



City of Menlo Park

Housing Element Update, General Plan Consistency Update, and Zoning Ordinance Amendments Environmental Assessment

The Planning Center | DC&E
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1 INTRODUCTION

This Environmental Assessment (EA) evaluates the potential environmental consequences of future development that could occur as a result of adopting and implementing the proposed Housing Element Update, General Plan Consistency Update, and associated Zoning Ordinances amendments, together referred to as the “Plan Components.” This EA has been completed to inform City of Menlo Park decision-makers, other agencies, and the general public of the nature of the Plan Components and their potential effects on the environment. When appropriate, this EA identifies mitigation measures that, if adopted, would reduce or avoid potentially significant impacts. It also examines alternatives to the Plan Components. The City of Menlo Park (City) is the lead agency on the EA.

In 2012, three housing advocacy groups sued the City citing the City’s failure to comply in a timely fashion with the State mandated Housing Element update. A court order required the City to expeditiously complete an update to the Housing Element. California Government Code Section 65759(a)(2) provides that when a city is ordered by a court to bring its General Plan, which includes the Housing Element, into compliance, the City shall prepare an environmental assessment, the content of which shall substantially conform to the required content of a Draft Environmental Impact Report (EIR). With an environmental assessment, there is no formal comment period and no “response to comments” document that would generally be prepared as a Final EIR. The EA will be reviewed in public session by the City Planning Commission and reviewed and adopted in public session by the City Council.

Consistent with the California Environmental Quality Act (CEQA), this EA describes the potential programmatic environmental impacts associated with implementation of future development that would be possible under the Plan Components. As described in Section 15168 of the CEQA Guidelines, *program-level* environmental review documents are appropriate when a project consists of a series of actions related to the issuance of rules, regulations, and other planning criteria. The Plan Components that are the subject of this EA consist of long-term plans that will be implemented as policy documents guiding future development activities and City actions. Because this is a program-level EA, it does not evaluate the impacts of specific, individual developments that may be allowed under the Housing Element, General Plan, and Zoning Ordinance. Future specific projects may be the subject of separate environmental review as required by CEQA.

If no exemption applies and the project would have effects not examined in the EA or would require new mitigation measures, then a project-specific Initial Study would need to be prepared leading to either an EIR or a Negative Declaration. This EA is anticipated to provide a basis for future project-level CEQA analysis.

A. Environmental Review Process and Scope

1. Public Meetings

The City is scheduled to conduct a series of public meetings on the Housing Element update process between June 2012 and May 2013. The Housing Element process was guided by a Steering Committee, comprised of members of the City Council, Housing Commission, and Planning Commission. The Steering Committee meetings, subject to the 2003 Brown Act,¹ met six times between June and January 2013. In addition, those wishing to receive notifications of upcoming meetings and/or follow the Housing Element process were invited to subscribe to the City's electronic noticing system available on the City's Housing Element Update webpage.

On October 31, 2012, the City submitted its Draft Housing Element to the State Department of Housing and Community Development, which started the official 60-day review period by the State. At this same time, the City made the Draft Housing Element available in digital format on the City's website at www.menlopark.org and as printed copies at the following City facilities:

- Community Development Office, 701 Laurel Street
- Main Library, 800 Alma Street
- Belle Haven Library, 413 Ivy Drive
- Onetta Harris Community Center, 100 Terminal Avenue
- Senior Center, 110 Terminal Avenue

The City presented an overview and addressed questions about the Plan Components at the following public meetings:

- Housing Commission: Wednesday, December 5 at 5:30 p.m.
- Environmental Quality Commission: Wednesday, December 5 at 6:30 p.m.
- Bicycle Commission: Monday, December 10 at 7:00 p.m.
- Transportation Commission, Wednesday, December 12 at 7:00 p.m.
- Planning Commission: Monday, December 17 at 7:00 p.m.
- Parks & Recreation Commission: Wednesday, December 19 at 6:30 p.m.

Members of the public were invited to submit comments in writing by Friday, December 21, 2012 at 5:00 p.m.

¹ The 2003 Ralph M. Brown Act (Government Code Section 54950 *et seq.*) includes provisions for open meetings (e.g. requirements, notices and comment opportunities) for local government bodies.

2. Agency Meetings

The City held a series of meetings/interviews with public agencies and districts on November 13, 19 and 20, 2012. These meetings were attended by the following:

- “ City of Menlo Park Finance Department, December 13 at 8:30 a.m.
- “ City of Menlo Park Community Development Department, December 13 at 9:00 a.m.
- “ City of Menlo Park Community Services Department (Housing), December 13 at 9:30 a.m.
- “ City of Menlo Park Public Works (Water & Stormwater), December 13 at 10:00 a.m.
- “ Menlo Park Library, December 13 at 11:00 a.m.
- “ City of Menlo Park Public Works (Solid Waste), December 13 at 1:00 p.m.
- “ City of Menlo Park Community Services Department (Recreation), December 13 at 1:30 p.m.
- “ City of Menlo Park Public Works (Transportation), December 13 at 2:30 p.m.
- “ City of Menlo Park Police Department, December 13 at 3:00 p.m.
- “ Sequoia Union High School District, December 19 at 1:00 p.m.
- “ West Bay Sanitary District, December 19 at 2:00 p.m.
- “ Las Lomas School District, December 19 at 3:00 p.m.
- “ Redwood City School District, December 19 at 4:30 p.m.
- “ Menlo Park Elementary School District, December 20 at 1:00 p.m.
- “ Menlo Park Fire Protection District, December 20 at 2:00 p.m.
- “ Ravenswood School District, January 31, 2013 at 2:25 p.m.

3. Initial Study

Pursuant to California Government Code Section 65759(a)(1), an Initial Study was prepared prior to the preparation of this EA to determine the environmental topics for which the potential future development associated with the Plan Components could result in potentially significant impacts. The Initial Study is contained in this EA as Appendix A.

Accordingly, as provided above, the scope of this EA was established through consultation with City Staff, consideration of agency and public comments received on environmental issues and through preparation of the Initial Study.

Environmental topics addressed in this EA include:

- “ Aesthetics
- “ Air Quality
- “ Biological Resources
- “ Cultural Resources
- “ Geology and Soils
- “ Greenhouse Gas Emissions
- “ Hazards and Hazardous Materials
- “ Hydrology and Water Quality
- “ Land Use and Planning
- “ Noise
- “ Population and Housing
- “ Public Services and Recreation
- “ Traffic and Transportation
- “ Utilities and Service Systems

B. Proposed Action

The proposed action analyzed in this EA is the implementation of the Plan Components. The proposed Housing Element Update would replace the existing Housing Element, which was adopted in 1992. The proposed General Plan Consistency Update would amend the existing General Plan, which was adopted in December 1, 1994 with amendments through June 2012. The proposed Zoning Ordinance amendments would modify and/or add to the existing Zoning Ordinance. The potential future development associated with the Plan Components is described in detail in Chapter 3, Project Description, of this EA.

