These include existing right-of way widths that may be too narrow to accommodate Class II bicycle facilities and the need to remove existing on-street parking. Project-level environmental review would be required when and if the City determines to move forward with the Class II facilities.

Many of these improvements would help pedestrian travel between destinations in the Plan area and between the downtown and the Caltrain Station. The added bicycle routes and lanes, plus support facilities such as new bicycle parking facilities in the downtown, would allow some people to ride their bikes to the downtown instead of driving. Therefore, there would be some

decreases in vehicle travel, especially in the downtown and station areas. For the purposes of this analysis, no reductions were taken. Therefore, the analysis is conservative.

The following impact analysis focuses on potential impacts of the Plan related to transportation, circulation, and parking. The evaluation considered the Specific Plan, current conditions, and applicable regulations and guidelines.

Impacts

Intersection Operations

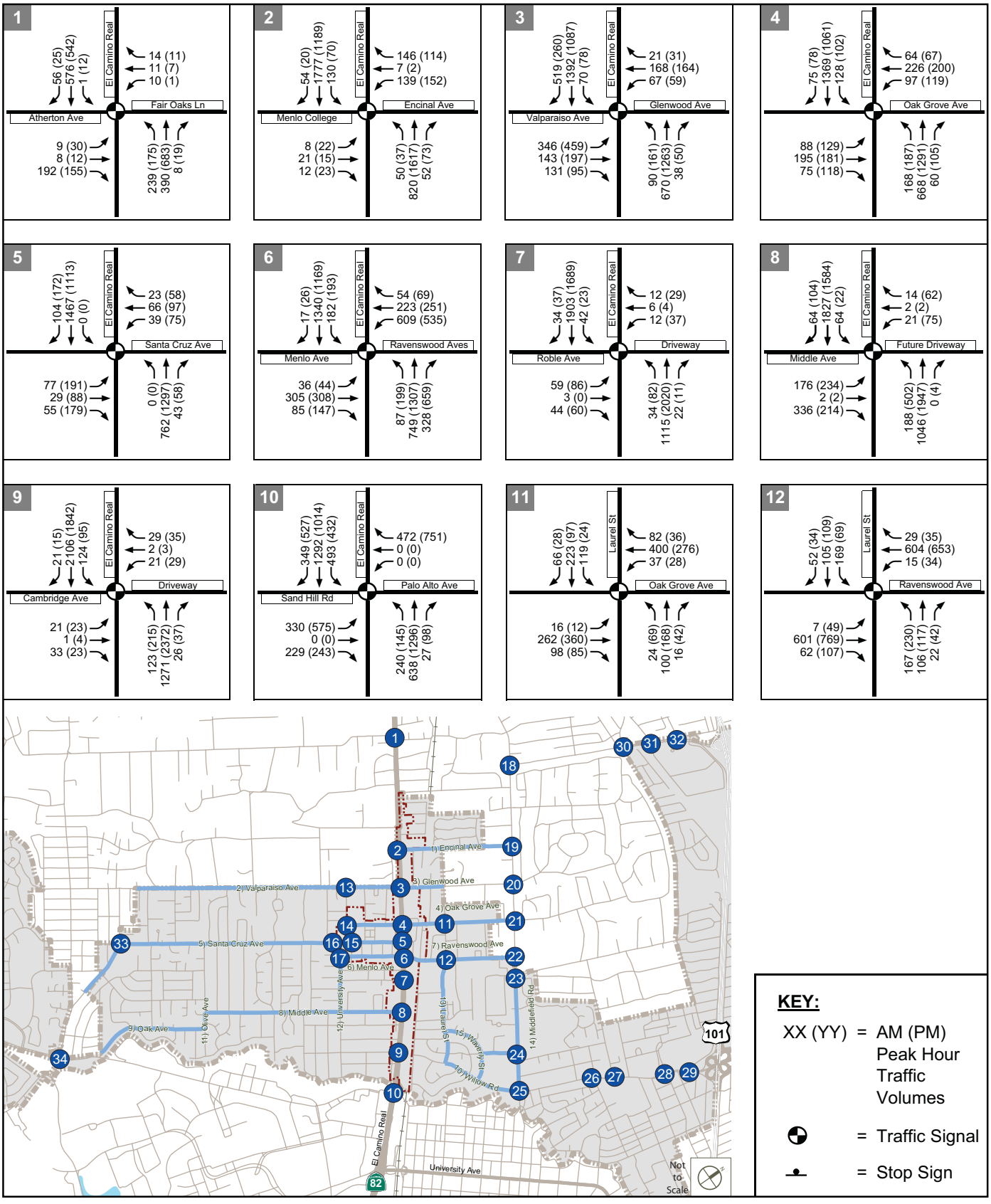
Impact TR-1: Traffic from future development in the Plan area would adversely affect operation of area intersections. (Significant)

Intersection service levels at the 34 study locations in Menlo Park and adjacent jurisdictions (described in the Setting) were calculated for Existing Plus Project Conditions. The resulting volumes are shown on **Figures 4.13-7a** through **4.13-7c**. The intersection LOS results are summarized in **Table 4.13-8**. For the study intersections on El Camino Real, delays and LOS on the side-street approaches also are shown. The corresponding LOS calculation sheets are included in technical appendices of the transportation impact analysis (**Appendix E**).

For the three intersections where potential right-turn lane removals were initially proposed to accommodate sidewalk extensions (Numbers 4, 5 and 6), the LOS analysis was conducted both with and without the lane change. The calculated intersection levels of service do not vary with the removal of the right-turn lanes. The right-turn lanes carry few vehicles in comparison to the through movements so adding those vehicles to the through lane (i.e., in a restriped shared through/right-turn lane) would not substantially increase the delay. There would be some approach delay changes, and the calculated intersection queues would vary with the removal of the right-turn lanes. Although the right-turn lanes carried few vehicles in comparison to the through movements, adding those movements to the through lane (a restriped shared through/right lane) would increase the queues by up to about a few hundred feet depending upon the intersection, direction, and peak hour. The corresponding LOS calculation sheets are included in technical appendices of the transportation impact analysis (**Appendix E**). However, the Final Specific Plan does not include these right-turn lane removals.

Some intersections show an improvement (reduction) in average delay with the addition of project traffic, which is counter-intuitive. The average delay values in the table are weighted averages, which are reduced when traffic is added to a movement with a low delay, such as the through movements in the non-peak direction on El Camino Real.[31] Conversely, relatively small volume increases to movements with high delays can increase the weighted average delay substantially.

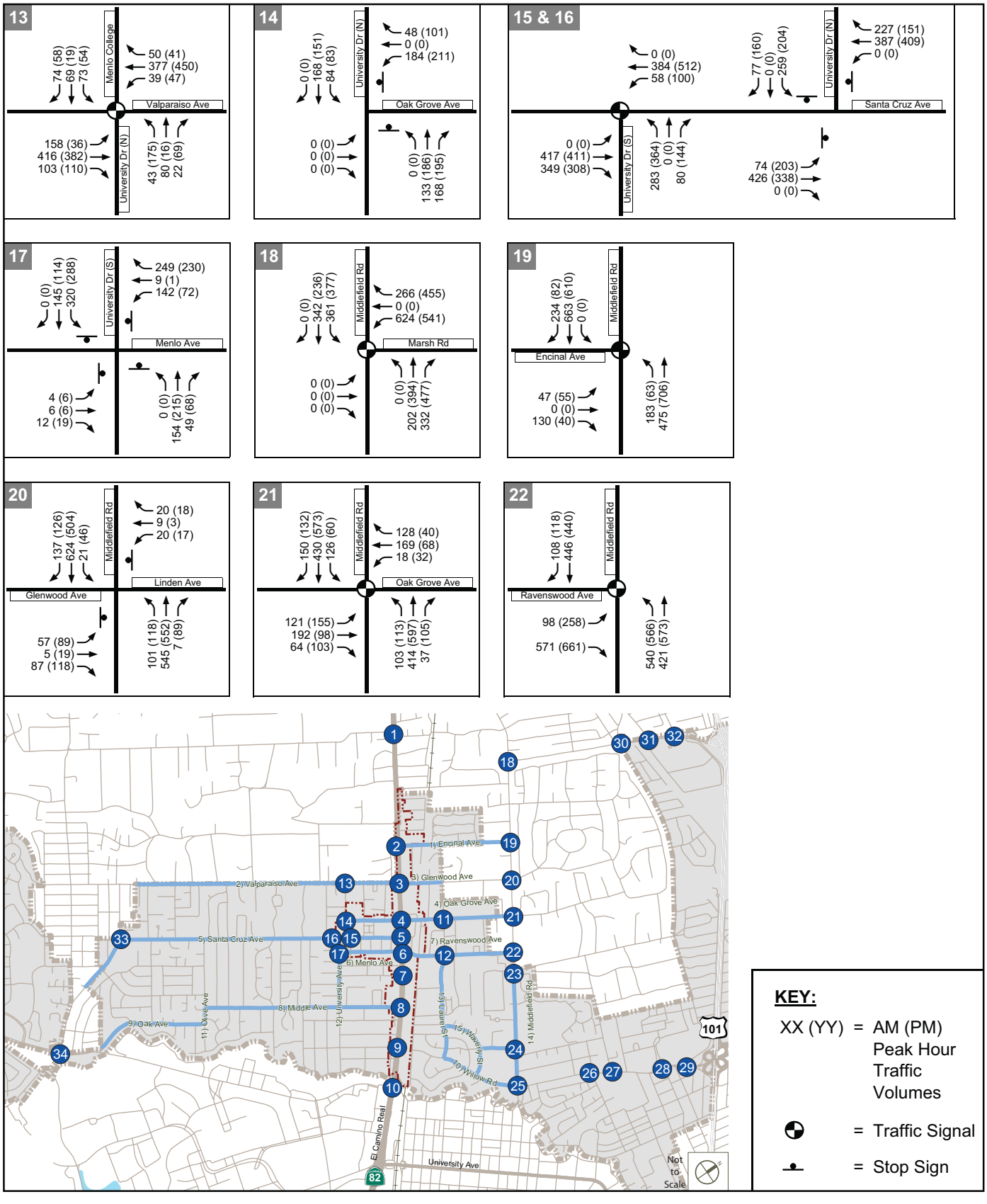
[31] For example, if you have one movement with 10 vehicles with a delay of 100 seconds and another movement with 400 vehicles and 10 seconds of delay, the weighted average delay is calculated as (100 seconds X 10 vehicles + 10 seconds X 400 vehicles) / 410 vehicles = 12.2 seconds per vehicle. Now if you add 100 vehicles to the movement with 10 seconds of delay, the weight average is calculated as (100 seconds X 10 vehicles + 10 seconds X 500 vehicles) / 510 vehicles = 11.8 seconds per vehicle. The weighted average delay improves, even though more vehicles are added.



SOURCE: Fehr & Peers

Menlo Park El Camino Real/Downtown Specific Plan EIR . 208581

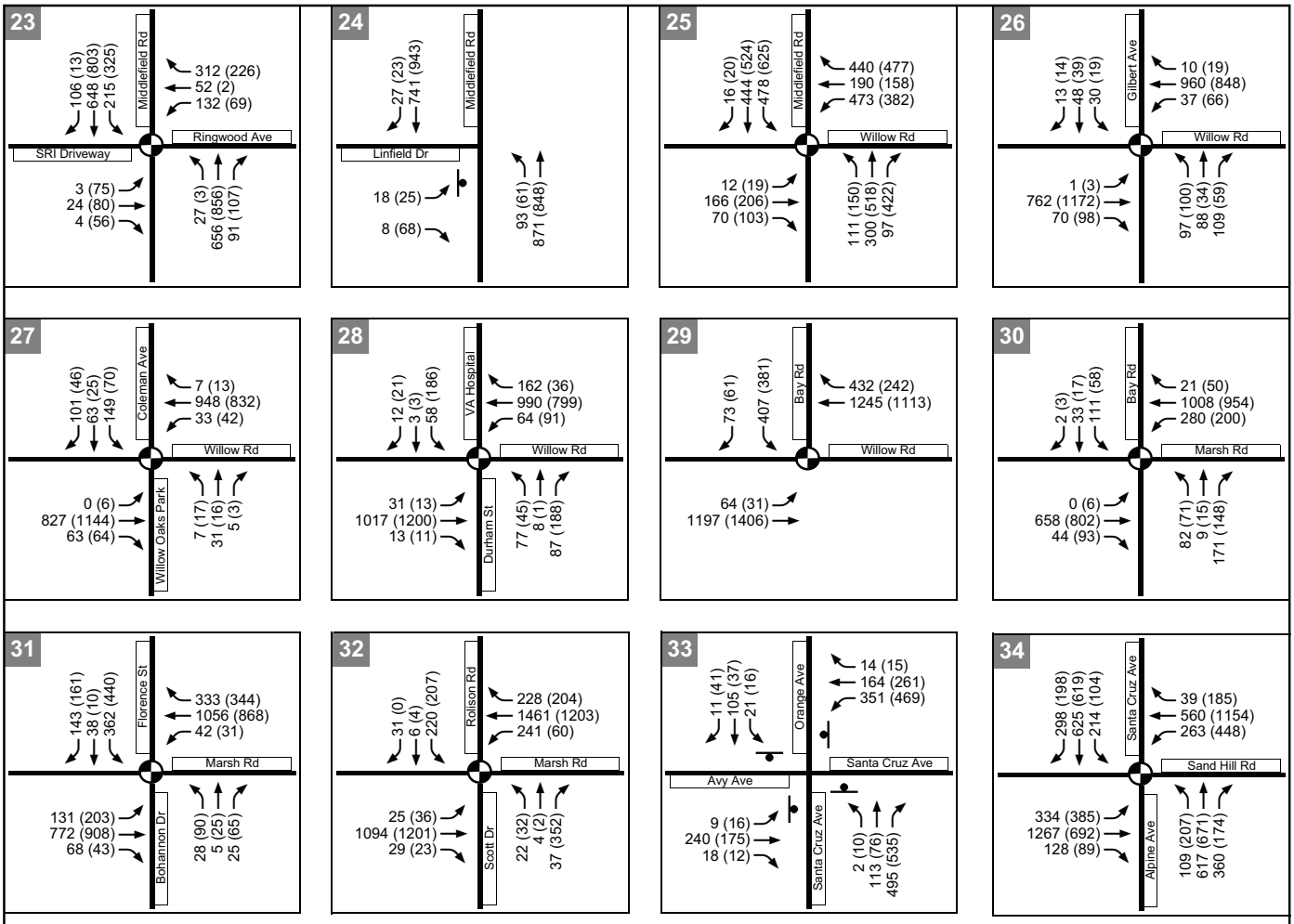
Figure 4.13-7a
Existing Plus Project
Traffic Control Devices and Intersection Volumes



SOURCE: Fehr & Peers

Menlo Park El Camino Real/Downtown Specific Plan EIR . 208581

Figure 4.13-7b
Existing Plus Project
Traffic Control Devices and Intersection Volumes



SOURCE: Fehr & Peers

Menlo Park El Camino Real/Downtown Specific Plan EIR . 208581

Figure 4.13-7c
Existing Plus Project
Traffic Control Devices and Intersection Volumes