C. Report Organization

This report is organized into the following chapters:

- “ **Chapter 1: Introduction** provides an introduction and overview of the document.
- “ **Chapter 2: Report Summary** provides a synopsis of the environmental impacts from the Plan Components, describes recommended mitigation measures, and indicates the level of significance of impacts before and after mitigation.

- “ **Chapter 3: Project Description** describes the Plan Components in detail, including the location, planning process, future development characteristics under the Plan Components, buildout, and required permits and approvals.
- “ **Chapter 4: Environmental Evaluation** provides an analysis of the potential environmental impacts of the potential future development associated with the Plan Components and presents recommended mitigation measures to reduce their significance, as necessary.
- “ **Chapter 5: Alternatives to the Proposed Project** considers two alternatives to the Plan Components, including the CEQA-required “No Project Alternative.”
- “ **Chapter 6: Report Preparation** identifies the preparers of the EA.

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INTRODUCTION

2 REPORT SUMMARY

This summary presents an overview of the analysis contained in this Environmental Assessment (EA). The chapter summarizes the following: 1) the potential future development, 2) areas of controversy, 3) significant impacts and mitigation measures, 4) unavoidable significant impacts, and 5) alternatives to the Plan Components. A complete description of the Plan Components is provided in Chapter 3, Project Description. For more information about future alternatives, see Chapter 5, Alternatives to the Proposed Plan Components.

A. Plan Components under Review

This EA evaluates the proposed Housing Element Update, General Plan Consistency Update, and associated Zoning Ordinance amendments, together referred to as the “Plan Components,” which consists of the following.

1. Housing Element Update

The Plan Components include a comprehensive update to the City’s Housing Element, in compliance with Government Code Section 65580 *et seq.* The proposed Housing Element Update policies and programs are intended to guide the City’s housing efforts through the 2007 to 2014 Regional Housing Needs Allocation (RHNA) cycle. To meet its RHNA for the current (2007 to 2014) and prior (1999 to 2006) planning periods, the City needs to demonstrate that it can accommodate 1,975 units. The City has calculated an “adjusted” RHNA that accounts for units that can be credited to the City based on past construction activity, current zoning, buildout of existing plans, and implementation programs contained in the Housing Element. Based on these calculations, the City has identified a need to rezone sites to accommodate 454 housing units for lower income (very low income and low income) households at approximately 30 dwelling units per acre.¹ To meet this remaining RHNA, the City proposes to rezone sites to allow up to 500 units for lower income households, which is more than what is required, in the case that all rezoned parcels are not developed for low income housing. As part of this process, the City would amend its Zoning Ordinance and rezone five properties to accommodate up to 894 housing units.² In addition, implementation of housing programs to encourage the development of secondary dwelling units and more residential units on infill sites

¹ All of the five identified housing sites are studied at 30 or more dwelling units per acre.

² The City has identified five potential housing sites for rezoning to higher density residential for up to 894 dwelling units. For the purpose of this EA, however, 900 units are being studied.

around downtown could accommodate up to 418 housing units, for a total of 1,318 new dwelling units³ by buildout year 2035. The buildout of the proposed future development exceeds the minimum amount of housing units needed to meet the City's RHNA.

2. General Plan Consistency Update

In order to maintain consistency between the Housing Element and other elements of the General Plan, and consistency between the General Plan and Zoning Ordinance, other General Plan elements would be amended at the same time that the Housing Element is adopted. Within 60 days of adopting this Housing Element Update, the City must complete all General Plan amendments required to make the General Plan consistent with the Housing Element. The proposed General Plan consistency update includes amendments to the following elements:

- ◆ Noise Element (adopted November 14, 1978)
- ◆ Seismic Safety and Safety Element (adopted June 22, 1976)
- ◆ Open Space and Conservation Element (adopted June 26, 1973)

3. Zoning Ordinance Amendments

Five housing sites have been identified for their appropriateness for higher density housing (i.e. at 30 or more dwelling units per acre). The City will rezone these sites to meet the RHNA. In order to accomplish the rezoning, the City will need to amend the Zoning Ordinance and may need to modify the off-street parking requirements and other development standards.

B. Areas of Controversy

The following areas of controversy have been identified in the initial public meetings regarding the Plan Components held between June and December 2012 and through consultation with responsible agencies and districts, and City staff. The topics that would have physical impacts under CEQA are addressed in this EA. Comments on the appropriateness of the components of the Housing Element will be considered by the City Council during the review of the Housing Element.

³ The total number of proposed units under environmental review equals a maximum of 900 units on proposed housing sites plus 418 units through proposed housing programs for a total of 1,318 units at buildout.

- a. Hydrology and Water Quality
 - “ Evaluate flooding issues
 - “ Sea level rise
- b. Land Use and Planning
 - “ Consider providing a balance of higher density housing around the City of Menlo Park
 - “ Opportunities to provide housing for employees in the area
 - “ Mixed-use opportunities
 - “ Senior housing opportunities
- c. Public Services and Recreation
 - “ Preserve as much open space as possible
 - “ Minimize impacts to schools
- d. Transportation and Traffic
 - “ Creation of senior housing to generate fewer trips/ minimize traffic impacts
 - “ Transportation and access to services and activities

C. Alternatives to the Proposed Plan Components

This EA analyzes alternatives to the Plan Components that are designed to reduce the significant environmental impacts of the potential future development and feasibly attain some of the objectives identified. The following alternatives were analyzed in detail in Chapter 5 of this EA:

- “ **No Project Alternative.** Under this alternative, the City’s Housing Element would not be updated to fulfill the Regional Housing Needs Allocation (RHNA) for the current planning period (2007 to 2014) as well as the previous planning period (1999 to 2006). The policies and programs of the current General Plan would remain in effect and no associated Zoning Ordinance amendments would occur.
- “ **Reduced Density Alternative.** Under this alternative, the overall number of proposed housing units that would be permitted through adopting and implementing the proposed Housing Element Update,

General Plan Consistency Update, and associated Zoning Ordinances amendments would be reduced by 25 percent. All other aspects of the Plan Components would remain the same.

Please see Chapter 5, Alternatives to the Proposed Plan Components, for more information on these alternatives and on alternatives that were considered but not carried forward for detailed analysis.

As shown in the alternatives analysis in Chapter 5, the Reduced Density Alternative would be the environmentally superior alternative.

D. Summary of Impacts and Mitigation Measures

Consistent with CEQA, a significant impact on the environment is defined as a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by a project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic and aesthetic significance.

The potential future development has the potential to generate significant environmental impacts in a number of areas. In Chapters 4.1 through 4.14, significant impacts that have been identified for the potential future development are numbered. Each numbered impact is considered significant prior to mitigation, unless it is specifically identified as less than significant. Mitigation measures have been suggested to reduce the effects of significant impacts. As shown in Table 2-1, most of the significant impacts would be reduced to a less-than-significant level if the mitigation measures recommended in this report were implemented. However, in some instances the mitigation measure that is recommended would not be sufficient to reduce a significant impact to a less-than-significant level (for example, Impact AQ-1); these impacts are identified as significant and unavoidable after mitigation.

CEQA allows environmental issues for which there is no likelihood of a significant impact to be “scoped out” during the scoping process, and not analyzed further in the EA. Through the preparation of an Initial Study (see Appendix A), it was determined that the potential future development would have no impact on agricultural, forestry, or mineral resources due to existing conditions. These issues have therefore not been analyzed further in this EA.

Table 2-1 presents a summary of impacts and mitigation measures identified in this report. It is organized to correspond with the environmental issues discussed in Chapter 4.

The table is arranged in four columns: 1) environmental impacts, 2) significance prior to mitigation, 3) mitigation measures, and 4) significance after mitigation. A series of mitigation measures is noted where more than one measure may be required to achieve a less-than-significant impact. For a complete description of potential impacts and suggested mitigation measures, please refer to the specific discussions in Chapter 4.

TABLE 2-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Significant Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
AIR QUALITY			
Impact AQ-1: Subsequent environmental review of the Plan Components may identify that construction and operational phase emissions would exceed BAAQMD’s Project-Level significance thresholds.	S	<p><u>Mitigation Measure AQ-1:</u> Applicants for future development projects shall comply with the following Bay Area Air Quality Management District Basic Control Measures for reducing construction emissions of PM₁₀:</p> <ul style="list-style-type: none"> “ Water all active construction areas at least twice daily, or as often as needed to control dust emissions. Watering should be sufficient to prevent airborne dust from leaving the site. Increased watering frequency may be necessary whenever wind speeds exceed 15 miles per hour. Reclaimed water should be used whenever possible. “ Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least two feet of freeboard (i.e. the minimum required space between the top of the load and the top of the trailer). “ Pave, apply water twice daily or as often as necessary, to control dust, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas, and staging areas at construction sites. “ Sweep daily (with water sweepers using reclaimed water if possible), or as often as needed, with water sweepers all paved access roads, parking areas and staging areas at the construction site to control dust. “ Sweep public streets daily (with water sweepers using reclaimed water if possible) in the vicinity of the project site, or as often as needed, to keep streets free of visible soil material. “ Hydroseed or apply non-toxic soil stabilizers to inactive construction areas. “ Enclose, cover, water twice daily or apply non-toxic soil binders to exposed stockpiles (dirt, sand, etc.). “ Limit vehicle traffic speeds on unpaved roads to 15 mph. “ Replant vegetation in disturbed areas as quickly as possible. 	SU

LTS = Less Than Significant S = Significant SU = Significant Unavoidable Impact

TABLE 2-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES (CONTINUED)

Significant Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
<i>AQ-2 continued</i>		<p>.. Install sandbags or other erosion control measures to prevent silt runoff from public roadways</p> <p>Mitigation Measure AQ-1 would require adherence to Bay Area Air Quality Management District’s (BAAQMD) Basic Control Measures for fugitive dust control. An analysis of emissions generated operation and construction of subsequent Plan Components would be required to evaluate emissions compared to BAAQMD’s Project-Level significance thresholds during individual environmental review. It should be noted that the identification of this program-level impact does not preclude the finding of future less-than-significant impact for subsequent projects that comply with BAAQMD screening criteria or meet applicable thresholds of significance. However, due to the programmatic nature of the Plan Components, no additional mitigating policies are available and the impact is considered <i>significant and unavoidable</i>.</p>	
<p>Impact AQ-2: Under the Plan Components, future residential development is proximate to substantial pollutant concentration.</p>	S	<p><u>Mitigation Measure AQ-2:</u> Prior to issuing building permits, the City shall evaluate all new residential development pursuant to current guidelines (e.g. Bay Area Air Quality Management District CEQA Guidelines), including a risk assessment of all stationary and mobile emission sources within a 1,000-foot radius of the proposed project that emit sources of toxic air contaminants.</p>	LTS
<p>Impact AQ-3: While the potential future residential development would not release TACs, various industrial and commercial processes (e.g. manufacturing, dry cleaning) allowed under the existing General Plan would be expected to release TACs resulting in community risk and hazards from placement of new sources of air toxics near sensitive receptors.</p>	S	<p><u>Mitigation Measure AQ-3:</u> Prior to issuing building permits, the City shall evaluate all new industrial development pursuant to current guidelines (e.g. Bay Area Air Quality Management District CEQA Guidelines) to determine its potential to emit toxic air contaminants and impact sensitive receptors (e.g. residences, day care centers, schools, or hospitals) within a 1,000-foot radius of the project site.</p>	LTS

LTS = Less Than Significant S = Significant SU = Significant Unavoidable Impact

TABLE 2-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES (CONTINUED)

Significant Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
CULTURAL RESOURCES			
<p>Impact CULT-1: Future development on potential infill sites around downtown and future second units could lead to demolition and alteration that has the potential to change the historic fabric or setting of historic architectural resources such that the resource's ability to convey its significance may be materially impaired</p>	S	<p><u>Mitigation Measure CULT-1:</u> At the time that individual projects are proposed for residential development on any infill or second unit housing sites around the downtown area with a building more than 50 years old or any site adjoining a property with a building more than 50 years old, the City shall require the project applicant to prepare a site-specific evaluations to determine if the project is subject to completion of a site-specific historic resources study. If it is determined that a site-specific historic resources study is required the study shall be prepared by a qualified architectural historian meeting the Secretary of the Interior's Standards for Architecture or Architectural History. At a minimum, the study shall consist of a records search of the California Historical Resources Information System, 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 study shall describe the historic context and setting, methods used in the investigation, results of the evaluation, and recommendations for management of identified resources. If applicable, the specific requirements for inventory areas and documentation format required by certain agencies, such as the Federal Highway Administration and California Department of Transportation (Caltrans), shall be adhered to.</p> <p>If the project site or adjacent properties are found to be eligible for listing on the California Register, the project shall be required to conform to the current <i>Secretary of the Interior's Standards for Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, and Restoring Historic Buildings</i>, which 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.</p>	LTS

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TABLE 2-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES (CONTINUED)