TABLE 4.13-8
EXISTING PLUS PROJECT INTERSECTION LEVELS OF SERVICE

Intersection and Approach	Traffic Control	Peak Hour	LOS Threshold	Existing Conditions			Existing Plus Project Conditions			
				Critical Delay[a]	Average Delay[b]	LOS[c]	Critical Delay	Average Delay[b]	LOS[c]	Δ in Delay[d]
#1 El Camino Real & Atherton Avenue/ Fair Oaks Lane (Ct/At)	Signal	AM PM	D	42.1 40.7	39.8 35.9	D D	41.7 40.1	39.1 35.0	D D	-0.7 -0.9
Eastbound Approach		AM PM		40.7 36.6	40.7 36.6	D D	41.5 37.7	41.5 37.7	D D	0.8 1.1
Westbound Approach		AM PM		**64.6** **64.1**	**64.3** **64.0**	**E** **E**	**64.6** **64.1**	**64.3** **64.0**	**E** **E**	**0.0** **0.0**
#2 El Camino Real & Encinal Avenue (Ct/At/MP)	Signal	AM PM	D	14.7 19.3	18.3 17.8	B B	15.6 20.2	19.0 18.5	B B	0.7 0.7
Eastbound Approach		AM PM		- -	49.8 48.6	D D	- -	49.8 48.6	D D	0.0 0.0
Westbound Approach		AM PM		**61.2** **60.8**	**58.2** **57.0**	**E** **E**	**61.2** **60.8**	**58.4** **57.0**	**E** **E**	**0.2** **0.0**
#3 El Camino Real & Glenwood Avenue/ Valparaiso Avenue (Ct/At/MP)	Signal	AM PM	D	39.1 42.9	35.5 42.8	D D	40.9 48.7	36.6 45.5	C D	1.1 2.7
Eastbound Approach		AM PM		45.9 38.6	45.3 38.0	D D	45.9 38.6	45.3 37.9	D D	0.0 0.0
Westbound Approach		AM PM		**71.7** **71.5**	**68.0** **68.0**	**E** **E**	**75.2** **72.7**	**70.5** **68.8**	**E** **E**	**2.5** **0.8**
#4 El Camino Real & Oak Grove Avenue (Ct/MP) w/RT lanes	Signal	AM PM	D	29.5 27.2	31.8 29.7	C C	32.6 30.0	34.2 32.4	C C	2.4 2.7
Eastbound Approach		AM PM		**61.5** **64.4**	**63.0** **55.6**	**E** **E**	**78.5** **68.2**	**66.5** **57.4**	**E** **E**	**3.5** **1.8**
Westbound Approach		AM PM		**70.4** **59.4**	**61.2** **67.1**	**E** **E**	**65.3** **65.6**	**64.5** **69.4**	**E** **E**	**3.3** **2.3**
Without northbound and southbound right- turn lane	Signal	AM PM	D	N/A	N/A	N/A	32.9 30.2	35.0 33.5	C C	3.2 3.8
Eastbound Approach		AM PM					**78.5** **68.2**	**66.5** **57.4**	**E** **E**	**3.5** **1.8**
Westbound Approach		AM PM					**65.3** **65.6**	**64.5** **69.4**	**E** **E**	**3.3** **2.3**
#5 El Camino Real & Santa Cruz Avenue (Ct/MP) w/ RT lanes	Signal	AM PM	D	10.6 25.3	10.6 24.2	B C	11.9 26.6	11.5 25.3	B C	0.9 1.1
Eastbound Approach		AM PM		**62.7** 56.0	**62.3** 54.6	**E** D	**64.6** 58.3	**63.6** **56.3**	**E** **E**	**1.3** **1.7**

TABLE 4.13-8 (Continued)
EXISTING PLUS PROJECT INTERSECTION LEVELS OF SERVICE

Intersection and Approach	Traffic Control	Peak Hour	LOS Threshold	Existing Conditions			Existing Plus Project Conditions			
				Critical Delay[a]	Average Delay[b]	LOS[c]	Critical Delay	Average Delay[b]	LOS[c]	Δ in Delay[d]
Westbound Approach		AM PM		**64.7** **60.1**	**63.7** **58.6**	**E** **E**	**66.4** **62.0**	**65.0** **60.0**	**E** **E**	**1.3** **1.4**
Without southbound right-turn lane	Signal	AM PM	D	N/A	N/A	N/A	11.9 26.8	11.9 26.2	B C	1.3 2.0
Eastbound Approach		AM PM					**64.6** **58.3**	**63.6** **56.3**	**E** **E**	**1.3** **1.7**
Westbound Approach		AM PM					**66.4** **62.0**	**65.0** **60.0**	**E** **E**	**1.3** **1.4**
#6 El Camino Real & Menlo Avenue/ Ravenswood Avenues (Ct/MP) w/RT lanes	Signal	AM PM	D	41.0 54.8	40.5 44.1	D D	44.6 61.2	42.9 48.1	D D	2.4 4.0
Eastbound Approach		AM PM		**59.4** **61.9**	**59.4** **61.9**	**E** **E**	**60.7** **65.4**	**60.7** **65.4**	**E** **E**	**1.3** **3.5**
Westbound Approach		AM PM		**55.1** **61.3**	53.7 **60.3**	D **E**	**62.1** **66.7**	**58.8** **64.4**	**E** **E**	**5.0** **4.0**
Without southbound right-turn lane	Signal	AM PM	D	N/A	N/A	N/A	44.7 **61.2**	43.1 48.3	D D	2.6 4.2
Eastbound Approach		AM PM					**60.7** **65.4**	**60.7** **65.4**	**E** **E**	**1.3** **3.5**
Westbound Approach		AM PM					**62.1** **66.7**	**58.8** **64.4**	**E** **E**	**5.0** **4.0**
#7 El Camino Real & Roble Avenue (Ct/MP)	Signal	AM PM	D	10.9 13.9	11.0 14.3	B B	11.4 16.1	11.5 15.5	B B	0.5 1.2
Eastbound Approach		AM PM		**57.7** **64.5**	**57.7** **64.5**	**E** **E**	**58.2** **69.5**	**58.2** **69.5**	**E** **E**	**0.5** **5.0**
Westbound Approach		AM PM		- -	52.8 54.4	D D	- -	53.0 54.3	D D	0.2 -0.1
#8 El Camino Real & Middle Avenue (Ct/MP)	Signal	AM PM	D	35.5 40.8	29.0 27.6	C C	40.6 53.1	36.3 38.8	D D	7.3 11.2
Eastbound Approach		AM PM		49.8 67.5	46.4 **65.8**	D **E**	**58.1** **85.2**	**56.9** **82.4**	**E** **F**	**10.5** **16.6**
Westbound Approach		AM PM		N/A	N/A	N/A	**68.0** **73.2**	**62.6** **82.9**	**E** **F**	N/A

TABLE 4.13-8 (Continued)
EXISTING PLUS PROJECT INTERSECTION LEVELS OF SERVICE

Intersection and Approach	Traffic Control	Peak Hour	LOS Threshold	Existing Conditions			Existing Plus Project Conditions			
				Critical Delay[a]	Average Delay[b]	LOS[c]	Critical Delay	Average Delay[b]	LOS[c]	Δ in Delay[d]
#9 El Camino Real & Cambridge Ave (Ct/MP)	Signal	AM PM	D	13.5 6.6	11.2 12.3	B B	13.7 21.0	14.0 21.0	B B	2.8 8.7
Eastbound Approach		AM PM		**66.8** **66.4**	**66.8** **66.4**	**E** **E**	**67.5** **67.5**	**67.5** **67.5**	**E** **E**	**0.7** **1.1**
Westbound Approach		AM PM		**-** **-**	**62.0** **62.8**	**E** **E**	**-** **74.4**	**67.2** **74.4**	**E** **E**	**5.2** **11.6**
#10 El Camino Real & Sand Hill Road (Ct/PA)	Signal	AM PM	E	24.3 41.8	26.5 34.0	C C	26.9 43.3	28.7 34.7	C C	2.2 0.7
#11 Laurel Street & Oak Grove Avenue (MP)	Signal	AM PM	C	14.3 12.1	13.4 11.5	B B	14.6 12.2	13.6 11.6	B B	0.2 0.1
#12 Laurel Street & Ravenswood Avenue (MP)	Signal	AM PM	D	14.8 11.6	13.7 11.9	B B	15.2 12.1	14.2 12.1	B B	0.5 0.2
#13 University Dr (N) & Valparaiso Ave (MP/At)	Signal	AM PM	D	13.7 15.6	13.6 15.4	B B	13.9 15.8	13.7 15.6	B B	0.1 0.2
#14 University Dr (N) & Oak Grove Ave (MP)	All-way Stop	AM PM	C	10.0 11.2	10.0 11.2	B B	10.4 12.1	10.4 12.1	B B	0.4 0.9
#15 University Dr (N) & Santa Cruz Ave (MP)	All-way Stop	AM PM	D	31.5 19.0	31.5 19.0	D C	***41.9*** 26.9	***41.9*** 26.9	***E*** D	***10.4***[e] 7.9
#16 University Dr (S) & Santa Cruz Ave (MP)	Signal	AM PM	D	15.3 16.8	12.2 15.0	B B	15.2 17.8	12.3 15.8	B B	0.1 0.8
#17 University Drive (S) & Menlo Avenue (MP)	All-way Stop	AM PM	C	13.5 12.4	13.5 12.4	B B	13.5 12.9	13.5 12.9	B B	0.0 0.5
#18 Middlefield Road & Marsh Road (At)	Signal	AM PM	D	61.1 44.5	34.0 29.0	C C	70.6 48.0	39.4 30.9	D C	5.4 1.9
#19 Middlefield Road & Encinal Avenue (At)	Signal	AM PM	D	22.3 12.4	17.2 9.1	B A	23.8 12.9	18.2 9.4	B B	1.0 0.3
#20 Middlefield Road & Glenwood Avenue /Linden Avenue (At)	Side Street Stop	AM PM	D	7.5 25.1	**56.1** **>150**	**F** **F**	***10.1*** ***34.1***	***79.4*** ***>150***	***F*** ***F***	***2.6***[e] ***9.1***[e]
#21 Middlefield Road & Oak Grove Avenue (At)	Signal	AM PM	D	12.1 10.7	11.6 10.8	B B	12.3 11.2	11.8 11.3	B B	0.2 0.5
#22 Middlefield Road & Ravenswood Ave (MP/At)	Signal	AM PM	D	30.1 38.3	22.7 28.1	C C	32.5 43.0	24.3 31.6	C C	1.6 3.5
#23 Middlefield Road & Ringwood Ave (MP/At)	Signal	AM PM	D	32.9 32.6	27.7 26.4	C C	33.9 33.1	28.3 26.3	C C	-0.6 -0.1

TABLE 4.13-8 (Continued)
EXISTING PLUS PROJECT INTERSECTION LEVELS OF SERVICE

Intersection and Approach	Traffic Control	Peak Hour	LOS Threshold	Existing Conditions			Existing Plus Project Conditions			
				Critical Delay[a]	Average Delay[b]	LOS[c]	Critical Delay	Average Delay[b]	LOS[c]	Δ in Delay[d]
#24 Middlefield Road & Linfield Drive (MP)	Side Street Stop	AM PM	D	0.9 1.2	21.4 15.9	C C	0.8 1.2	24.3 18.2	C C	2.9 2.3
#25 Middlefield Road & Willow Road (MP)	Signal	AM PM	D	43.2 **62.2**	41.6 53.5	D D	45.1 ***78.9***	42.9 ***64.5***	D ***E***	1.3 ***16.7***[e]
#26 Gilbert Avenue & Willow Road (MP)	Signal	AM PM	D	13.9 15.5	13.1 13.5	B B	14.9 22.7	13.9 19.4	B B	0.8 5.9
#27 Coleman Avenue & Willow Road (MP)	Signal	AM PM	D	33.0 13.9	22.5 10.9	C B	32.2 16.6	22.4 12.7	C B	-0.1 1.8
#28 Durham Street & Willow Road (MP)	Signal	AM PM	D	39.1 44.2	27.3 45.0	C D	61.5 44.1	38.9 45.7	D D	11.6 0.7
#29 Bay Road & Willow Road (Ct/MP)	Signal	AM PM	D	24.5 18.3	20.7 18.6	C B	24.7 18.5	20.5 18.4	C B	-0.2 -0.2
#30 Bay Road & Marsh Road (MP)	Signal	AM PM	D	22.7 19.9	16.1 14.3	B B	22.8 20.0	16.1 14.4	B B	0.0 0.1
#31 Florence St/ Bohannon Dr & Marsh Rd (MP)	Signal	AM PM	D	17.9 23.6	16.4 20.7	B C	17.9 23.6	16.3 20.6	B C	-0.1 -0.1
#32 Scott Drive & Marsh Road (MP)	Signal	AM PM	D	25.7 36.3	22.6 26.6	C C	27.1 36.2	23.4 26.5	C C	0.8 -0.1
#33 Orange Avenue/Santa Cruz Avenue & Avy Avenue/Santa Cruz Avenue (MP)	All-way Stop	AM PM	D	21.6 24.1	21.6 24.1	C C	28.7 ***46.1***	28.7 ***46.1***	D ***E***	7.1 ***22.0***[e]
#34 Santa Cruz Avenue/ Alpine Avenue & Sand Hill Road (MP)	Signal	AM PM	D	41.2 45.9	42.8 44.7	D D	43.9 46.9	44.1 45.6	D D	1.3 0.9

NOTES:

Jurisdictions: Ct - Caltrans, At - Atherton, MP - Menlo Park, PA - Palo Alto

* Denotes Caltrans intersection. Unacceptable operations are indicated in **bold** type, and significant impacts are indicated in ***bold & Italic*** type

[a] Average control delay (expressed in seconds per vehicle) for the critical movements only.
[b] Whole intersection weighted control total delay for signalized and all-way stop-controlled intersections (expressed in seconds per vehicle). For side-street stop controlled intersections, delays for worst approach are shown.
[c] LOS calculations performed using the methodology outlines in the 2000 *Highway Capacity Manual – Special Report 209*.
[d] Change in average delay between Existing and Existing Plus Project Conditions (unless otherwise noted).
[e] Average Critical Delay Change

SOURCE: Fehr & Peers, 2010

The results in Table 4.13-8 indicate that the Specific Plan would result in significant traffic impacts at the following intersections under Existing Plus Project Conditions:

Intersection Number	Impact
15	University Drive (North) and Santa Cruz Avenue would degrade from LOS D to LOS E in the a.m. peak hour (see Mitigation Measure TR-1a)
20	Middlefield Road and Glenwood Avenue/Linden Avenue would worsen the prevailing LOS F conditions (exceeding the threshold of significance) in both the a.m. and p.m. peak hours (see Mitigation Measure TR-1b)
25	Middlefield Road and Willow Road would degrade from LOS D to LOS E in the p.m. peak hour (see Mitigation Measure TR-1c)
33	Orange Avenue/Santa Cruz Avenue and Avy Avenue/Santa Cruz Avenue would degrade from LOS C to LOS E in the p.m. peak hour (see Mitigation Measure TR-1d)

Mitigation Measure TR-1a: The individual project applicant(s) shall contribute fair-share funding towards the following improvements at the intersection of University Drive (North) and Santa Cruz Avenue:

- Signalization when investigation of the full set of traffic signal warrants indicate that signalization is warranted; and
- Interconnecting the new signal with the existing signal at the University Drive (South) and Santa Cruz Avenue.

With Mitigation TR-1a, the intersection improves the level of service to LOS C during the a.m. peak hour under Existing plus Project Conditions, and the impact would be reduced to a less-than-significant level.

The new signal would increase queuing in all directions. Based on the westbound through and right-turn maximum queue estimates, the right-turn pocket at the University Drive (South) and Santa Cruz Avenue intersection should be at minimum 500 feet long. The distance between the University Drive (South) and Santa Cruz Avenue intersection and the upstream intersection at Johnson Street is approximately 300 feet; therefore, the eastbound right-turn pocket should extend beyond Johnson Street. This turn pocket extension would require the removal of several parking spaces on the south side of Santa Cruz Avenue.

Based on the southbound left-turn and right-turn maximum queue estimates, the right-turn pocket at the University Drive (North) and Santa Cruz Avenue intersection should be approximately 150 feet long. This turn pocket extension would require the removal of two parking spaces on the west side of University Drive.[32] Long queues would also extend into the downtown area of Menlo Park. However, due to the pedestrian-oriented nature of this area, no modifications are proposed.

[32] The two parking spaces that would be removed for the turn pocket extension are in addition to those identified in the Specific Plan.

This intersection (University Drive (North) and Santa Cruz Avenue) currently meets the peak-hour traffic signal warrant (see **Appendix E**). However, the peak-hour signal warrant analysis should not serve as the only basis for deciding whether and when to install a signal. To reach such a decision, the full set of warrants should be investigated based on a thorough study of traffic and roadway conditions.

The decision to install a signal should not be based solely upon the warrants, because the installation of signals can lead to certain types of collisions, such as rear end collisions. Regular monitoring of actual traffic conditions and accident data, and timely re-evaluation of the full set of warrants should be considered to prioritize and program intersections for signalization.

While this improvement is not in the City's Transportation Impact Fee program (TIF), the TIF includes several funded signal installations, but with unspecified locations. Therefore, the City would consider this as a candidate for use of TIF funds. Without a funding mechanism, this impact is considered to be significant and unavoidable.

Significance after Mitigation: Significant and Unavoidable.

Mitigation Measure TR-1b: The individual project applicant(s) shall contribute fair-share funding towards the following improvement at the intersection of Middlefield Road and Glenwood Avenue/Linden Avenue:

- Signalization when investigation of the full set of traffic signal warrants indicate that signalization is warranted.

Signalizing the intersection of Middlefield Road and Glenwood Avenue improves the level of service to LOS B and LOS C during the a.m. and p.m. peak hour, respectively under Existing Plus Project conditions. Therefore, the impact would be reduced to a less-than-significant level.