Significant Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
GREENHOUSE GAS EMISSIONS			
Impact GHG-1: Ongoing activities in the City would conflict with Executive Order S-03-05’s goal to reduce GHG emissions by 80 percent below 1990 levels by 2050. The majority of the reductions needed to reach the 2050 target will likely come from State measures (e.g. additional vehicle emissions standards), but the City does not have authority over such measures. The State has not identified plans to reduce emissions beyond 2020. As stated above, implementation of the Plan Components, which would integrate the policies identified in the City’s CAP to the General Plan would reduce community-wide GHG emissions and all feasible measures have been included.	S	No additional mitigating policies are available, and the impact is considered significant and unavoidable.	SU
Impact GHG-2: The future residential development would conflict with Executive Order S-03-05’s goal to reduce GHG emissions by 80 percent below 1990 levels by 2050. The Plan Components do not consist of one or more actual development projects involving the physical construction of dwelling units, but rather provides policies and implementing programs under which new housing development would be allowed. Accordingly, new residential development in the EA Study Area, it would be subject to the policies identified in the City’s CAP to the General Plan, which would reduce community-wide GHG emissions.	S	As with the community-wide GHG emissions discussed under Impact GHG-1, no additional mitigating policies are available and the impact is considered significant and unavoidable.	SU

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TABLE 2-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES (CONTINUED)

Significant Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
HAZARDS AND HAZARDOUS MATERIALS			
Impact HAZ-1: Potential housing Site 5 is site with known exposure to hazardous materials in the past and at the time of writing this EA has restrictions related to hazardous waste remediation under the authority of the San Mateo County.	S	<u>Mitigation Measure HAZ-1:</u> Prior to issuing building permits for residential development on potential housing Site 5 (Haven Avenue) the applicant shall assess exposure to hazardous materials through the preparation of a focused Phase 1 Environmental Site Assessment (ESA). The ESA shall include an initial screening level analysis followed by a detailed, quantitative human risk assessment analysis, if necessary, per the approval of the San Mateo County Environmental Health Services Division. The applicant shall also prepare and implement a Soil Management Plan and companion Sampling and Analysis Plan during and following soil excavation and compaction activities. As part of the Soil Management Plan, the applicant shall retain an experienced, independent environmental monitor to observe all significant earth-moving activities. The monitor shall observe the operations, remaining watchful for stained or discolored soil that could represent residual contamination. The monitor shall also be empowered to alert the City and regulatory agencies, when appropriate, and provide direction to the grading contractor.	LTS
TRANSPORTATION AND TRAFFIC			
Impact TR-1: As shown in Table 4.13-10, eight intersections have <i>significant</i> impacts with the addition of trips from future residential development during both AM or PM peak hours under Near-Term 2014 plus Plan Components conditions. Figure 4.13-9 illustrates the recommended geometry improvements to reduce these impacts.	S	<u>Mitigation Measure TR-1a:</u> At the intersection of Alpine Road/Santa Cruz Avenue and Junipero Serra Boulevard, the necessary mitigation measure is to re-stripe the northbound approach on Alpine Road from two through lanes and one right turn lane to one through lane, one shared through/right turn lane and one right turn lane. A bike lane is currently striped between the right-most thru lane and the right turn lane. With the mitigation measure, the intersection level of service improves to LOS D during the AM peak hour, under the Near-Term 2014 plus Plan Components conditions. However, the re-striping for the northbound approach may not be feasible since this may create a challenge by placing bicyclists between two right turn lanes and may, therefore, require further analysis for the existing bike lane.	SU

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TABLE 2-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES (CONTINUED)

Significant Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
TR-1 <i>continued</i>	S	<p><u>Mitigation Measure TR-1b:</u> At the intersection of Middlefield Road and Willow Road, the necessary mitigation measure is to re-stripe the northbound approach on Middlefield Road from one left turn lane, two through lanes and one right turn lane to one left turn lane, one through lane, one shared through/right turn lane and one right turn lane.</p> <p>With the mitigation measure, the intersection level of service improves to LOS D during the AM peak hour and improves to LOS E during the PM peak hour, under the Near-Term 2014 plus Plan Components conditions. According to the 1601 Willow Road Development Agreement for the Facebook East Campus Project (FECPPDA), Facebook is responsible for implementing this necessary mitigation measure.</p>	LTS
	S	<p><u>Mitigation Measure TR-1c:</u> At the intersection of Bohannon Drive/Florence Street and Marsh Road, the necessary mitigation measure is to add one exclusive westbound right turn lane on Marsh Road.</p> <p>With the mitigation measure, the intersection level of service improves to LOS D during the AM peak hour, under the Near-Term 2014 plus Plan Components conditions. Through the Development Agreement for the Menlo Gateway Project (MGDA), Bohannon Development Agreement is responsible for implementing the necessary mitigation measure.</p>	LTS
	S	<p><u>Mitigation Measure TR-1d:</u> At the intersection of Scott Drive/Rolison Road and Marsh Road, the necessary mitigation measure is to re-stripe the westbound approach on Marsh Road from two left turn lanes, one through lane and one shared through/right turn lane to one left turn lane, two through lanes and one right turn lane.</p> <p>With the mitigation measure, the intersection level of service improves to LOS D while the average queue for the westbound left turn movement remains as one vehicle during the PM peak hour, under the Near-Term 2014 plus Plan</p>	SU

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TABLE 2-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES (CONTINUED)

Significant Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
TR-1 <i>continued</i>	S	<p>Components conditions. The improvements may appear feasible in the existing right-of-way, but the intersection is under both City and Caltrans jurisdiction and coordination between the two jurisdictions would be required. As such, the City cannot guarantee implementation of the mitigation measure.</p> <p>Mitigation Measure TR-1e: At the intersection of Newbridge Street and Willow Road, the necessary mitigation measure is to re-stripe the southbound approach on Newbridge Street from one left turn lane, one through lane and one right-turn lane to one shared left turn/through lane, one shared through/right turn lane and one right turn lane, and to add one additional receiving lane on the south leg on Newbridge Street accordingly.</p> <p>With the mitigation measure, the intersection still operates at LOS F during both the AM and PM peak hours, but the delay for the most critical movements are reduced to be less than under the Near-Term 2014 plus Plan Components conditions. However, the improvements may not be feasible due to right-of-way constraints on the south leg of the intersection, which would impact private property in East Palo Alto. In addition, this intersection is under Caltrans jurisdiction, and the City cannot guarantee implementation of the mitigation measure.</p> <p>It should be noted that FECFDA also suggests a mitigation measure for this intersection, which includes an additional eastbound left-turn lane, an additional northbound receiving lane for the eastbound left turning traffic, an additional westbound through/right-turn lane, and an additional receiving lane for the westbound through traffic. With this mitigation measure, the intersection still operates at LOS F during both the AM and PM peak hours. The delay for the most critical movements are reduced to be less than under the Near-Term condition during the PM peak hour; however, during the AM peak hour, the delay for the eastbound through critical movement is 70 seconds higher than under</p>	SU

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TABLE 2-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES (CONTINUED)

Significant Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
TR-1 <i>continued</i>	S	<p>the Near-Term 2014 plus Plan Components condition even though the overall delay of the intersection was reduced. Therefore, this potential FPDA mitigation measure could be considered as a partial mitigation measure, under the Near-Term 2014 plus Plan Components conditions.</p>	SU
		<p><u>Mitigation Measure TR-1f:</u> At the intersection of Bayfront Expressway and Willow Road, the necessary mitigation measure is to add a third right turn lane for the eastbound approach on Willow Road.</p> <p>With the mitigation measure, the intersection still operates at LOS F during the PM peak hour, but the delay for the most critical movements are reduced to be less than under 2014 plus Plan Components condition. According to the FECPDA, Facebook is responsible for implementing this mitigation measure. However, since this intersection is under Caltrans jurisdiction and the City cannot guarantee implementation of the mitigation measure.</p>	
	S	<p><u>Mitigation Measure TR-1g:</u> At the intersection of Bayfront Expressway and Marsh Road, the necessary mitigation measure is to re-stripe the southbound approach on Bayfront Expressway from one shared left turn/through lane, one through lane and one right turn lane to one left turn/through lane, one through/right turn lane and one right turn lane and to add a third right turn lane for the eastbound approach on Marsh Road.</p>	SU
		<p>With the mitigation measure, the intersection operates at LOS D during both AM and PM peak hours, under the Near-Term 2014 plus Plan Components conditions. However, this intersection is included in the City's TIF Program and the improvements to each approach may appear feasible in the existing right-of-way. Since the intersection is under Caltrans jurisdiction, the City cannot guarantee implementation of the mitigation measure.</p>	

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TABLE 2-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES (CONTINUED)

Significant Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
TR-1 <i>continued</i>	S	<p><u>Mitigation Measure TR-1h:</u> At the intersection of US 101 NB Ramps and Marsh Road, the necessary mitigation measure is to widen the northbound off-ramp on the western side of the approach and add an additional left-turn lane along with adding a second right-turn lane by restriping one of the existing left-turn lanes. This improvement will require relocation of existing traffic signal poles, utility relocation, and reconstruction of the curb ramp on the southwest corner of the intersection.</p> <p>With the mitigation measure, the intersection operates at LOS D during the AM peak hour, under the Near-Term 2014 plus Plan Components conditions. According to the FECPDA, Facebook is responsible for implementing this mitigation measure. However, since this intersection is under Caltrans jurisdiction, the City cannot guarantee implementation of the mitigation measure.</p>	SU
<p>Impact TR-2: 2035 Plus Plan Components Condition. EA Study Area intersections would have significant impacts with the addition of project trips to 2035 plus Plan Components Condition during the AM or PM peak hours.</p>	S	<p><u>Mitigation Measure TR-2a:</u> At the intersection of Addison Wesley and Sand Hill Road, the necessary mitigation measure is to restripe the eastbound approach on Sand Hill Road from one left turn lane, two through lanes and one right turn lane to one left turn lane, two through lanes and one shared through/right turn lane. One additional receiving lane on Sand Hill Road is recommended to be added accordingly. A bike lane currently exists between the right-most through lane and the right turn lane.</p> <p>With the mitigation measure, the intersection level of service improves to LOS B during the AM peak hour, under the 2035 plus Plan Components conditions. However, the improvements may not be feasible due to right-of-way constraints affecting private property. In addition, the re-striping for the eastbound approach is not be feasible since this could result in increased safety hazards to bicyclist by placing bicyclists between two through lanes.</p>	

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TABLE 2-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES (CONTINUED)

Significant Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
TR-2 <i>continued</i>	S	<p><u>Mitigation Measure TR-2b:</u> At the intersection of Sharon Park Drive and Sand Hill Road, the necessary mitigation measure is to add one exclusive westbound right turn lane on Sand Hill Road.</p> <p>With the mitigation measure, the intersection level of service improves to LOS D during the PM peak hour, under the 2035 plus Plan Components conditions. However, the improvements may not be feasible due to right-of-way constraints and the presence of a dozen mature evergreen trees. Even though this impact remains <i>significant and unavoidable</i>, it should be noted that the width of the westbound bike lane of 10.5 feet enables this lane to function as a right turn lane in compliance with the California Manual on Uniform Traffic Control Devices (California MUTCD).</p>	SU
	S	<p><u>Mitigation Measure TR-2c:</u> At the intersection of Alpine Road/Santa Cruz Avenue and Junipero Serra Boulevard, the necessary mitigation measure is to re-stripe the northbound approach on Alpine Road from two through lanes and one right turn lane to one through lane, one shared through/right turn lane and one right turn lane. In addition, a second westbound right turn lane is recommended to be added on Junipero Serra Boulevard.</p> <p>With the mitigation measure, the intersection level of service improves to LOS D during the AM peak hour, under the 2035 plus Plan Components conditions; and remains LOS E during PM peak hour, with the delay for the most critical movements reduced to be less than under the 2035 plus Plan Components conditions. However, the re-striping for the northbound approach may not be feasible since this may create a challenge by placing bicyclists between two right turn lanes and may, therefore, require further analysis for the existing bike lane.</p>	SU

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TABLE 2-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES (CONTINUED)

Significant Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
TR-2 <i>continued</i>	S	<p><u>Mitigation Measure TR-2d:</u> At the intersection of Santa Cruz Avenue and Sand Hill Road, the necessary mitigation measure is to re-stripe both westbound and eastbound approaches on Sand Hill Road from two left turn lanes, two through lanes and one right turn lane to two left turn lanes, two through lanes and one shared through/right turn lane. One additional receiving lane is recommended to be added on Sand Hill Road for the westbound direction.</p> <p>With the mitigation measure, the intersection level of service remains LOS E during the AM peak hour, with the delay for the most critical movement reduced to be less than under the 2035 plus Plan Components conditions; and improves to LOS D during the PM peak hour, under the 2035 plus Plan Components conditions. However, the improvements may not be feasible due to right-of-way constraints, with the northwest corner of the intersection under the control of San Mateo County. Also, the re-striping for the eastbound and westbound approaches may not be feasible since this could result in increased safety hazards to bicyclist by placing bicyclists between two through lanes.</p>	SU
	S	<p><u>Mitigation Measure TR-2e:</u> At the intersection of Middlefield Road and Marsh Road, the necessary mitigation measure is to add a second southbound left turn lane on Middlefield Road and to add one receiving lane on Marsh Road accordingly.</p> <p>With the mitigation measure, the intersection level of service improves to LOS D during the AM peak hour and LOS E during the PM peak hour, under the 2035 plus Plan Components conditions. However, this intersection is under the jurisdiction of Town of Atherton. Based on prior consultation with the Town of Atherton, the improvements may require covering Atherton Channel and removing numerous heritage trees.</p>	SU

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TABLE 2-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES (CONTINUED)