The recently-completed signal at Middlefield Road and Encinal Avenue is projected to shift some traffic that would otherwise use the Middlefield Road and Glenwood Avenue/ Linden Avenue intersection. That signal should also create gaps in the traffic stream that would allow side street traffic to more easily turn onto or cross Middlefield Road. However, although the degree of impact would be reduced, the traffic shifts and additional gaps of the Middlefield Road and Encinal Avenue intersection are not projected to fully mitigate the impact at the Middlefield Road and Glenwood Avenue/Linden Avenue intersection because the intersection would still operate at an unacceptable level of service. Therefore, the additional mitigation measure of a signal at Middlefield Road and Glenwood Avenue/Linden Avenue would still be needed. This improvement is not in the City's TIF. Therefore, the City could consider adding it to the TIF. Without a funding mechanism, this impact is considered to be significant and unavoidable. In addition, the intersection is under the City of Atherton's jurisdiction, therefore the City cannot guarantee its implementation and the impact remains significant and unavoidable.

Significance after Mitigation: Significant and Unavoidable.

Mitigation Measure TR-1c: The individual project applicant(s) shall contribute fair-share funding towards the following improvements at the intersection of Middlefield Road and Willow Road, as identified in the City's TIF program:

- Adding a second westbound left-turn lane;
- Modifying the westbound approach to two left-turn lanes, one through lane, and one right-turn lane; and
- Changing the signal phasing on the eastbound and westbound approaches from split phasing (each approach has a separate green phase) to protected left-turn phasing (with left-turn arrows).

These improvements are identified in the City's TIF program and would reduce the average intersection delay to an acceptable level. However, the improvements may not be feasible due to ROW acquisition needs (constrained by the presence of buildings). Therefore, the impact is considered to be significant and unavoidable.

Significance after Mitigation: Significant and Unavoidable.

Mitigation Measure TR-1d: The individual project applicant(s) shall contribute fair-share funding towards the following improvements at the intersection of Orange Avenue/Santa Cruz Avenue and Avy Avenue/Santa Cruz Avenue:

- Signalization when investigation of the full set of traffic signal warrants indicate that signalization is warranted.

Signalizing the intersection of Orange Avenue/Santa Cruz Avenue and Avy Avenue/Santa Cruz Avenue would improve the level of service to LOS C during both the a.m. and p.m. peak hours under Existing Plus Project conditions. Therefore, the impact would be less than significant level, if the City can guarantee its implementation.

This improvement is not in the City's TIF. Therefore, the City could consider adding it to the TIF. Without a funding mechanism, this impact is considered to be significant and unavoidable.

Significance after Mitigation: Significant and Unavoidable

Roadway Segment Operations

Impact TR-2: Traffic from future development in the Plan area would adversely affect operation of local roadway segments. (Significant)

The roadway segments listed below (with controlling jurisdiction[s]) were selected for analysis of potential project and cumulative impacts: The existing volumes used in the analysis are presented in the transportation impact analysis (**Appendix E**) of the EIR.

1. Encinal Avenue from El Camino Real to Laurel Street (Menlo Park)
2. Encinal Avenue from Laurel Street to Middlefield Road (Atherton/Menlo Park)
3. Valparaiso Avenue from Delfino Way to San Mateo Drive (Atherton/ Menlo Park)
4. Glenwood Avenue from El Camino Real to Laurel Street (Menlo Park)
5. Oak Grove Avenue from Middlefield Road to Laurel Street (Atherton /Menlo Park)
6. Oak Grove Avenue from Laurel Street to El Camino Real (Menlo Park)
7. Oak Grove Avenue from El Camino Real to Crane Street (Menlo Park)
8. Oak Grove Avenue from University Drive (North) to Crane Street (Menlo Park)
9. Santa Cruz Avenue from El Camino Real to Crane Street (Menlo Park)
10. Santa Cruz Avenue from University Drive (South) to Crane Street (Menlo Park)
11. Santa Cruz Avenue from Olive Street to University Drive (South) (Menlo Park)
12. Santa Cruz Avenue from Olive Street to Orange Avenue/Avy Avenue (Menlo Park)
13. Santa Cruz Avenue from Orange Ave./Avy Ave. to Alameda de las Pulgas (Menlo Park)
14. Menlo Avenue from Crane Street to El Camino Real (Menlo Park)
15. Menlo Avenue from University Drive (South) to Crane Street (Menlo Park)
16. Ravenswood Avenue from Middlefield Road to Laurel Street (Atherton/Menlo Park)
17. Ravenswood Avenue from Laurel Street to Alma Street (Menlo Park)
18. Ravenswood Avenue from Alma Street to El Camino Real (Menlo Park)
19. Middle Avenue from El Camino Real to University Drive (South) (Menlo Park)
20. Middle Avenue from University Drive (South) to Olive Street (Menlo Park)
21. Oak Avenue from Sand Hill Road to Olive Street (Menlo Park)
22. Willow Road from Laurel Street to Middlefield Road (Menlo Park)
23. Olive Street from Oak Avenue to Middle Avenue (Menlo Park)
24. University Drive (North) from Oak Grove Avenue to Santa Cruz Avenue (Menlo Park)
25. University Drive (South) from Santa Cruz Avenue to Menlo Avenue (Menlo Park)
26. University Drive (South) from Menlo Avenue to Middle Avenue (Menlo Park)
27. Laurel Street from Ravenswood Avenue to Willow Road (Menlo Park)
28. Middlefield Road from Ringwood Avenue to Willow Road (Menlo Park)
29. Waverley Street from Laurel Street to Linfield Drive (Menlo Park)
30. Linfield Drive from Waverley Street to Middlefield Road (Menlo Park)

Estimates of the amount of daily traffic generated by the Specific Plan land uses were added to the existing roadway segment daily volumes. The results are presented in **Table 4.13-9**. The City of Menlo Park's roadway segment significance criteria was used to identify potentially significant impacts.[33] The results indicate that the Specific Plan would result in significant traffic impacts at the following roadway segments under Existing Plus Project Conditions:

[33] Analysis of a proposed project's impact on Menlo Park roadway segments is based on project-generated changes to average daily traffic volumes, not on changes to LOS conditions (see Significance Criteria for Street Segments in the technical appendices of the transportation impact analysis [**Appendix E**]).

TABLE 4.13-9
EXISTING PLUS PROJECT ROADWAY LEVELS OF SERVICE

Roadway Segment	Classification	Existing ADT	Added Daily Volume	Existing Plus Project ADT	Impact?
1. Encinal Avenue - Laurel to Middlefield (At/MP)	Collector	3,359	80	3,439	No
2. Encinal Avenue - El Camino to Laurel (MP)	Collector	4,540	86	4,626	No
3. Valparaiso Avenue - Delfino Way to El Camino (At/MP)	Minor Arterial	10,208	488	10,696	No
4. Glenwood Avenue - El Camino to Laurel (MP)	Collector	5,766	130	5,896	No
5. Oak Grove Avenue - Middlefield to Laurel (At/MP)	Collector	8,650	***847***	***9,497***	***Yes***
6. Oak Grove Avenue - Laurel to El Camino (MP)	Collector	9,590	***861***	***10,451***	***Yes***
7. Oak Grove Avenue - El Camino to Crane (MP)	Collector	8,367	***699***	***9,066***	***Yes***
8. Oak Grove Avenue - Crane to University (MP)	Collector	5,842	699	6,541	No
9. Santa Cruz Avenue - El Camino to Crane (MP)	Minor Arterial	7,351	1,134	8,485	No
10. Santa Cruz Avenue - Crane to University (MP)	Minor Arterial	8,603	1,134	9,737	No
11. Santa Cruz Avenue - University to Olive (MP)	Minor Arterial	15,445	1,694	17,139	No
12. Santa Cruz Avenue - Olive to Avy/Orange (MP)	Minor Arterial	15,135	1,694	16,829	No
13. Santa Cruz Avenue - Avy/Orange to Alameda de las Pulgas (MP)	Minor Arterial	10,522	***1,451***	***11,973***	***Yes***
14. Menlo Avenue - El Camino to Crane (MP)	Collector	8,675	***787***	***9,462***	***Yes***
15. Menlo Avenue - Crane to University (MP)	Collector	6,881	202	7,083	No
16. Ravenswood Avenue - Middlefield to Laurel (At/MP)	Minor Arterial	16,833	***1,348***	***18,181***	***Yes***
17. Ravenswood Avenue - Laurel to Alma (MP)	Minor Arterial	18,250	***1,822***	***20,072***	***Yes***
18. Ravenswood Avenue - Alma to El Camino (MP)	Minor Arterial	22,345	***1,822***	***24,167***	***Yes***
19. Middle Avenue - El Camino to University (MP)	Collector	8,608	222	8,830	No
20. Middle Avenue - University to Olive (MP)	Collector	6,622	52	6,674	No
21. Oak Avenue - Sand Hill Road to Olive Street (MP)	Local	2,549	17	2,566	No
22. Willow Road - Laurel to Middlefield (MP)	Collector	4,963	32	4,995	No
23. Olive Street - Oak to Middle (MP)	Local	2,641	16	2,657	No
24. University Drive - Oak Grove to Santa Cruz (MP)	Collector	6,658	774	7,432	No
25. University Drive - Santa Cruz to Menlo (MP)	Collector	8,117	613	8,730	No
26. University Drive - Menlo to Middle (MP)	Collector	5,038	438	5,476	No
27. Laurel Street - Ravenswood to Willow (MP)	Collector	5,313	32	5,345	No
28. Middlefield Road - Ringwood to Willow (MP)	Minor Arterial	20,027	***1,822***	***21,849***	***Yes***
29. Waverley Street - Laurel to Linfield (MP)	Local	1,478	4	1,482	No
30. Linfield Drive - Waverley to Middlefield (MP)	Local	1,583	4	1,587	No

NOTES:
Potentially significant impacts are indicated in ***bold and Italic*** type
Jurisdictions: Ct - Caltrans, At - Atherton, MP - Menlo Park, PA - Palo Alto

SOURCE: Fehr & Peers, 2010.

5. Oak Grove Avenue - Middlefield Road to Laurel Street
6. Oak Grove Avenue - Laurel Street to El Camino Real
7. Oak Grove Avenue - El Camino Real to Crane Street
13. Santa Cruz Avenue - Avy/Orange to Alameda de las Pulgas
14. Menlo Avenue - El Camino to Crane
16. Ravenswood Avenue - Middlefield Road to Laurel Street
17. Ravenswood Avenue - Laurel Street to Alma Street
18. Ravenswood Avenue - Alma Street to El Camino Real
28. Middlefield Road - Ringwood Avenue to Willow Road

Mitigations for roadway segment impacts would require adding travel lanes and widening roadways throughout Menlo Park. As the City is built out, there is little opportunity to widen roadways within the available right-of-way. Therefore any widening would require property acquisition. Due to the number of affected properties and financial implications, roadway segment impacts are significant and unavoidable. Implementation of **Mitigation Measure TR-2** would help reduce traffic volumes and therefore minimize the impacts from the Specific Plan.

> **Mitigation Measure TR-2:** New developments within the Specific Plan area, regardless of the amount of new traffic they would generate, are required to have in-place a City-approved Transportation Demand Management (TDM) program prior to project occupancy to mitigate impacts on roadway segments and intersections. TDM programs could include the following measures for site users (taken from the C/CAG CMP), as applicable:
>
> - Commute alternative information;
> - Bicycle storage facilities;
> - Showers and changing rooms;
> - Pedestrian and bicycle subsidies;
> - Operating dedicated shuttle service (or buying into a shuttle consortium);
> - Subsidizing transit tickets;
> - Preferential parking for carpoolers;
> - Provide child care services and convenience shopping within new developments;
> - Van pool programs;
> - Guaranteed ride home program for those who use alternative modes;
> - Parking cashout programs and discounts for persons who carpool, vanpool, bicycle or use public transit;
> - Imposing charges for parking rather than providing free parking;
> - Providing shuttles for customers and visitors; and/or
> - Car share programs.

However, because the effectiveness of a TDM program cannot be guaranteed, the impact to roadway segments is considered to be significant and unavoidable.

> **Significance after Mitigation:** Significant and Unavoidable.

Freeway Segment Operations

Impact TR-3: Traffic from future development in the Plan area would increase traffic volumes on local freeway segments. (Less than Significant)

Freeway operations were evaluated using the 2000 HCM volume-to-capacity ratio method, per C/CAG guidelines. In this method, the peak hour volume on a segment is compared to the segment's vehicle carrying capacity and a volume-to-capacity ratio, or V/C, is calculated. The level of service descriptions and the maximum volume-to-capacity (V/C) ratio for each LOS designation are presented in **Table 4.13-10**.

TABLE 4.13-10
LEVEL OF SERVICE CRITERIA FOR FREEWAY SEGMENTS

Level of Service[a]	Description	Volume-to-Capacity Ratio
A	Free flow operations with average operating speeds at, or above, the speed limit. Vehicles are unimpeded in their ability to maneuver.	0.30
B	Free flow operations with average operating speeds at the speed limit. Ability to maneuver is slightly restricted. Minor incidents cause some local deterioration in operations.	0.50
C	Stable operations with average operating speeds near the speed limit. Freedom to maneuver is noticeably restricted. Minor incidents cause substantial local deterioration in service.	0.71
D	Speeds begin to decline slightly with increasing flows. Freedom to maneuver is more noticeably restricted. Minor incidents create queuing.	0.89
E	Operations at capacity. Vehicle spacing causes little room to maneuver but speeds exceed 50 mph. Any disruption to the traffic stream can cause a wave of delay that propagates throughout the upstream traffic flow. Minor incidents cause serious breakdown of service with extensive queuing. Maneuverability is extremely limited.	1.00
F	Operations with breakdowns in vehicle flow. Volumes exceed capacity causing bottlenecks and queue formation.	N/A

[a] Freeway mainline LOS based on a 65 mph free-flow speed.

SOURCE: *Highway Capacity Manual – Special Report 209* (Transportation Research Board, 2000).

For Congestion Management Program (CMP) facilities, the significance test is whether the addition of project traffic causes a segment to exceed its LOS threshold or if it adds an amount of traffic greater than one percent of the segment's capacity. The CMP LOS threshold on U.S. Route 101 is LOS F. According to the 2009 CMP Monitoring Report, it is operating at LOS F based on average speeds. The capacities of the analysis segments and the amount of added project traffic are shown in **Table 4.13-11**. The amount of project traffic is less than one percent of the capacity. Therefore, the project would have no impact on U.S. Route 101 according to the significance criteria used in this analysis.[34]

[34] The CMP LOS standard on U.S. Route 101 is LOS F and according to the 2009 CMP Monitoring Report, it is operating at LOS F based on average speeds. Therefore, it will operate at LOS F under Existing plus Project conditions (and under Cumulative and Cumulative plus Project conditions when the demand is projected to be higher). When freeway segments operate at congested LOS F conditions, the traffic is moving slowly and the counted volume is very low. A low volume in the V/C analysis would reflect a low V/C which would correlate to a better LOS. As such a V/C analysis was not appropriate for U.S. Route 101.

TABLE 4.13-11
EXISTING PLUS PROJECT FREEWAY LEVELS OF SERVICE

Segment	Direction	Peak Hour	Ex. Volume[a]	Capacity[b]	Ex. V/C[c]	Ex. LOS[4]	Project Volume	% of Capacity	E+P Volume[a]	E+P V/C[c]	E+P LOS[d]	LOS Threshold
U.S. Route 101, North of Marsh Road (mixed-flow lanes)	NB	AM	-	8,340	-	D	17	0.20%	-	-	D	F
		PM	-	7,780	-	**F**	30	0.39%	-	-	**F**	
	SB	AM	-	7,740	-	**F**	31	0.40%	-	-	**F**	
		PM	-	8,110	-	**F**	26	0.32%	-	-	**F**	
U.S. Route 101, South of Willow Road (mixed-flow lanes)	NB	AM	-	6,470	-	D	38	0.59%	-	-	D	F
		PM	-	6,470	-	**F**	36	0.56%	-	-	**F**	
	SB	AM	-	6,470	-	**F**	29	0.45%	-	-	**F**	
		PM	-	6,470	-	**F**	43	0.66%	-	-	**F**	
I-280, North of Sand Hill Road	NB	AM	4,814	9,000	0.53	C	23	0.26%	4,837	0.54	C	D
		PM	7,699	9,000	0.86	D	56	0.62%	7,755	0.86	D	
	SB	AM	8,201	9,000	**0.91**	**E**	47	0.52%	**8,248**	**0.92**	**E**	
		PM	5,092	9,000	0.57	C	38	0.42%	5,130	0.57	C	
I-280, South of Alpine Road	NB	AM	4,862	9,000	0.54	C	60	0.67%	4,922	0.55	C	D
		PM	7,774	9,000	0.86	D	42	0.47%	7,816	0.87	D	
	SB	AM	8,281	9,000	**0.92**	**E**	32	0.36%	**8,313**	**0.92**	**E**	
		PM	5,142	9,000	0.57	C	64	0.71%	5,206	0.58	C	

[a] Peak hour volumes obtained from Caltrans data
[b] Capacity based on number of lanes and per lane capacity of 2,300 vehicles per hour per lane (vphpl) for I-280 and 2,200 vphpl for U.S. Route 101, per the 2000 *Highway Capacity Manual - Special Report 209,*and the lower of adjacent ramp volumes for auxiliary lanes – all adjusted for trucks.
[c] Volume-to-Capacity ratio (V/C)
[d] LOS calculations performed using the 2000 *Highway Capacity Manual - Special Report 209* methods for freeway segments

Unacceptable operations are indicated in **bold** type. Significant impacts are shown in ***bold italics*** type.