Significant Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
TR-2 <i>continued</i>	S	<p><u>Mitigation Measure TR-2f:</u> At the intersection of Laurel Street and Ravenswood Avenue, the necessary mitigation measure is to add one exclusive east-bound right turn lane on Ravenswood Avenue.</p> <p>With the mitigation measure, the intersection level of service improves to LOS D during the AM peak hour, under the 2035 plus Plan Component conditions.</p> <p>Both the City's TIF Program and the El Camino Real/Downtown Specific Plan project suggest the mitigation measures for this intersection, which are consistent with the necessary mitigation measure suggested for the Plan Components. However, the improvements may not be feasible due to right-of-way constraints.</p>	SU
	S	<p><u>Mitigation Measure TR-2g:</u> At the intersection of Middlefield Road and Ravenswood Avenue, the necessary mitigation measure is to add one exclusive southbound right turn lane on Middlefield Road.</p> <p>With the mitigation measure, the intersection level of service improves to LOS D during both the AM and the PM peak hours, under the 2035 plus Plan Components conditions. However, this intersection is included in the City's TIF Program and could be constructed over the long term. However, the improvements may not be feasible due to right-of-way constraints affecting private property in Atherton and would involve coordination with the Town of Atherton.</p>	SU
	S	<p><u>Mitigation Measure TR-2h:</u> At the intersection of Middlefield Road and Willow Road, the necessary mitigation measure is to re-stripe the northbound approach on Middlefield Road from one left turn lane, two through lanes and one right turn lane to one left turn lane, one through lane, one shared through/right turn lane and one right turn lane.</p> <p>With the mitigation measure, the intersection level of service remains LOS F during both the AM and the PM peak hours, with the delay for the most critical movement reduced to be less than under the 2035 plus Plan Components</p>	LTS

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TABLE 2-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES (CONTINUED)

Significant Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
TR-2 <i>continued</i>		conditions. According to the 1601 Willow Road Development Agreement for the Facebook East Campus Project (FECPPDA), Facebook is responsible for implementing this necessary mitigation measure.	
	S	<p><u>Mitigation Measure TR-2i:</u> At the intersection of Gilbert Avenue and Willow Road, the necessary mitigation measure is to add one exclusive eastbound right turn lane and a second westbound left turn lane on Willow Road and to add one additional receiving lane on Gilbert Avenue accordingly.</p> <p>With the mitigation measure, the intersection level of service improves to LOS D during the AM peak hour, under the 2035 plus Plan Components conditions; and remains LOS E during the AM peak hour, with the delay for the most critical movement reduced to be less than under the 2035 plus Plan Components conditions. However, the improvements may not be feasible due to right-of-way constraints due to impacts to private property.</p>	SU
	S	<p><u>Mitigation Measure TR-2j:</u> At the intersection of Coleman Avenue and Willow Road, the necessary mitigation measure is to add one exclusive southbound left turn lane on Coleman Avenue and a second eastbound through lane on Willow Road and to add one receiving lane on Willow Road accordingly.</p> <p>With the mitigation measure, the intersection level of service improves to LOS C during the AM peak hour and LOS D during the PM peak hour, under the 2035 plus Plan Components conditions. The installation of one exclusive southbound left turn lane on Coleman Avenue may be accomplished in the existing right-of-way by re-striping work, but it may require the removal of one or two parking spaces.</p> <p>The other improvements to Willow Road do not appear feasible due to right-of-way constraints affecting private property. Although the restriping on Coleman would partially mitigate the impact, this impact remains <i>significant and unavoidable</i>.</p>	SU

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TABLE 2-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES (CONTINUED)

Significant Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
TR-2 <i>continued</i>	S	<p><u>Mitigation Measure TR-2k</u>: At the intersection of Durham Street/VA Driveway and Willow Road, the necessary mitigation measure is to add one exclusive westbound right turn lane on Willow Road.</p> <p>With the mitigation measure, the intersection level of service improves to LOS D during the PM peak hour, under the 2035 plus Plan Components conditions. The improvements does not appear feasible due to right-of-way constrains. Therefore, this impact remains <i>significant and unavoidable</i>.</p> <p>It should be noted that the El Camino Real/Downtown Specific Plan project also suggests a mitigation measure for this intersection, which includes adding a southbound left turn at the VA Driveway. With this mitigation measure, the intersection still operates at LOS E during the PM peak hour, with the delay for the southbound left turn and the westbound through critical movements about 11 seconds higher than under the 2035 plus Plan Components conditions. However, the average delay for the intersection, as well as the delay of the critical movements, is all reduced by about 1 to 3 seconds, compared to without any mitigation measures under the 2035 plus Plan Components conditions. Therefore, this potential El Camino Real/Downtown Specific Plan mitigation measure could be considered as a partial mitigation measure.</p>	SU
	S	<p><u>Mitigation Measure TR-2l</u>: At the intersection of Bay Road and Marsh Road, the necessary mitigation measure is to add one exclusive eastbound right turn lane on Marsh Road.</p> <p>With the mitigation measure, the intersection level of service improves to LOS D during the AM peak hour, under the 2035 plus Plan Components conditions. However, the improvements are not feasible due to right-of-way constraints and would require the approval of the County of San Mateo and Town of Atherton.</p>	SU

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TABLE 2-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES (CONTINUED)

Significant Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
TR-2 <i>continued</i>	S	<p><u>Mitigation Measure TR-2m:</u> At the intersection of Bohannon Drive/Florence Street and Marsh Road, the necessary mitigation measure is to add one exclusive westbound right turn lane on Marsh Road.</p> <p>With the mitigation measure, the intersection level of service improves to LOS D during the AM peak hour and LOS E during the PM peak hour, under the 2035 plus Plan Components conditions. Through the Development Agreement for the Menlo Gateway Project (MGDA), Bohannon Development Agreement is responsible for implementing the necessary mitigation measure. Therefore, after applying the mitigation measures, this impact is <i>less than significant</i>.</p>	LTS
	S	<p><u>Mitigation Measure TR-2n:</u> At the intersection of Scott Drive/Rolison Road and Marsh Road, with the necessary mitigation measures suggested for the Near-Term 2014 plus Plan Components conditions (Mitigation Measure TR-1d), the intersection level of service remains LOS E during the AM peak hour and LOS F during the PM peak hours, and the delay for the critical movement was reduced to be lower than under the 2035 plus Plan Components conditions during the PM peak hour; however, during the AM peak hour, the westbound left turn critical movement delay is 54 seconds higher than under the Cumulative conditions. Therefore, such mitigation measures could only be considered as partial mitigation.</p> <p>Under the 2035 plus Plan Components condition, the necessary mitigation measure is to add one exclusive westbound right turn lane on Marsh Road.</p> <p>With the mitigation measure, the intersection level of service improves to LOS D during the AM peak hour, under the 2035 plus Plan Components conditions; and remains LOS F during the PM peak hour, with the delay for the most critical movement reduced to be less than under the 2035 plus Plan Components conditions. The improvements may appear feasible in the existing right-of-way, but the intersection is under both City and Caltrans jurisdiction and coordination between the two jurisdictions would be required. As such, the City cannot guarantee implementation of the mitigation measure.</p>	SU

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TABLE 2-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES (CONTINUED)

Significant Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
<i>TR-2 continued</i>	S	<p><u>Mitigation Measure TR-2o</u>: At the intersection of I-280 NB Off Ramp/Sand Hill Circle and Sand Hill Road, the necessary mitigation measure is to add one exclusive westbound left turn lane and a third eastbound through lane on Sand Hill Road. In addition, one additional receiving lane is recommended to be added on Sand Hill Road accordingly.</p> <p>With the mitigation measure, the intersection level of service improves to LOS C for the south part of the intersection of I-280 NB Off Ramp and Sand Hill Road, during the AM peak hour, under the 2035 plus Plan Components conditions; and remains LOS F for the north part of the intersection of Sand Hill Circle and Sand Hill Road during the PM peak hour, with the delay for the most critical movement reduced to be less than under the 2035 plus Plan Components conditions. However, the improvements may not be feasible due to right-of-way constraints and would require the approval of Caltrans.</p>	SU
	S	<p><u>Mitigation Measure TR-2p</u>: At the intersection of El Camino Real and Valparaiso Avenue/Glenwood Avenue, the necessary mitigation measure is to add one exclusive westbound right turn lane on Glenwood Avenue.</p> <p>With the mitigation measure, the intersection level of service remains LOS E during the PM peak hour, with the delay for the most critical movement reduced to be less than under the 2035 plus Plan Components conditions. This intersection is included in the City's TIF program, and improvements could be constructed over time. However, the improvements may not be feasible in the short term due to right-of-way constraints. In addition, this intersection is under Caltrans jurisdiction.</p>	SU
	S	<p><u>Mitigation Measure TR-2q</u>: At the intersection of El Camino Real and Ravenswood Avenue/Menlo Avenue, the necessary mitigation measure is to add one exclusive eastbound right turn lane on Menlo Avenue.</p>	SU

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TABLE 2-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES (CONTINUED)

Significant Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
TR-2 <i>continued</i>		<p>With the mitigation measure, the intersection level of service improves to LOS E during the A.M peak hour, under the 2035 plus Plan Components conditions; and remains LOS F during the PM peak hour, with the delay for the most critical movement reduced to be less than under the 2035 plus Plan Components conditions. This intersection is included in the City’s TIF program and improvements could be constructed over time. However, the improvements may not be feasible in the short term due to right-of-way constraints. In addition, this intersection is under Caltrans jurisdiction.</p>	
	S	<p><u>Mitigation Measure TR-2r:</u> At the intersection of El Camino Real and Middle Avenue, the necessary mitigation measure is to add one exclusive southbound right turn lane and a second northbound left turn lane on El Camino Real.</p>	SU
		<p>With the mitigation measure, the intersection level of service remains LOS F during the PM peak hour, with the delay for the most critical movement reduced to be less than under the 2035 plus Plan Components conditions. The City’s TIF program includes this intersection and suggests the same intersection improvements. However, these improvements may not be feasible due to right-of-way constraints. In addition, this intersection is under Caltrans jurisdiction.</p>	
S	<p><u>Mitigation Measure TR-2s:</u> At the intersection of Bay Road and Willow Road, the necessary mitigation measure is to re-stripe the southbound approach from one left turn lane and one right turn lane to one left turn lane and one shared left turn/right turn lane.</p>	SU	
	<p>With the mitigation measure, the intersection level of service improves to LOS C during the AM peak hour, under the 2035 plus Plan Components conditions. However, since this intersection is under Caltrans jurisdiction, this impact remains <i>significant and unavoidable</i>.</p>		

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TABLE 2-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES (CONTINUED)

Significant Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
TR-2 <i>continued</i>	S	<p><u>Mitigation Measure TR-2t</u>: At the intersection of Newbridge Street and Willow Road, the necessary mitigation measure is to re-stripe the southbound approach on Newbridge Street from one left turn lane, one through lane and one right-turn lane to one shared left turn/through lane, one shared through/right turn lane and one right turn lane, and to add one additional receiving lane on the south leg on Newbridge Street accordingly.</p> <p>With the mitigation measure, the intersection remains LOS F during both the AM and PM peak hours, with the delay for the most critical movement reduced to be less than under the 2035 plus Plan Components conditions. However, the improvements may not be feasible due to right-of-way constrains on the south leg of the intersection, which would impact private property in East Palo Alto. In addition, this intersection is under Caltrans jurisdiction, and the City cannot guarantee implementation of the mitigation measure. Therefore, this impact remains <i>significant and unavoidable</i>.</p> <p>It should be noted that FPDA also suggests a mitigation measure for this intersection, which includes an additional eastbound left-turn lane, an additional northbound receiving lane for the eastbound left turning traffic, an additional westbound through/right-turn lane, and an additional receiving lane for the westbound through traffic. With this mitigation measure, the intersection still operates at LOS F during both the AM and PM peak hours. The delay for the most critical movements are reduced to be less than under the 2035 plus Plan Components conditions during the PM peak hour; however, during the AM peak hour, the delay for the eastbound through critical movement was over 100 seconds higher than under the Cumulative condition even though the overall delay of the intersection was reduced. Therefore, this potential Facebook mitigation measure could be considered as a partial mitigation measure, under the 2035 plus Plan Components conditions.</p>	SU

LTS = Less Than Significant S = Significant SU = Significant Unavoidable Impact

TABLE 2-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES (CONTINUED)

Significant Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
TR-2 <i>continued</i>	S	<p><u>Mitigation Measure TR-2u:</u> At the intersection of Hamilton Avenue and Willow Road, the necessary mitigation measure is to add one exclusive southbound right turn lane on Hamilton Avenue and a second eastbound left turn lane on Willow Road and to add one receiving lane on Hamilton Avenue.</p> <p>With the mitigation measure, the intersection level of service improves to LOS C during both the AM and PM peak hours, under the 2035 plus Plan Components conditions. The installation of one exclusive southbound right turn lane on Hamilton Avenue may be done by re-striping work, but it would require the removal of on-street parking spaces. Since the other improvements along Willow Road may not be feasible due to right-of-way constraints and the intersection is under Caltrans jurisdiction, this impact remains <i>significant and unavoidable</i>.</p>	SU
	S	<p><u>Mitigation Measure TR-2v:</u> At the intersection of Bayfront Expressway and Willow Road, the necessary mitigation measure is to add a third right turn lane on Willow Road.</p> <p>With the mitigation measure, the intersection still operates at LOS F, but the delay for the most critical movements are reduced to be less than under the 2035 plus Plan Components conditions. According to the FECPPDA, Facebook is responsible for implementing this mitigation measure. However, since this intersection is under Caltrans jurisdiction and the City cannot guarantee implementation of the mitigation measure, this impact remains <i>significant and unavoidable</i>.</p>	SU
	S	<p><u>Mitigation Measure TR-2w:</u> At the intersection of Bayfront Expressway and Marsh Road, the necessary mitigation measure is to re-stripe the southbound approach on Bayfront Expressway from one shared left turn/through lane, one through lane and one right turn lane to one left turn/through lane, one through/right turn lane and one right turn lane and to add a third right turn lane for the eastbound approach on Marsh Road.</p>	SU