SOURCE: Fehr & Peers, 2010.

The CMP LOS threshold on I-280 is LOS D. According to the 2009 CMP Monitoring Report (discussed on page 4.13-24), it is currently operating at LOS D (based on average speeds obtained from travel time surveys). For the impact analysis, a volume-to-capacity ratio analysis was conducted to determine whether the addition of project traffic would cause a segment to exceed the threshold. As presented in Table 4.13-11, based on volume-to-capacity calculations, portions of I-280 in the study area exceed the threshold and operate at LOS E. However, the amount of project traffic added to the LOS E segments would be less than one percent of the capacity. Therefore, the project would have no impact on I-280 according to the significance criteria used in this analysis.

Mitigation: None required.

Transit Operations

Impact TR-4: Transit ridership generated by future development in the Plan area would affect transit operations. (Less than Significant)

The number of added transit riders was estimated based on applying the transit mode share estimates for the land use program to the trip generation estimates. The daily ridership estimates are 330 riders on Caltrain and 80 bus riders. Both Caltrain and the buses have available capacity to accommodate these additional riders. All of the potential developments in the land use program are within ¼ mile of a transit stop (including the Caltrain station and bus stops). Many of the new riders would be able to walk or bike to the Caltrain station, therefore parking impacts would be less than significant. The Specific Plan would have a less-than-significant impact to transit.

Mitigation: None required.

Pedestrian and Bicycle

Impact TR-5: Future development in the Plan area would affect pedestrian and bicycle operations and safety. (Less than Significant)

Bicycle System

The Specific Plan provides new bicycle facilities (bike routes and bike lanes) and does not contain design aspects that would cause an increased potential for bicycle/vehicle conflicts. Specifically, the Specific Plan would not remove any existing bicycle facilities (paths, lanes, or routes), nor would it increase the number of street intersections or bicycle access points at which bicycle/vehicle conflicts might take place. Existing vehicle speed limits would remain in effect. New dedicated bicycle/pedestrian grade-separated crossings of the train tracks at Middle Avenue and the Caltrain station would provide new, direct bicycle routes that would reduce the travel distance between many east-west destinations. The Specific Plan will provide for new and enhanced bicycle facilities that will provide improved connectivity within the Plan area and outward to other neighborhoods that surround the Plan. The Future Class II bicycle lanes are not being approved as part of the

Specific Plan. Rather, the Plan indicates where these lanes are desirable and may be feasible, and so are appropriate for further study and environmental review.

Therefore the Specific Plan has less-than-significant bicycle impacts. The effects of new bicycle facilities on on-street parking are described on page 4.13-59.

Pedestrian System

The Specific Plan would enhance pedestrian facilities in the plan area with such amenities as wider sidewalks, marked crosswalks, and special pavement treatments. The potential parking structures located in downtown Menlo Park would have driveways that cross sidewalks. Individual project review currently requires analysis by the Transportation Division for compliance with relevant safety codes, in particular for sight distance triangles for vehicles exiting parking areas which might be partly obscured. This project-specific analysis would continue under the Specific Plan. Thus, future City review of applications for project developments within the Specific Plan area would specify design changes to parking structures, as needed, to ensure that vehicle drivers can see pedestrians as they exit (and vice versa), and that adequate pedestrian warning systems (such as signs/lights and/or audible warnings) would be provided. Therefore the Specific Plan has less-than-significant pedestrian impacts.

Mitigation: None required.

Parking

Impact TR-6: Development under the Plan area would affect parking supply in the downtown, but would not result in inadequate parking capacity. (Less than Significant)

The proposed downtown parking supply with the Specific Plan includes a net increase of spaces when balancing the loss of parking spaces needed to accommodate public space improvements, such as widened sidewalks and pocket parks, with new structured parking on up to two sites. Potential future development in the non-downtown areas within the Plan area will provide parking on-site according to the adopted code or rates in the Specific Plan or supported by a shared parking study approved by the City's Transportation Manager. Parking impacts in the non-downtown areas will be less than significant and no additional parking analyses for those areas were conducted.

The existing and future downtown parking supply is summarized in **Table 4.13-12**. It indicates the number of existing public parking spaces in each Parking Plaza and on each block face in the downtown core area (area bounded by Oak Grove Avenue, El Camino Real, Menlo Avenue, and University Drive). It also describes the types of changes that are proposed by the Specific Plan and the resulting change in number of spaces, and the resulting future supply. For Parking Plaza 1, the Specific Plan proposes a 5-level garage with 650 publicly accessible spaces. For Parking Plaza 2, the plan allows for a 5-level garage with 250 publicly accessible spaces (or 310 spaces without the proposed pocket park at Chestnut Street and Oak Grove Avenue). For Parking Plaza 3, the plan proposes a 5 level garage providing 650 publicly accessible spaces. The total future supply in the

TABLE 4.13-12
EXISTING AND FUTURE DOWNTOWN PUBLIC PARKING SUPPLY

Parking Location	Existing Supply[a]	Specific Plan Change	Change in Spaces	Future Supply
Parking Plazas				
Parking Plaza 1	249	Added Parking Garage[b]	+446	695c
Parking Plaza 2	95	Added Parking Garage and Pocket Park	+155	250
Parking Plaza 3	212	Added Parking Garage[c] and Pocket Park	+438[e]	650[e]
Parking Plaza 4	105	Pedestrian Link	-19	86
Parking Plaza 5	150	Pedestrian Link	-16	134
Parking Plaza 6	136	Pedestrian Link and Marketplace	-32	104
Parking Plaza 7	94	Pedestrian Link and Marketplace	-36	58
Parking Plaza 8	145	Pedestrian Link	-7	138
Total	1,186		**929**	**2,115**
On-Street Spaces				
Santa Cruz Avenue	116	Sidewalk Widening	-48	68
Chestnut Street North	26	Sidewalk Widening	-11	15
Chestnut Street South	17	Chestnut Paseo	-11	6
Oak Grove Avenue	80	Added Bike Lanes	-35	45
Other Streets	170	No Change	0	170
Total	409		-105	304
Downtown Core Area Total	**1,595**		**824**	**2,419**

NOTES:
[a] *2009-2010 Downtown Menlo Park Parking Study*, Wilbur Smith Associates.
[b] A new parking garage on Plaza 1 would displace 204 spaces.
[C] A new parking garage on Plaza 1 would displace 187 existing spaces.
[d] Future supply of 695 spaces on Plaza 1 includes both the parking structure with 650 publicly accessible spaces and a small surface parking lot on the same plaza with 45 spaces.
[e] The two numbers for "change in spaces" and "future supply" refers to the two options for a parking garage on Plaza 3.

SOURCE: Fehr & Peers, 2010

Downtown Core Area (including the loss of on-street spaces and the development of up to two parking garages) would be between 1,973 and 2,264 spaces.

The existing peak parking demand for public spaces in the downtown core measured by Wilbur Smith Associates for the 2009/2010 Downtown Menlo Park Parking Study is 1,260 spaces. The land use program envisions that up to approximately 68,000 square feet of retail space and 13,000 square feet of office space could be added to the downtown area. (The remaining retail and office uses would be located on El Camino Real.) The parking for this space would be provided either on-site or in public parking areas. All other uses added to the downtown (e.g., hotel and residential uses) would provide parking on-site and could only use up spaces in the public parking facilities if excess capacity were available based on a monitoring program.

The peak parking demand generated by potential new development in the downtown area is estimated to be 295 spaces, based on the Specific Plan parking rates that include parking for both employees and customers. The combined parking demand of the existing (1,260 spaces) and potential new development (295 spaces) is estimated to be 1,555 spaces. The proposed public parking supply of between 1,973 and 2,264 spaces is more than sufficient to accommodate the added parking demand generated by the downtown Specific Plan uses plus an increase in demand reflecting stronger economic times, as the existing demand surveys were done in Fall of 2009 with a slow economy.

The Specific Plan requires that the City set up a system to monitor parking supply and demand. Public parking plaza spaces can only be used for new downtown development if there is sufficient available parking (per the monitoring system). If a sufficient number of spaces is not available, then the amount of new development would be constrained.

Potential Neighborhood Parking Intrusion

The intensification of uses in the Plan area will generate new parking demand as described above. If adequate parking is not provided to accommodate the new uses, then parking spillover into the adjacent neighborhoods could occur. New development intending to use public parking spaces can only be approved if there is a sufficient number of available spaces per the above-referenced City monitoring system. Plus the Specific Plan contains a parking management plan to manage parking in the downtown. The management plan would further minimize the potential for neighborhood parking intrusion by responding to parking shortages with the construction of additional supply or through improved management practices.

Bicycle Parking

The Specific Plan contains standards for long-term and short-term bicycle parking facilities based on land use types, including in parking garages. Therefore, adequate bicycle parking would be provided.

Removal of On-Street Parking Spaces

Parking spaces will be removed on Oak Grove Avenue to accommodate bike lanes. Replacement parking for the spaces to the west of El Camino Real would be provided in the parking plazas, if there are available spaces based on periodic monitoring, or in the new parking garages. A survey was conducted to determine the number of vehicles parking in the spaces on Oak Grove Avenue, between El Camino Real and Laurel Street. During the survey, 33 parked vehicles were observed in approximately 45 spaces (not all spaces are marked). It was also observed that there were an equivalent number of available parking spaces on other nearby roadways such as Laurel Street, Mills Street, Derry Lane (proposed to be realigned into a Garwood Way extension but still with on-street parking), and El Camino Real (within approximately two-tenths of a mile) that could accommodate the displaced parking.

Implementation of the “Proposed Future Class II/Minimum Class III Bikeway” could also require removal of on-street parking. The proposed bicycle improvements would require detailed design work, including consideration of the trade-offs necessary to install Class II bicycle lanes, and

project-level environmental review at the time the City is prepared to move forward with installation of upgraded facilities.

The Specific Plan provides adequate parking for both vehicles and bicycles. Therefore, the Specific Plan's parking impact is less-than-significant.

Mitigation: None required.

4.13.4 Cumulative (2035) Conditions

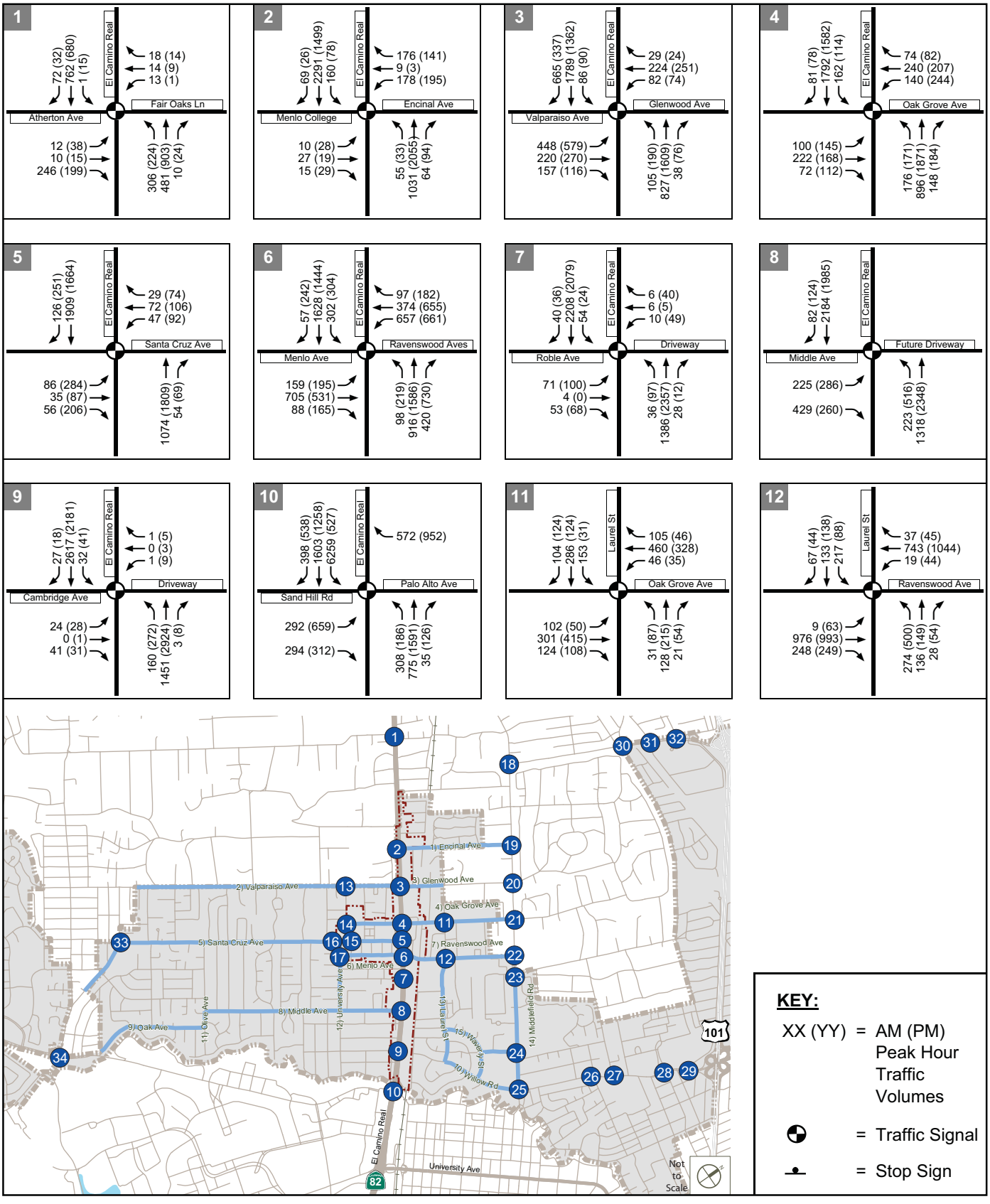
The Cumulative Conditions analysis presents the results of the level of service calculations in 2035 with and without the Specific Plan. Cumulative (2035) No Project Conditions were estimated by multiplying existing volumes by a 25 year growth factor and adding traffic from approved and pending developments in Menlo Park. The growth factor accounts for development projects outside of Menlo Park and general regional growth. Cumulative (2035) With Project Conditions include 2035 No Project Conditions plus traffic generated by the Specific Plan land uses. The procedure used to determine the Cumulative traffic volumes and the results of the LOS analysis for Cumulative (2035) No Project and Cumulative (2035) Plus Project Conditions is described below.

Cumulative Traffic Estimates

The EIR assumes a one percent background growth factor, projecting that all traffic volumes increase by one percent per year compounded over 25 years, or 28.24 percent to represent growth between 2010 and 2035. This projection of background traffic growth was based on the 2009 Regional Transportation Plan (RTP) prepared by the Metropolitan Transportation Commission.[35] The City has traffic assignments for approved and pending developments shown in Table 4-1 in its Traffix model. The growth rate plus these assignments were used to develop Cumulative No Project traffic volumes at the study intersections as shown on **Figures 4-12-8a** through **4.13-8c**.

Table 4.13-13 presents the LOS calculation results for the study intersections under Cumulative (2035) Conditions without and with the project. The LOS calculation sheets are contained in the technical appendices of the transportation impact analysis (**Appendix E**). The calculated intersection levels of service do not vary with the removal of the right-turn lanes. The right-turn lanes carried few vehicles in comparison to the through movements so adding those movements to the through lane (a restriped shared through/right lane) did not substantially increase the delay. However, as presented in Table 4.13-13, there are some changes in the approach delays for these intersections between conditions with and without the right-turn lanes.

35 *See* Metropolitan Transportation Commission, *Transportation 2035 Plan for the San Francisco Bay Area*. This document is available to the public at http://www.mtc.ca.gov/planning/2035_plan/ and at the Menlo Park Planning Department, 701 Laurel Street, Menlo Park, CA.



SOURCE: Fehr & Peers

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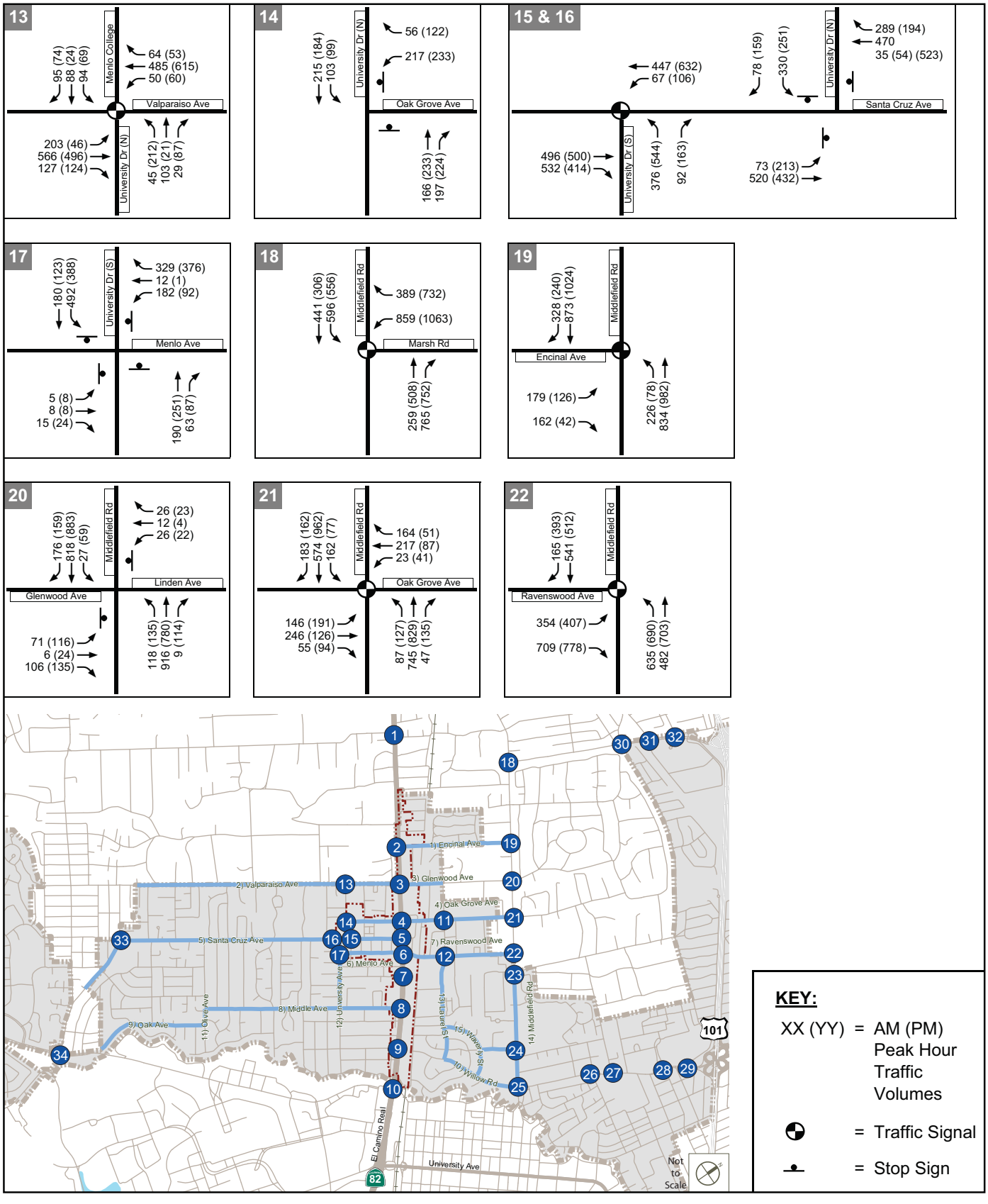
Figure 4.13-8a
Cumulative (No Project)
Traffic Control Devices and Intersection Volumes



SOURCE: Fehr & Peers

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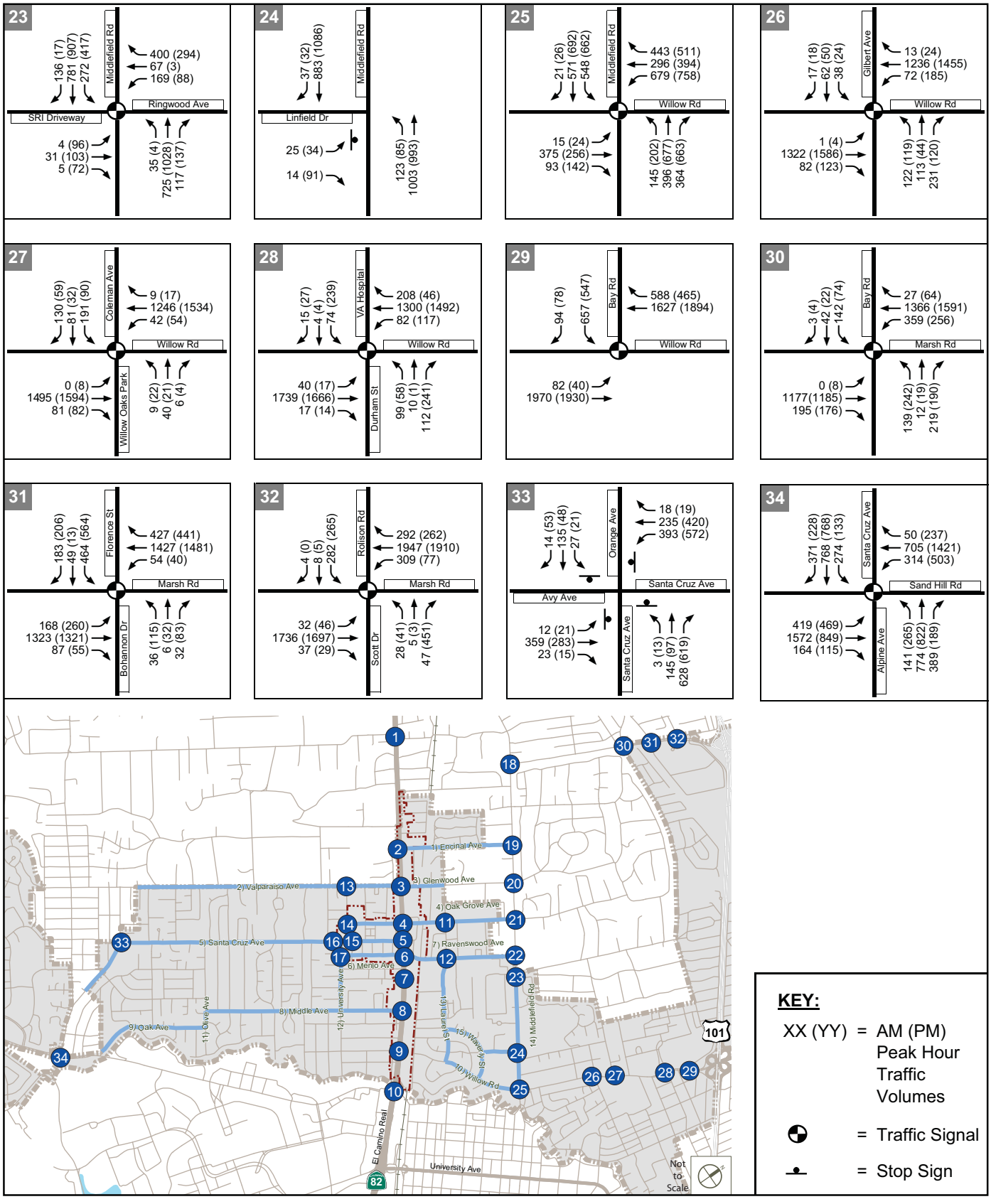
Figure 4.13-8b
Cumulative (No Project)
Traffic Control Devices and Intersection Volumes



SOURCE: Fehr & Peers

Menlo Park El Camino Real/Downtown Specific Plan EIR . 208581

Figure 4.13-8c
Cumulative (No Project)
Traffic Control Devices and Intersection Volumes

TABLE 4.13-13
CUMULATIVE INTERSECTION LEVELS OF SERVICE

Intersection	Traffic Control	Peak Hour	LOS Standard	Cumulative No Project Conditions			Cumulative Plus Project Conditions			
				Critical Delay[a]	Average Delay[b]	LOS[c]	Critical Delay[a]	Average Delay[b]	LOS[c]	Δ in Delay[d]
#1 El Camino Real & Atherton Avenue/ Fair Oaks Lane (Ct/At)	Signal	AM PM	D	43.7 41.8	40.0 35.3	D D	43.5 41.4	39.5 34.7	D C	-0.5 -0.6
Eastbound Approach		AM PM		42.8 39.1	44.3 39.1	D D	45.0 40.0	45.0 40.0	D D	0.7 0.9
Westbound Approach		AM PM		**65.2** **64.5**	**64.8** **64.4**	**E** **E**	**65.2** **64.5**	**64.8** **64.4**	**E** **E**	**0.0** **0.0**
#2 El Camino Real & Encinal Avenue (Ct/At/MP)	Signal	AM PM	D	22.5 24.1	23.6 20.3	C C	24.0 25.7	24.6 21.3	C C	1.0 1.0
Eastbound Approach		AM PM		- -	50.2 47.6	D D	- -	50.6 48.4	D D	0.4 0.8
Westbound Approach		AM PM		**84.0** **73.6**	**72.2** **64.4**	**E** **E**	**88.4** **78.5**	**75.5** **67.5**	**E** **E**	**3.3** **3.1**
#3 El Camino Real & Glenwood Avenue/ Valparaiso Avenue (Ct/At/MP)	Signal	AM PM	D	53.3 **56.7**	44.3 52.4	D D	**57.7** ***65.6***	46.9 ***56.8***	D ***E***	2.6 ***4.4***
Eastbound Approach		AM PM		**72.5** **65.9**	**68.7** **63.2**	**E** **E**	**77.9** ***70.2***	**73.1** ***66.8***	**E** ***E***	**4.5** ***4.3***[e]
Westbound Approach		AM PM		**93.0** **90.8**	**83.8** **82.9**	**F** **F**	**99.1** ***96.5***	**88.3** ***87.1***	**F** ***F***	**4.5** ***5.7***[e]
#4 El Camino Real & Oak Grove Avenue (Ct/MP) w/RT lanes	Signal	AM PM	D	38.6 38.4	37.6 37.4	D D	44.0 45.9	42.3 44.7	D D	4.7 7.3
Eastbound Approach		AM PM		**79.0** **90.3**	**77.8** **79.6**	**E** **E**	**85.4** **94.8**	**86.5** **83.5**	**F** **F**	**8.7** **3.9**
Westbound Approach		AM PM		**91.6** **78.7**	**73.5** **70.4**	**E** **E**	**102.9** **90.5**	**83.6** **76.4**	**F** **E**	**10.1** **6.0**
Without northbound and southbound right-turn lane	Signal	AM PM	D	N/A	N/A	N/A	46.5 53.7	45.2 51.1	D D	7.6 13.7
Eastbound Approach		AM PM					**92.6** **112.0**	**92.9** **95.2**	**F** **F**	**15.1** **15.6**
Westbound Approach		AM PM					**111.4** **107.5**	**90.1** **87.3**	**F** **F**	**16.7** **16.9**
#5 El Camino Real & Santa Cruz Avenue (Ct/MP) w/RT lanes	Signal	AM PM	D	12.3 31.5	11.3 27.6	B C	14.7 34.9	13.0 30.0	B C	1.7 2.4
Eastbound Approach		AM PM		**77.7** **67.0**	**72.0** **61.0**	**E** **E**	**77.8** **72.6**	**71.3** **64.4**	**E** **E**	**-0.7** **3.4**
Westbound Approach		AM PM		**74.7** **79.0**	**71.1** **72.3**	**E** **E**	**77.6** **85.8**	**73.2** **77.0**	**E** **E**	**2.0** **4.8**
Without southbound right-turn lane	Signal	AM PM	D	N/A	N/A	N/A	15.2 37.5	13.7 32.8	B C	2.4 5.2
Eastbound Approach		AM PM					**84.4** **80.5**	**75.3** **69.6**	**E** **E**	**3.4** **8.7**
Westbound Approach		AM PM					**84.1** **95.0**	**78.0** **83.5**	**E** **F**	**6.9** **11.2**

TABLE 4.13-13 (Continued)
CUMULATIVE INTERSECTION LEVELS OF SERVICE

Intersection	Traffic Control	Peak Hour	LOS Standard	Cumulative No Project Conditions			Cumulative Plus Project Conditions			
				Critical Delay[a]	Average Delay[b]	LOS[c]	Critical Delay[a]	Average Delay[b]	LOS[c]	Δ in Delay[d]
#6 El Camino Real & Menlo Avenue/ Ravenswood Avenues (Ct/MP) w/ RT lanes	Signal	AM PM	D	**82.2** **>150**	**74.7** **141.7**	**E** **F**	***101.2*** ***>150***	***87.8*** ***>150***	***F*** ***F***	***13.1*** ***15.6***
Eastbound Approach		AM PM		**87.5** **>150**	**87.5** **>150**	**F** **F**	***106.9*** ***>150***	***107.0*** ***>150***	***F*** ***F***	***19.4***[e] ***35.8***[e]
Westbound Approach		AM PM		**110.0** **>150**	**90.8** **112.0**	**F** **F**	***114.4*** ***>150***	***104.0*** ***128.7***	***F*** ***F***	***4.4***[e] ***37.0***[e]
Without southbound right-turn lane	Signal	AM PM	D	N/A	N/A	N/A	***108.2*** ***>150***	***92.7*** ***>150***	***F*** ***F***	***18.0*** ***35.9***
Eastbound Approach		AM PM					***114.8*** ***>150***	***114.9*** ***>150***	***F*** ***F***	***27.3***[e] ***35.8***[e]
Westbound Approach		AM PM					***122.1*** ***>150***	***110.4*** ***128.7***	***F*** ***F***	***12.1***[e] ***37.0***[e]
#7 El Camino Real & Roble Avenue (Ct/MP)	Signal	AM PM	D	12.5 22.2	12.4 19.2	B B	13.4 32.2	13.1 24.9	B C	0.7 5.7
Eastbound Approach		AM PM		**62.0** **95.5**	**62.0** **95.5**	**E** **F**	**65.3** **116.4**	**65.3** **116.4**	**E** **F**	**3.3** **20.9**
Westbound Approach		AM PM		- -	53.0 **56.0**	D **E**	- -	53.7 **56.1**	D **E**	0.7 **0.1**
#8 El Camino Real & Middle Avenue (Ct/MP)	Signal	AM PM	D	47.9 56.0	37.4 37.5	D D	67.6 ***106.1***	53.7 ***69.0***	D ***E***	16.3 ***31.5***
Eastbound Approach		AM PM		**70.0** **97.0**	**60.2** **94.0**	**E** **F**	**96.6** ***147.2***	**82.3** ***129.1***	**F** ***F***	**22.1** ***50.2***[e]
Westbound Approach		AM PM		N/A	N/A	N/A	***68.0*** ***73.2***	***63.7*** ***99.6***	***E*** ***F***	***63.7*** ***99.6***
#9 El Camino Real & Cambridge Avenue (Ct/MP)	Signal	AM PM	D	16.5 8.5	13.0 14.8	B B	16.7 14.2	16.0 18.7	B B	3.0 3.9
Eastbound Approach		AM PM		**71.7** **-**	**71.7** **70.0**	**E** **E**	**76.1** -	**76.1** **76.8**	**E** **E**	**4.4** **6.8**
Westbound Approach		AM PM		- **63.1**	**62.1** **63.1**	**E** **E**	- **81.5**	**68** **81.5**	**E** **F**	**5.9** **18.4**
#10 El Camino Real & Sand Hill Road (Ct/PA)	Signal	AM PM	E	27.9 49.5	29.7 39.2	C D	31.0 53.8	32.2 41.8	C D	2.5 2.6
#11 Laurel Street & Oak Grove Avenue (MP)	Signal	AM PM	C	19.9 14.1	18.5 13.3	B B	20.7 14.5	19.1 13.5	B B	0.6 0.2
#12 Laurel Street & Ravenswood Avenue (MP)	Signal	AM PM	D	**72.1** **78.8**	47.1 52.4	D D	**81.2** ***93.0***	52.0 ***61.1***	D ***E***	4.9 ***8.7***
#13 University Drive (N) & Valparaiso Avenue (MP/At)	Signal	AM PM	D	15.2 18.4	14.2 17.5	B B	12.2 19.0	14.4 18.1	B B	0.2 0.6
#14 University Drive (N) & Oak Grove Avenue (MP)	All-way Stop	AM PM	C	12.3 15.1	12.3 15.1	B C	12.9 17.2	12.9 17.2	B C	0.6 2.1

TABLE 4.13-13 (Continued)
CUMULATIVE INTERSECTION LEVELS OF SERVICE

Intersection	Traffic Control	Peak Hour	LOS Standard	Cumulative No Project Conditions			Cumulative Plus Project Conditions			
				Critical Delay[a]	Average Delay[b]	LOS[c]	Critical Delay[a]	Average Delay[b]	LOS[c]	Δ in Delay[d]
#15 University Drive (N) & Santa Cruz Avenue (MP)	All-way Stop	AM PM	D	**109.7** 54.7	**109.7** **102.9**	**F** **F**	***128.5*** 35.2	***128.5*** **118.4**	***F*** **F**	***18.8***[e] -19.5[e]
#16 University Drive (S) & Santa Cruz Avenue (MP)	Signal	AM PM	D	18.0 16.7	13.7 18.4	B B	18.4 22.7	14.2 19.4	B B	0.5 1.0
#17 University Drive (S) & Menlo Avenue (MP)	All-way Stop	AM PM	C	29.9 21.3	29.9 21.3	D C	29.1 23.1	29.1 23.1	D C	-0.8[e] 1.8
#18 Middlefield Road & Marsh Road (At)	Signal	AM PM	D	**82.4** **>150**	51.3 **101.7**	D **F**	**87.7** ***>150***	54.3 ***105***	D ***F***	3.0 ***6.3***[e]
#19 Middlefield Road & Encinal Avenue (At)	Signal	AM PM	D	**84.0** 30.1	**59.6** 20.2	**E** C	***91.8*** 33.5	***65.0*** 22.3	***E*** C	***7.9***[e] 3.3[e]
#20 Middlefield Road & Glenwood Avenue/ Linden Avenue (At)	Side Street Stop	AM PM	D	**>150** **>150**	**>150** **>150**	**F** **F**	***>150*** ***>150***	***>150*** ***>150***	***F*** ***F***	***>150***[e] ***>150***[e]
#21 Middlefield Road & Oak Grove Avenue (At)	Signal	AM PM	D	38.7 **77.3**	16.8 18.8	B B	62.6 **115.1**	20.4 25.5	C C	3.6 6.7
#22 Middlefield Road & Ravenswood Avenue (MP/At)	Signal	AM PM	D	71.7 **135.2**	**56.8** **101.4**	**E** **F**	***89.7*** ***>150***	***70.3*** ***124.2***	***E*** ***F***	***18.0***[e] ***30.2***[e]
#23 Middlefield Road & Ringwood Avenue (MP/At)	Signal	AM PM	D	35.9 37.6	29.4 29.3	C C	36.1 38.0	29.2 29.0	C C	-0.2 -0.3
#24 Middlefield Road & Linfield Drive (MP)	Side Street Stop	AM PM	D	1.3 2.0	**37.8** 30.1	**E** D	***1.4*** ***2.4***	***46.6*** ***41.3***	***E*** ***E***	***8.8*** ***11.2***
#25 Middlefield Road & Willow Road (MP)	Signal	AM PM	D	**83.4** **>150**	**72.4** **>150**	**E** **F**	***107.9*** ***>150***	***83.5*** ***>150***	***F*** ***F***	***24.5***[e] ***32.0***[e]
#26 Gilbert Avenue & Willow Road (MP)	Signal	AM PM	D	**58.7** **>150**	43.8 **100.8**	D **F**	**68.8** **100.6**	53.2 **68.9**	D **E**	9.4 - >150[e]
#27 Coleman Avenue & Willow Road (MP)	Signal	AM PM	D	**125.3** **72.8**	**86.1** **55.3**	**F** **E**	***136*** ***94.9***	***97.8*** ***71.1***	***F*** ***E***	***10.7***[e] ***22.1***[e]
#28 Durham Street & Willow Road (MP)	Signal	AM PM	D	**55.1** **>150**	33.1 **93.2**	C **F**	69.4 ***>150***	42 ***101.4***	D ***F***	8.9 ***17.5***[e]
#29 Bay Road & Willow Road (Ct/MP)	Signal	AM PM	D	**62.1** **55.8**	49.9 40.5	D D	***66.8*** **61.8**	***55.3*** 46.1	***E*** D	***5.4*** 5.6
#30 Bay Road & Marsh Road (MP)	Signal	AM PM	D	36.1 48.6	25.1 32.8	C C	36.5 51.4	25.3 34.3	C C	0.2 1.5
#31 Florence Street/ Bohannon Drive & Marsh Road (MP)	Signal	AM PM	D	25.9 50	21.0 38.8	C D	26.5 52.0	21.4 40.0	C D	0.4 1.2
#32 Scott Drive & Marsh Road (MP)	Signal	AM PM	D	27.4 **59.5**	21.9 41.7	C D	28.9 **62.1**	22.7 43.1	C D	0.8 1.4
#33 Orange Avenue/ Santa Cruz Avenue & Avy Avenue/Santa Cruz Avenue (MP)	All-way Stop	AM PM	D	**82.9** **103.3**	**82.9** **103.3**	**F** **F**	***103.5*** ***147.9***	***103.5*** ***147.9***	***F*** ***F***	***20.6***[e] ***44.6***[e]

TABLE 4.13-13 (Continued)
CUMULATIVE INTERSECTION LEVELS OF SERVICE

Intersection	Traffic Control	Peak Hour	LOS Standard	Cumulative No Project Conditions			Cumulative Plus Project Conditions			
				Critical Delay[a]	Average Delay[b]	LOS[c]	Critical Delay[a]	Average Delay[b]	LOS[c]	Δ in Delay[d]
#34 Santa Cruz Avenue/ Alpine Avenue & Sand Hill Road (MP)	Signal	AM PM	D	53.9 **56.2**	50.6 51.9	D D	**63.7** **59.0**	54.3 54.0	D D	3.7 2.1

[a] Average control delay (expressed in seconds per vehicle) for the critical movements only.
[b] Whole intersection weighted average control delay for signalized and all-way stop-controlled intersections (expressed in seconds per vehicle). For side-street stop controlled intersections, delays for worst approach are shown.
[c] LOS calculations performed using the methodology outlines in the 2000 *Highway Capacity Manual – Special Report 209*.
[d] Change in average delay between Cumulative and Cumulative Plus Project Conditions (unless otherwise noted).
[e] Average Critical Delay Change

Jurisdictions: Ct - Caltrans, At - Atherton, MP - Menlo Park, PA - Palo Alto

* Denotes Caltrans intersection. Unacceptable operations are indicated in **bold** type, and significant impacts are indicated in ***bold & Italic*** type

SOURCE: Fehr & Peers, 2010.

The process used to develop Cumulative No Project intersection volumes was used to develop roadway segment volumes. Annual growth rates on the freeways were developed by comparing 2030 and 2005 projections for the C/CAG model.[36] Growth for 25 years was added to the existing volumes, traffic from Menlo Park approved and pending developments was added. The Cumulative Plus Project volumes for the freeway segments were estimated in a similar way.

The resulting estimates represent the increased traffic demand. When the roadway system reaches capacity, it cannot accommodate new trips. Congestion occurs, causing some people to alter their travel behavior by traveling at less congested times of the day (for discretionary trips) or by linking trips. It also causes a spreading or lengthening of the peak periods of traffic flow. The peak-hour intersection, and road and freeway segment estimates used for the analysis of impacts presented below are conservative because they do not include adjustments to account for these travel behavior changes.

Cumulative (2035) Transportation Improvements

The City of Menlo Park has no planned and fully funded improvements for their roadway system[37]. Therefore, existing intersection lane configurations were used in the intersection and roadway segment analysis. Freeway improvements included under Cumulative Conditions include auxiliary lanes on U.S. Route 101 from Marsh Road to the Santa Clara County border and

[36] *See* City/County Association of Governments, *Congestion Management Program 2009* This document is available to the public at http://www.ccag.ca.gov/pdf/tac/2009/FINAL_SMC_2009_CMP.pdf and at the Menlo Park Planning Department, 701 Laurel Street, Menlo Park, CA.

[37] The City has a transportation impact fee (TIF) to pay for selected improvements, as presented in *City of Menlo Park Transportation Impact Fee Study*, September 9, 2009, TJKM Consultants. Because sufficient fees were not collected to fund improvements when this study was conducted, no improvements were included in the baseline condition. The TIF improvements were considered during the mitigation measure identification stage of the study.

modifications to the U.S. Route 101/Willow Road interchange.[38] These improvements are included in the analysis.

High Speed Rail

The California High Speed Rail (HSR) project is proposed to link San Francisco and Los Angeles via high speed trains. Major cities served would include San Francisco, San José, Fresno, Bakersfield, Los Angeles, and Anaheim. Future expansion of the rail project would further link additional areas of the state including Sacramento, Stockton, Modesto, San Diego, Riverside, and Ontario to the system. For the overall system, high speed rail service would be provided between about 5:00 a.m. and midnight daily and is projected to serve approximately 13.5 million riders annually by 2020 and 41 million riders annually by 2035. This project is currently in the conceptual design and environmental clearance stage. Although the high speed rail system would pass through Menlo Park, no station is planned within the city although possible stations may be located in Palo Alto, Redwood City, or Mountain View. The City is currently a part of a lawsuit challenging the environmental document for the HSR project. The HSR project was not directly included in the cumulative analysis. It could potentially reduce traffic volumes on U.S. Route 101 and I-280 and other parallel facilities. Therefore, not including the HSR project results in a conservative analysis of roadway impacts.

Cumulative Impacts

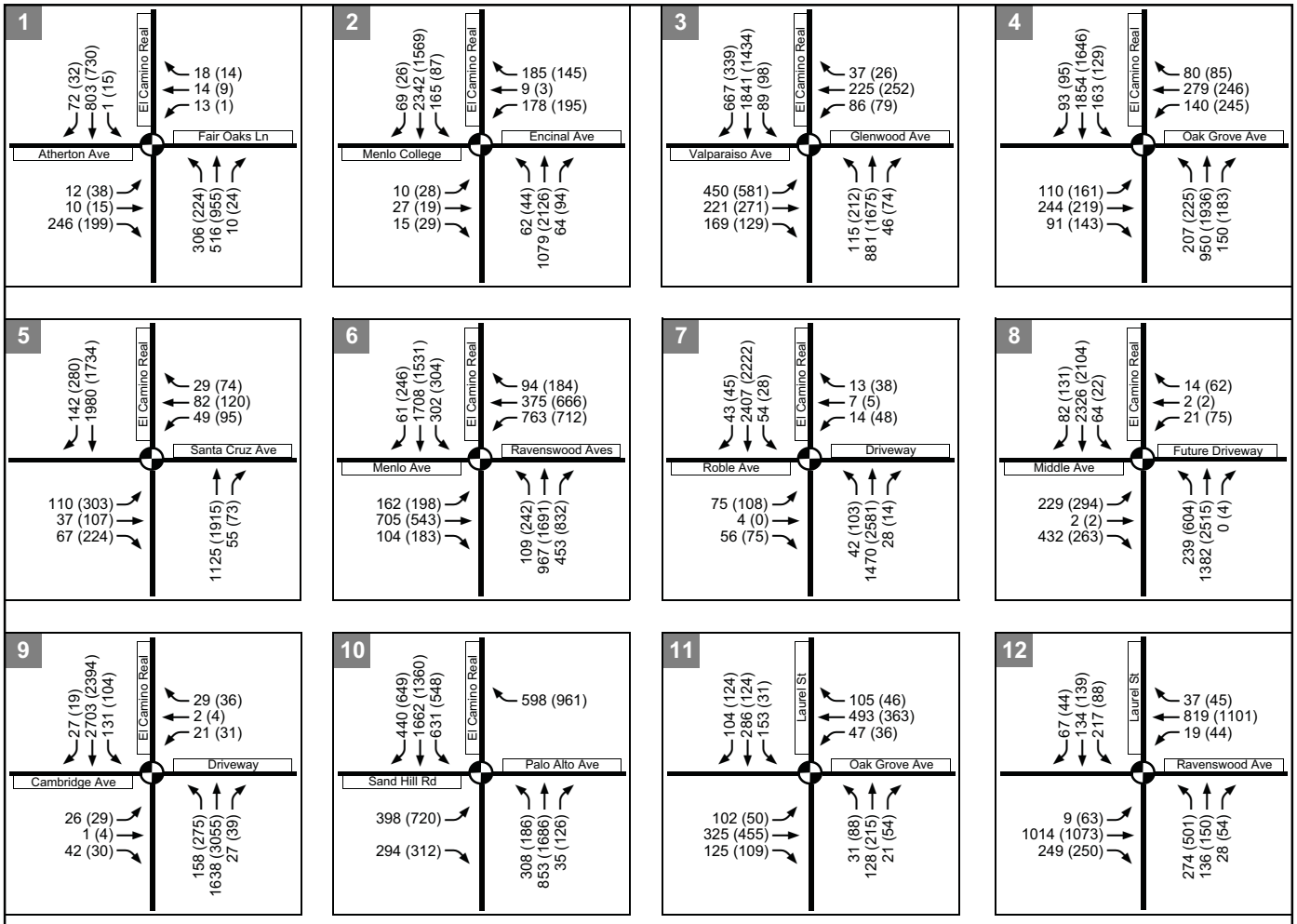
Intersections

Impact TR-7: Cumulative development, along with development in the Plan area, would adversely affect operation of local intersections. (Significant)

Cumulative Plus Project intersection volumes were estimated by adding the project trip assignments to the estimated cumulative volumes. The results are shown on **Figures 4.13-9a** through **4.13-9c**. Table 4.13-13 (page 4.13-64) presents the LOS calculation results for the study intersections under Cumulative (2035) Conditions both with and without the project. The LOS calculation sheets are contained in the technical appendices of the transportation impact analysis (**Appendix E**).

The calculated intersection levels of service do not vary with the removal of the right-turn lanes, which were originally proposed in the Draft Specific Plan, in order to allow for curb extensions. The right-turn lanes carry few vehicles in comparison to the through movements so adding those movements to the through lane (a restriped shared through/right lane) did not substantially increase the delay. However, there are some changes in the approach delays for these

[38] The U.S. Route 101 improvements are Caltrans projects identified in the 2035 Regional Transportation Plan developed by the Metropolitan Transportation Commission and adopted in December 2008 as a funded and programmed project. They are also included in the 2009 San Mateo County CMP's list of Capital Improvement Projects and are shown to be one of the San Mateo County State Transportation Improvement Program (STIP) projects as amended by the California Transportation Commission (CTC) on June 11, 2009. The funding is a combination of Proposition 1B Corridor Mobility Improvement Account (CMIA) funds and San Mateo County Measure A Funds.



SOURCE: Fehr & Peers

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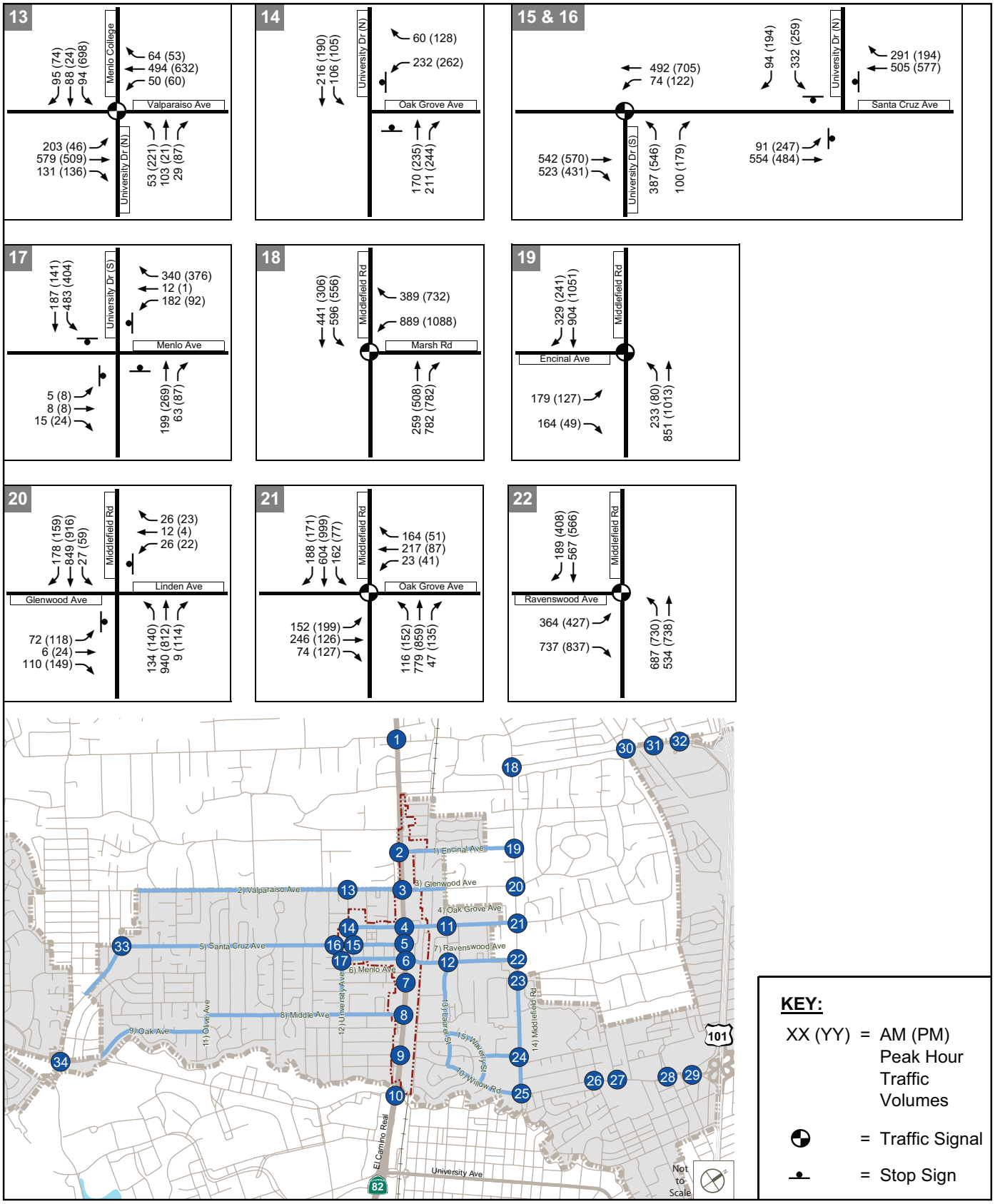
Figure 4.13-9a
Cumulative Plus Project
Traffic Control Devices and Intersection Volumes



SOURCE: Fehr & Peers

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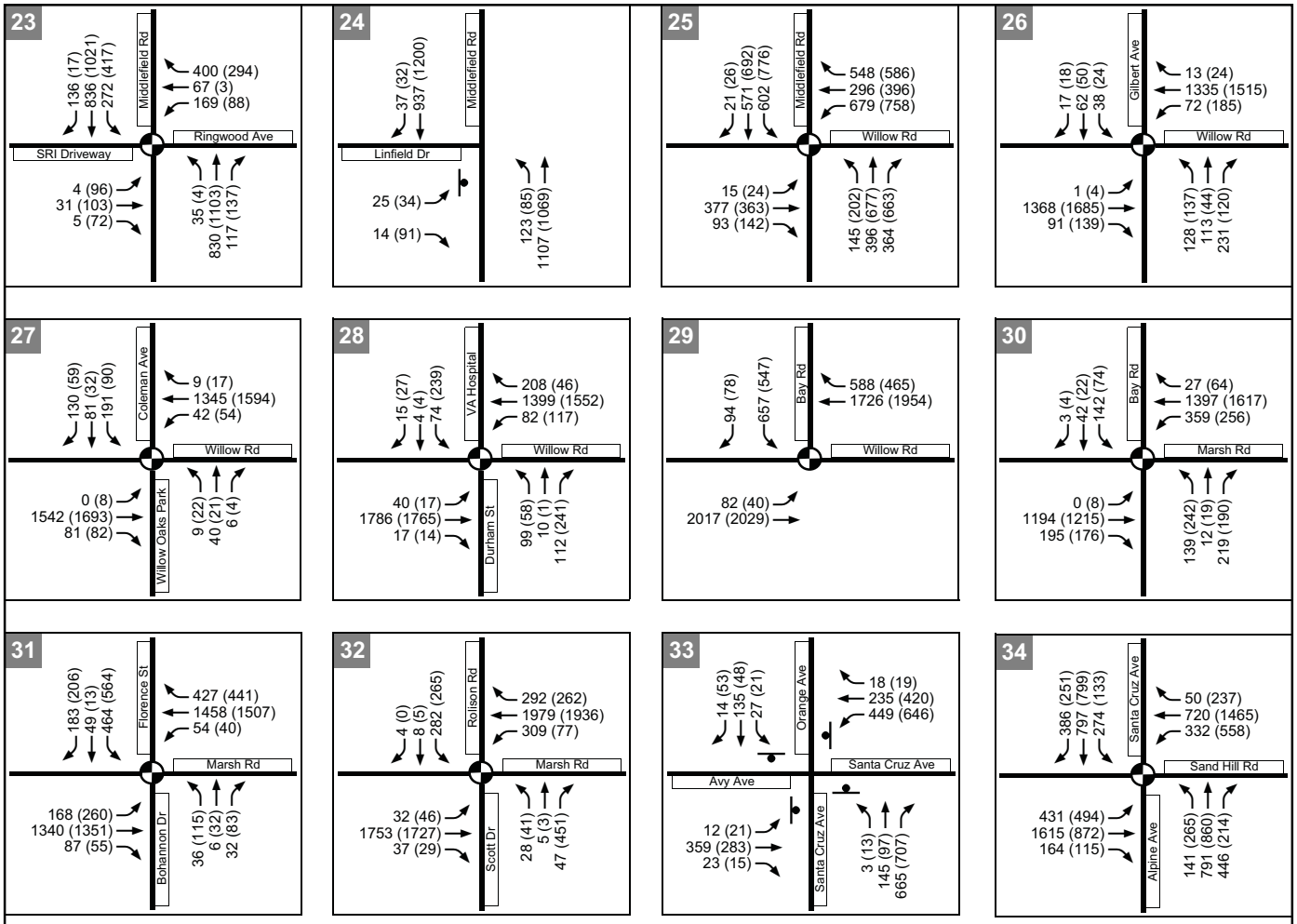
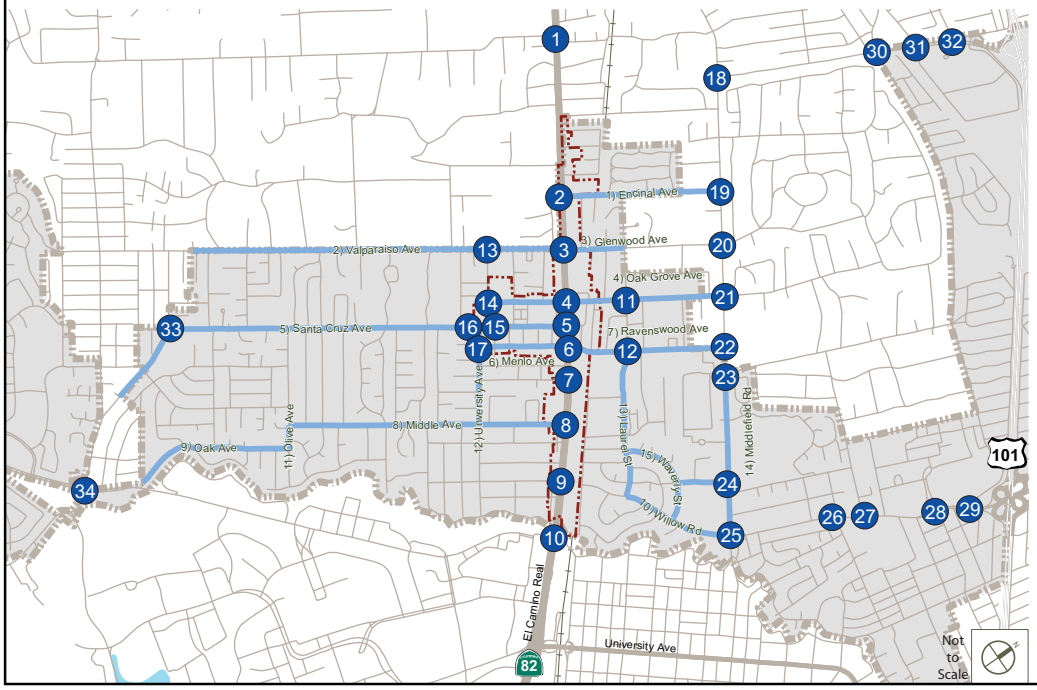
Figure 4.13-9b
Cumulative Plus Project
Traffic Control Devices and Intersection Volumes





KEY:

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

= Traffic Signal

= Stop Sign

SOURCE: Fehr & Peers

Menlo Park El Camino Real/Downtown Specific Plan EIR . 208581

Figure 4.13-9c
Cumulative Plus Project
Traffic Control Devices and Intersection Volumes

intersections between conditions with and without the right-turn lanes. These changes in approach delay are described in more detail below:

3. El Camino Real and Glenwood Avenue/Valparaiso Avenue intersection in the eastbound and westbound approaches would increase in delay without the northbound and southbound right-turn lanes in the a.m. and p.m. peak hours;

5. El Camino Real and Santa Cruz Avenue intersection in the eastbound and westbound approaches would increase in delay without the southbound right-turn lane in the a.m. and p.m. peak hours; and

6. El Camino Real and Menlo Avenue/Ravenswood Avenue intersection in the eastbound and westbound approaches would increase in delay without the southbound right-turn lane in the a.m. and p.m. peak hours.

The curb extensions are not part of the Final Specific Plan; however, the above analysis is retained for reference.

The results in Table 4.13-13 indicate that the Specific Plan would result in significant traffic impacts at the following intersections under Cumulative Plus Project Conditions:

Intersection Number	Impact
3	El Camino Real and Glenwood Avenue/Valparaiso Avenue intersection as a whole in the p.m. peak hour and the eastbound and westbound approaches in the p.m. peak hour;
6	El Camino Real and Menlo Avenue/Ravenswood Avenue intersection as a whole and the eastbound and westbound approaches in both the a.m. and p.m. peak hours with and without the southbound right-turn lane;
8	El Camino Real and Middle Avenue intersection as a whole and the eastbound and westbound approaches in the p.m. peak hour and westbound approach in the a.m. peak hour;
12	Laurel Street and Ravenswood Avenue in the p.m. peak hour;
15	University Drive (North) and Santa Cruz Avenue in the a.m. peak hour;
18	Middlefield Road and Marsh Road in the p.m. peak hour;
19	Middlefield Road and Encinal Avenue in the a.m. peak hour;
20	Middlefield Road and Glenwood Avenue/Linden Avenue in both the a.m. and p.m. peak hours;
22	Middlefield Road and Ravenswood Avenue in both the a.m. and p.m. peak hours;
24	Middlefield Road and Linfield Drive in both the a.m. and p.m. peak hours;
25	Middlefield Road and Willow Road in p.m. peak hour;
27	Coleman Avenue and Willow Road in both the a.m. and p.m. peak hours;
28	Durham Street and Willow Road in the p.m. peak hour;

Intersection Number	Impact
29	Bay Road and Willow Road in the a.m. peak hour; and
33	Orange Avenue/Santa Cruz Avenue and Avy Avenue/Santa Cruz Avenue in the a.m. and p.m. peak hours

Mitigation Measure TR-7a: The project applicant(s) shall contribute fair-share funding towards the following improvements at the intersection of El Camino Real and Glenwood Avenue/Valparaiso Avenue included in the City's Transportation Impact Fee program:

- Add a westbound right-turn lane; and
- Modifying the westbound approach to a left-turn lane, a through lane, and a right-turn lane

These modification would improve overall vehicular operations of this state-controlled intersection to LOS D in the p.m. peak hour under Cumulative Plus Project Conditions. This geometric modification would reduce the cumulative impact to a less-than-significant level.

The additional westbound right-turn lane will increase the crosswalk distance and duration of pedestrian and bicyclist exposure to motor vehicle traffic. This lane would also require ROW acquisition on the north side of Glenwood Avenue. In addition, the intersection modification would require coordination with, and approval by, Caltrans. Because of these constraints, and because the mitigation measure is not in the control of the City to implement, the impact is considered to be significant and unavoidable.

Significance after Mitigation: Significant and Unavoidable.

Mitigation Measure TR-7b: The individual project applicant(s) shall contribute fair-share funding towards the following improvements at the intersection of El Camino Real and Menlo Avenue/Ravenswood Avenue:

- Add a second southbound left-turn lane;
- Modifying the southbound right-turn lane to a shared through/right-turn lane;
- Create a southbound receiving lane;
- Add a third northbound through lane;
- Add an eastbound left-turn lane, an eastbound right-turn lane, and modify the eastbound approach to one left-turn lane, two through lanes, and one right-turn lane; and
- Change the signal phasing on the eastbound and westbound approaches from split phasing to protected left-turn phasing.

This mitigation would not reduce the average intersection delay to an acceptable level of service. However, these improvements reduce the increase in average critical movement delay to less than 0.8 seconds, thereby reducing this impact to a less-than-significant level. All modifications are identified in the City's TIF program, except adding the third northbound through lane, which has been identified as mitigation for other pending development projects in the city.

The additional southbound left-turn lane, northbound through lane, and eastbound lanes would increase the crosswalk distances and duration of pedestrian and bicyclist exposure to motor vehicle traffic. Also, the addition of the eastbound turn lanes could require ROW acquisition and parking space removal along Menlo Avenue. The second southbound left-turn and third northbound through lanes would require ROW acquisition on the east side of El Camino Real. Converting the southbound right-turn lane to a shared through/right-turn lane and adding the southbound receiving lane may require parking removal. In addition, the intersection modification would require coordination with, and approval by, Caltrans. Because of these constraints, and because the mitigation measure does not completely mitigate the impact, and the mitigation measure is not in the control of the City to implement, the impact is considered to be significant and unavoidable.

Significance after Mitigation: Significant and Unavoidable.

Mitigation Measure TR-7c: The individual project applicant(s) shall contribute fair-share funding towards the following improvement at the intersection of Laurel Street and Ravenswood Avenue identified in the City's TIF program:

- Add an eastbound right-turn lane.

This modification would improve the p.m. peak-hour level of service to LOS D under Cumulative plus Project conditions. The additional eastbound lane would increase the crosswalk distance and duration of pedestrian and bicyclist exposure to motor vehicle traffic. Also, the addition of the eastbound right-turn lane would require ROW acquisition and tree removal along Ravenswood Avenue, the precise feasibility of which cannot be determined until detailed project design is completed. Because of these constraints and uncertainties, the impact is considered to be significant and unavoidable.

Significance after Mitigation: Significant and Unavoidable.

Mitigation Measure TR-7d: Implement Mitigation Measure TR-1a (contribute fair-share funding towards signalization of the intersection of University Drive (North) and Santa Cruz Avenue [when investigation of the full set of traffic signal warrants indicate that signalization is warranted] and interconnection of the new signal with the existing signal at the University Drive (South) and Santa Cruz Avenue).

With Mitigation TR-1a, the intersection improves the level of service to LOS C during the a.m. peak hour under Cumulative Plus Project Conditions, and the impact would be reduced to a less-than-significant level. This improvement is not in the City's TIF. Therefore, the City could consider adding it to the TIF. Without a funding mechanism, this impact is considered to be significant and unavoidable.

Significance after Mitigation: Significant and Unavoidable.

Mitigation Measure TR-7e: The individual project applicant(s) shall contribute fair-share funding towards the following improvements at the intersection of Middlefield Road and Marsh Road:

- Add a second westbound left-turn lane; and
- Provide a second receiving lane on the southern leg of the intersection.

This modification would improve the level of service to LOS D during the p.m. peak hour. However, the modification would increase the crosswalk distance and duration of pedestrian and bicyclist exposure to motor vehicle traffic. Also, the addition of the westbound left-turn lane and associated receiving lane may require ROW acquisition and tree removal along both Middlefield Road and Marsh Road. In addition, the intersection is under the City of Atherton's jurisdiction. Because of these constraints, and because the mitigation measure is not in the control of the City to implement, the impact is considered to be significant and unavoidable.

Significance after Mitigation: Significant and Unavoidable.

Mitigation Measure TR-7f: Implement Mitigation Measure TR-1b (contribute fair-share funding towards signalization of the intersection of Middlefield Road and Glenwood Avenue/Linden Avenue [when investigation of the full set of traffic signal warrants indicate that signalization is warranted]).

With Mitigation TR-1b, the intersection improves the level of service to LOS B and LOS C during the a.m. and p.m. peak hour, respectively under Cumulative Plus Project Conditions, and the impact would be reduced to a less-than-significant level.

However, as noted in the discussion of Mitigation TR-1b, this intersection is under the City of Atherton's jurisdiction, therefore the City cannot guarantee its implementation and the impact remains significant and unavoidable.

Significance after Mitigation: Significant and Unavoidable.

Mitigation Measure TR-7g: The individual project applicant(s) shall contribute fair-share funding towards the following improvements at the intersection of Middlefield Road and Ravenswood Avenue, as identified in the City's TIF program:

- Add a southbound right-turn lane; and
- Modify the approach to a through lane and a right-turn lane.

These modifications would improve the level of service to LOS D during both the a.m. and p.m. peak hours. The addition of the southbound right-turn lane may require ROW acquisition and tree removal along Ravenswood Avenue, the precise feasibility of which cannot be determined until detailed project design is completed. Because of these constraints and uncertainties, the impact is considered to be significant and unavoidable.

Significance after Mitigation: Significant and Unavoidable.

Mitigation Measure TR-7h: The individual project applicant(s) shall contribute fair-share funding towards the following improvement at the intersection of Middlefield Road and Linfield Drive:

- Signalization when investigation of the full set of traffic signal warrants indicate that signalization is warranted.

Signalizing the intersection of Middlefield Road and Linfield Drive would improve the level of service to LOS B during the a.m. peak hour and LOS C during the p.m. peak hour under Cumulative Plus Project conditions. Therefore, the impact would be reduced to a less-than-significant level, if the City could guarantee its implementation.

This improvement is not in the City's TIF. Therefore, the City could consider adding it to the TIF. Without a funding mechanism, this impact is considered to be significant and unavoidable.

This intersection meets peak-hour warrants. However, as mentioned previously, the peak-hour signal warrant analysis should not serve as the only basis for deciding whether and when to install a signal. To reach such a decision, the full set of warrants should be investigated based on a thorough study of traffic and roadway conditions. The decision to install a signal should not be based solely upon the warrants, because the installation of signals can lead to certain types of collisions. Regular monitoring of actual traffic conditions and accident data, and timely re-evaluation of the full set of warrants should be considered to prioritize and program intersections for signalization.

Significance after Mitigation: Significant and Unavoidable.

Mitigation Measure TR-7i.1: Implement Mitigation Measure TR-1c (contribute fair-share funding towards adding a second westbound left-turn lane; modifying the westbound approach to two left-turn lanes, one through lane, and one right-turn lane; and changing the

signal phasing on the eastbound and westbound approaches from split phasing to protected left-turn phasing at the intersection of Middlefield Road and Willow Road, as identified in the City's TIF program).

These improvements are identified in the City's TIF program and would reduce the average intersection delay to an acceptable level. However, the improvements may not be feasible due to ROW acquisition needs (constrained by the presence of buildings). Therefore, the impact is considered to be significant and unavoidable.

Significance after Mitigation: Significant and Unavoidable.

Mitigation Measure TR-7i.2: In addition to Mitigation Measure TR-1c, the individual project applicant(s) shall contribute fair-share funding towards the following improvements at the intersection of Middlefield Road and Willow Road, as identified in the City's TIF program:

- Add a second southbound left-turn lane;
- Modify the southbound approach to two left-turn lanes, one through lane, and one through/right-turn lane; and
- Change the signal phasing on the northbound and southbound approaches from split phasing to protected left-turn phasing.

These improvements are identified in the City's TIF program and would reduce the average intersection delay to an acceptable level under Cumulative Plus Project Conditions. The additional southbound and westbound left-turn lanes would increase the crosswalk distance and duration of pedestrian and bicyclist exposure to motor vehicle traffic. Also, the addition of the left-turn lanes may require ROW acquisition. However, the improvements may not be feasible due to ROW acquisition needs. Because of these constraints, the impact is considered to be significant and unavoidable.

Significance after Mitigation: Significant and Unavoidable.

Mitigation Measure TR-7j: The individual project applicant(s) shall contribute fair-share funding towards the following improvement at the intersection of Coleman Avenue and Willow Road:

- Restripe the southbound approach to one left-turn lane and one through/right-turn lane.

This modification would improve the level of service to LOS D during both the a.m. and p.m. peak hours.

Significance after Mitigation: Less than Significant.

Mitigation Measure TR-7k: The individual project applicant(s) shall contribute fair-share funding towards the following improvement at the intersection of Durham Street and Willow Road:

- Add a southbound left-turn lane.

This mitigation would not reduce the average intersection delay to an acceptable level. However, this improvement would reduce the increase in average critical movement delay to less than 0.8 seconds, thereby reducing this impact to a less-than-significant level. The addition of the southbound left-turn lane may require ROW acquisition and tree removal along the VA Hospital Driveway, which is not under the control of the City. Because of these constraints, and because the proposed mitigation measure would not reduce impacts to a level of insignificance, the impact is considered to be significant and unavoidable.

Significance after Mitigation: Significant and Unavoidable.

Mitigation Measure TR-7l: The individual project applicant(s) shall contribute fair-share funding towards the following improvement at the intersection of Bay Road and Willow Road:

- Add a second southbound left-turn lane.

This modification would improve the level of service to LOS C during the a.m. peak hour under Cumulative Plus Project conditions. The addition of the second southbound left-turn lane may require ROW acquisition and tree removal. Because of these constraints, the impact is considered to be significant and unavoidable.

Significance after Mitigation: Significant and Unavoidable.

Mitigation Measure TR-7m: Implement Mitigation Measure TR-1d (contribute fair-share funding towards signalization of the intersection of Orange Avenue/Santa Cruz Avenue and Avy Avenue/Santa Cruz Avenue, when investigation of the full set of traffic signal warrants indicate that signalization is warranted).

Signalizing the intersection of Orange Avenue/Santa Cruz Avenue and Avy Avenue/Santa Cruz Avenue would improve the level of service to LOS C during both the a.m. and p.m. peak hours under Cumulative Plus Project conditions. Therefore, the impact would be less than significant level, if the City can guarantee its implementation.

This improvement is not in the City's TIF. Therefore, the City could consider adding it to the TIF. Without a funding mechanism, this impact is considered to be significant and unavoidable.

Significance after Mitigation: Significant and Unavoidable.

Mitigation Measure TR-7n: The individual project applicant(s) shall contribute fair-share funding towards the following improvements at the intersection of El Camino Real and Middle Avenue:

- Add a second northbound left-turn lane;
- Add a westbound receiving lane;

These improvements are identified in the City's TIF program and would improve overall vehicular operations of this state-controlled intersection to LOS D under Cumulative Plus Project Conditions.

The additional northbound left-turn lane and second westbound receiving lane will increase the crosswalk distance and duration of pedestrian and bicyclist exposure to motor vehicle traffic. This lane would also require ROW acquisition along Middle Avenue. In addition, the intersection modification would require coordination with, and approval by, Caltrans. Because of these constraints, and because the mitigation measure is not in the control of the City to implement, the impact is considered to be significant and unavoidable.

Significance after Mitigation: Significant and Unavoidable.

Roadway Segments

Impact TR-8: Cumulative development, along with development in the Plan area would adversely affect operation of local roadway segments. (Significant)

The results in **Table 4.13-14** indicate that the Specific Plan would result in significant traffic impacts at the following roadway segments under Cumulative Plus Project Conditions.

5. Oak Grove Avenue – Middlefield to Laurel
6. Oak Grove Avenue – Laurel to El Camino
7. Oak Grove Avenue – El Camino to Crane
11. Santa Cruz Avenue - University to Olive
12. Santa Cruz Avenue - Olive to Avy/Orange
14. Menlo Avenue – El Camino to Crane
15. Menlo Avenue – Crane to University
16. Ravenswood Avenue – Middlefield to Laurel
17. Ravenswood Avenue – Laurel to Alma
18. Ravenswood Avenue – Alma to El Camino
19. Middle Avenue – El Camino to University
24. University Drive – Oak Grove to Santa Cruz
25. University Drive – Santa Cruz to Menlo
28. Middlefield Road - Ringwood to Willow

Mitigation Measure TR-8: Implement TR-2 (TDM Program).

As discussed under Impact TR-2, mitigations for roadway segment impacts would require adding travel lanes and widening roadways throughout Menlo Park, but as the City is built out, there is

TABLE 4.13-14
CUMULATIVE PLUS PROJECT ROADWAY LEVELS OF SERVICE

Roadway Segment	Classification	Cumulative ADT	Added Daily Volume	Cumulative Plus Project ADT	Impact ?
1. Encinal Avenue - Laurel to Middlefield (At/MP)	Collector	5,768	80	5,848	No
2. Encinal Avenue - El Camino to Laurel (MP)	Collector	6,292	86	6,378	No
3. Valparaiso Avenue - Delfino Way to El Camino (At/MP)	Minor Arterial	13,711	488	14,199	No
4. Glenwood Avenue - El Camino to Laurel (MP)	Collector	8,004	130	8,134	No
5. Oak Grove Avenue - Middlefield to Laurel (At/MP)	Collector	***10,943***	***847***	***11,790***	***Yes***
6. Oak Grove Avenue - Laurel to El Camino (MP)	Collector	***13,138***	***861***	***13,999***	***Yes***
7. Oak Grove Avenue - El Camino to Crane (MP)	Collector	***10,730***	***699***	***11,429***	***Yes***
8. Oak Grove Avenue - Crane to University (MP)	Collector	7,492	699	8,191	No
9. Santa Cruz Avenue - El Camino to Crane (MP)	Minor Arterial	9,747	1,134	10,881	No
10. Santa Cruz Avenue - Crane to University (MP)	Minor Arterial	11,352	1,134	12,486	No
11. Santa Cruz Avenue - University to Olive (MP)	Minor Arterial	***21,117***	***1,694***	***22,811***	***Yes***
12. Santa Cruz Avenue - Olive to Avy/Orange (MP)	Minor Arterial	***20,719***	***1,694***	***22,413***	***Yes***
13. Santa Cruz Avenue - Avy/Orange to Alameda de las Pulgas (MP)	Minor Arterial	14,053	1,451	15,504	No
14. Menlo Avenue - El Camino to Crane (MP)	Collector	***16,745***	***787***	***17,532***	***Yes***
15. Menlo Avenue - Crane to University (MP)	Collector	***9,764***	***202***	***9,966***	***Yes***
16. Ravenswood Avenue - Middlefield to Laurel (At/MP)	Minor Arterial	***24,797***	***1,348***	***26,145***	***Yes***
17. Ravenswood Avenue - Laurel to Alma (MP)	Minor Arterial	***28,904***	***1,822***	***30,726***	***Yes***
18. Ravenswood Avenue - Alma to El Camino (MP)	Minor Arterial	***34,155***	***1,822***	***35,977***	***Yes***
19. Middle Avenue - El Camino to University (MP)	Collector	***11,119***	***222***	***11,341***	***Yes***
20. Middle Avenue - University to Olive (MP)	Collector	8,552	52	8,604	No
21. Oak Avenue - Sand Hill Road to Olive Street (MP)	Local	3,309	17	3,326	No
22. Willow Road - Laurel to Middlefield (MP)	Collector	8,615	32	8,647	No
23. Olive Street - Oak to Middle (MP)	Local	3,427	16	3,443	No
24. University Drive - Oak Grove to Santa Cruz (MP)	Collector	***8,548***	***774***	***9,322***	***Yes***
25. University Drive - Santa Cruz to Menlo (MP)	Collector	***11,409***	***613***	***12,022***	***Yes***
26. University Drive - Menlo to Middle (MP)	Collector	6,551	438	6,989	No
27. Laurel Street - Ravenswood to Willow (MP)	Collector	9,113	32	9,145	No
28. Middlefield Road - Ringwood to Willow (MP)	Minor Arterial	***26,053***	***1,822***	***27,875***	***Yes***
29. Waverley Street - Laurel to Linfield (MP)	Local	1,955	4	1,959	No
30. Linfield Drive - Waverley to Middlefield (MP)	Local	2,090	4	2,094	No

NOTES:
Potentially significant impacts are indicated in ***bold and Italic*** type
Jurisdictions: Ct - Caltrans, At - Atherton, MP - Menlo Park, PA - Palo Alto

SOURCE: Fehr & Peers, 2010.

little opportunity to widen roadways within the available right-of-way, and any widening would require property acquisition. Due to the number of affected properties and financial implications, roadway segment impacts are significant and unavoidable. Implementation of Mitigation Measure TR-2 (page 4.13-51) would help reduce traffic volumes and minimize the impacts from the Specific Plan, but because the effectiveness of a TDM program cannot be guaranteed, the impact to roadway segments is considered to be significant and unavoidable.

Significance after Mitigation: Significant and Unavoidable.

Freeway Segments

Impact TR-9: Cumulative development, along with development in the Plan area would increase traffic volumes on local freeway segments. (Less than Significant)

The freeway segment analysis for Cumulative Conditions is shown in **Table 4.13-15**. As described above under Cumulative Roadway Improvements, the freeway capacities on U.S. Route 101 include the planned auxiliary lanes from Marsh Road to the Santa Clara County line.

For Congestion Management Program (CMP) facilities, the significance test is whether the addition of project traffic causes a segment to exceed its LOS threshold or if it adds an amount of traffic greater than 1 percent of the segment's capacity. The CMP LOS threshold on U.S. Route 101 is LOS F. The southbound direction is currently operating at LOS F during both the a.m. and p.m. peak hours based on average speeds according to the 2009 CMP Monitoring Report. It is projected to continue to operate at LOS F due to the projected increase in traffic volumes even with the increase in capacity. The northbound direction is currently operating at LOS D during the a.m. peak hour and LOS F during the p.m. peak hour. It is projected to operate at LOS F in both directions under Cumulative Conditions.

The capacities of the analysis segments under Cumulative Conditions and the amount of added project traffic are shown in Table 4.13-15. The amount of project traffic would be less than one percent of the capacity. Therefore, the project would have no impact.

The CMP LOS threshold on I-280 is LOS D. According to the 2009 CMP Monitoring Report, it is operating at LOS D. Therefore, a volume-to-capacity ratio analysis was conducted to determine whether the addition of project traffic would cause a segment to exceed the threshold (LOS E).

The results for cumulative conditions are presented in Table 4.13-15. Portions of I-280 in the study area are projected to exceed the threshold and operate at LOS F. The amount of project traffic added to the LOS F segments is less than one percent of the capacity. Therefore, the project would have no impact on I-280.

Mitigation: None required.

TABLE 4.13-15
CUMULATIVE PLUS PROJECT FREEWAY LEVELS OF SERVICE

Segment	Direction	Peak Hour	Cuml. Volume[a]	Cuml. Capacity[b]	Cuml. V/C[c]	Cuml. LOS[d]	Project Volume	% of Capacity	C+P Volume	C+P V/C[c]	C+P LOS[d]	LOS Threshold
U.S. Route 101, North of Marsh Road	NB	AM	-	8,340[e]	-	**F**	17	0.20%	-	-	**F**	F
		PM	-	7,780[e]	-	**F**	30	0.39%	-	-	**F**	
	SB	AM	-	7,740[e]	-	**F**	31	0.40%	-	-	**F**	
		PM	-	8,110[e]	-	**F**	26	0.32%	-	-	**F**	
U.S. Route 101, South of Willow Road	NB	AM	-	6,470[e]	-	**F**	38	0.59%	-	-	**F**	F
		PM	-	6,470[e]	-	**F**	36	0.56%	-	-	**F**	
	SB	AM	-	6,470[e]	-	**F**	29	0.45%	-	-	**F**	
		PM	-	6,470[e]	-	**F**	43	0.66%	-	-	**F**	
I-280, North of Sand Hill Road	NB	AM	6,187	9,000	0.69	C	23	0.26%	6,210	0.69	C	D
		PM	9,935	9,000	**1.10**	**F**	56	0.62%	**9,991**	**1.11**	**F**	
	SB	AM	10,563	9,000	**1.17**	**F**	47	0.52%	**10,610**	**1.18**	**F**	
		PM	6,560	9,000	0.73	D	38	0.42%	6,598	0.73	D	
I-280, South of Alpine Road	NB	AM	6,254	9,000	0.69	C	60	0.67%	6,314	0.70	C	D
		PM	9,982	9,000	**1.11**	**F**	42	0.47%	**10,024**	**1.11**	**F**	
	SB	AM	10,628	9,000	**1.18**	**F**	32	0.36%	**10,660**	**1.18**	**F**	
		PM	6,620	9,000	0.74	D	64	0.71%	6,684	0.74	D	

NOTES:
[a] Peak hour volumes obtained from Caltrans data and adjusted for corridor growth
[b] Capacity based on number of lanes and per lane capacity of 2,300 vehicles per hour per lane (vphpl) for I-280 and 2,200 vphpl for U.S. Route 101, per the 2000 *Highway Capacity Manual - Special Report 209,*and projected volumes for auxiliary lanes – all adjusted for trucks.
[c] Volume-to-Capacity ratio (V/C)
[d] LOS calculations performed using the 2000 *Highway Capacity Manual - Special Report 209* methods for freeway segments
[e] Future ramp volumes were not available to account for auxiliary lane capacities. Therefore, existing capacities were used in this analysis. These existing capacities would be lower than the future capacities and would represent a more conservative analysis.
Unacceptable operations are indicated in **bold** type. Significant impacts are shown in ***bold italics*** type.

SOURCE: Fehr & Peers, 2010.