LTS = Less Than Significant S = Significant SU = Significant Unavoidable Impact

TABLE 2-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES (CONTINUED)

Significant Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
TR-2 <i>continued</i>		<p>With the mitigation measure, the intersection level of service improves to LOS E during both the AM and PM peak hours, under the 2035 plus Plan Components conditions. However, this intersection is included in the City’s TIF Program and the improvements to each approach may appear feasible in the existing right-of-way. Since the intersection is under Caltrans jurisdiction, the City cannot guarantee implementation of the mitigation measure. Therefore, this impact remains <i>significant and unavoidable</i>.</p>	
	S	<p><u>Mitigation Measure TR-2x:</u> At the intersection of US 101 SB Ramps and Marsh Road, the necessary mitigation measure is to add one southbound shared left turn/right turn lane on US 101 SB ramp and one additional receiving lane on Marsh Road accordingly.</p>	SU
		<p>With both mitigation measures, the intersection level of service improves to LOS E during the AM peak hour and LOS D during the PM peak hour, under the 2035 plus Plan Components conditions. However, the improvements may not be feasible due to right-of-way requirements. In addition, this intersection is under Caltrans jurisdiction.</p>	
	S	<p><u>Mitigation Measure TR-2y:</u> At the intersection of US 101 NB Ramps and Marsh Road, the necessary mitigation measure is to widen the northbound off-ramp on the western side of the approach and add an additional left-turn lane along with adding a second right-turn lane by restriping one of the existing left-turn lanes. This improvement will require relocation of existing traffic signal poles, utility relocation, and reconstruction of the curb ramp on the southwest corner of the intersection.</p>	SU
		<p>This mitigation measure is suggested for the Near-Term 2014 plus Plan Components conditions (Mitigation Measure TR-1h), which according to the FECPDA, Facebook is responsible for implementing. With this mitigation measure, the intersection level of service remains LOS F during both the AM and PM peak hours, and the delay for the northbound left turn and the</p>	

LTS = Less Than Significant S = Significant SU = Significant Unavoidable Impact

TABLE 2-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES (CONTINUED)

Significant Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
<i>TR-2 continued</i>		<p>eastbound through critical movements is about 23 seconds and 14 seconds higher than under the Cumulative conditions, during the AM peak hour and PM peak hour, respectively. Therefore, such mitigation measures could only be considered as partial mitigation.</p> <p>Under the 2035 plus Plan Components conditions, in addition to the mitigation measures suggested for the Near-Term 2014 plus Plan Components conditions, the additional necessary mitigation measure is to add a third eastbound through lane on Marsh Road and an additional receiving lane on Marsh Road would be necessary as well.</p> <p>With the mitigation measure, the intersection level of service improves to LOS C during the AM peak hour and LOS B during the PM peak hour, under the 2035 plus Plan Components conditions. However, the improvements may not be feasible due to right-of-way requirements. In addition, this intersection is under Caltrans jurisdiction and the City cannot guarantee implementation of the mitigation measure.</p>	
<p>Impact TR-3: Roadway segment impacts under Near-Term 2014 plus Plan Components conditions would exceed City thresholds.</p>	S	<p><u>Mitigation Measure TR-3:</u> Measures for roadway segment impacts under Near-Term 2014 plus Plan Components conditions would require reducing traffic volumes and improving quality of life and could include transportation demand management (TDM) measures. Such measures may include encouraging car-pooling and vanpooling, promoting transit and bicycle/pedestrian mode shares, etc. Even though such TDM measures collectively have the potential to reduce added future development trip totals to less than significant levels, the City cannot guarantee that these measures may be implemented and may reduce the impacts to less than significant.</p>	SU

LTS = Less Than Significant S = Significant SU = Significant Unavoidable Impact

TABLE 2-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES (CONTINUED)

Significant Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
Impact TR-4: Freeway segment impacts under Near-Term 2014 plus Plan Components conditions would exceed City thresholds.	S	<u>Mitigation Measure TR-4:</u> The mitigation measure for freeway segments under Near-Term 2014 plus Plan Components conditions normally requires adding additional travel lanes and increasing the capacity of the roadway, to accommodate the additional trips generated by the Plan Components. However, widening roadways/adding additional travel lanes would require right-of-way and may not be feasible. In addition, SR 84 is under Caltrans jurisdiction.	SU
Impact TR-5: Roadway segment impacts under 2035 Plus Plan Components conditions would exceed City thresholds.	S	<u>Mitigation Measure TR-5:</u> The mitigation measures for roadway segment impacts under 2035 Plus Plan Components conditions would require reducing traffic volumes and improving quality of life and could include TDM measures. Such measures may include encouraging carpooling and vanpooling, promoting transit and bicycle/pedestrian mode shares, etc. Even though such TDM measures collectively have the potential to reduce added project trip totals to less than significant levels, the City cannot guarantee that these measures may be implemented and may reduce the impacts to less than significant.	SU
Impact TR-6: Freeway segment impacts under 2035 Plus Plan Components conditions would exceed City thresholds.	S	<u>Mitigation Measure TR-6:</u> The mitigation measure for freeway segments under 2035 Plus Plan Components conditions normally requires adding additional travel lanes and increasing the capacity of the roadway, to accommodate the additional trips generated by the Plan Components. However, widening roadways/adding additional travel lanes would require right-of-way and may not be feasible. In addition, SR 84 is under Caltrans jurisdiction.	SU

LTS = Less Than Significant S = Significant SU = Significant Unavoidable Impact

CITY OF MENLO PARK
HOUSING ELEMENT UPDATE, GENERAL PLAN CONSISTENCY UPDATE,
AND ZONING ORDINANCE AMENDMENTS ENVIRONMENTAL ASSESSMENT
REPORT SUMMARY

3 PROJECT DESCRIPTION

This chapter of the Environmental Assessment (EA) describes the proposed Housing Element Update, General Plan Consistency Update, and associated Zoning Ordinance amendments, together referred to as the “Plan Components,” and the processes that created them. It also describes the potential future development associated with the Plan Components.

This EA has been prepared in accordance with California Government Code Section 65759(a)(2), which states that when bringing a General Plan, including the Housing Element, into compliance with a court order, a local agency shall prepare an environmental assessment, the content of which shall substantially conform to the required content of a Draft Environmental Impact Report (EIR).

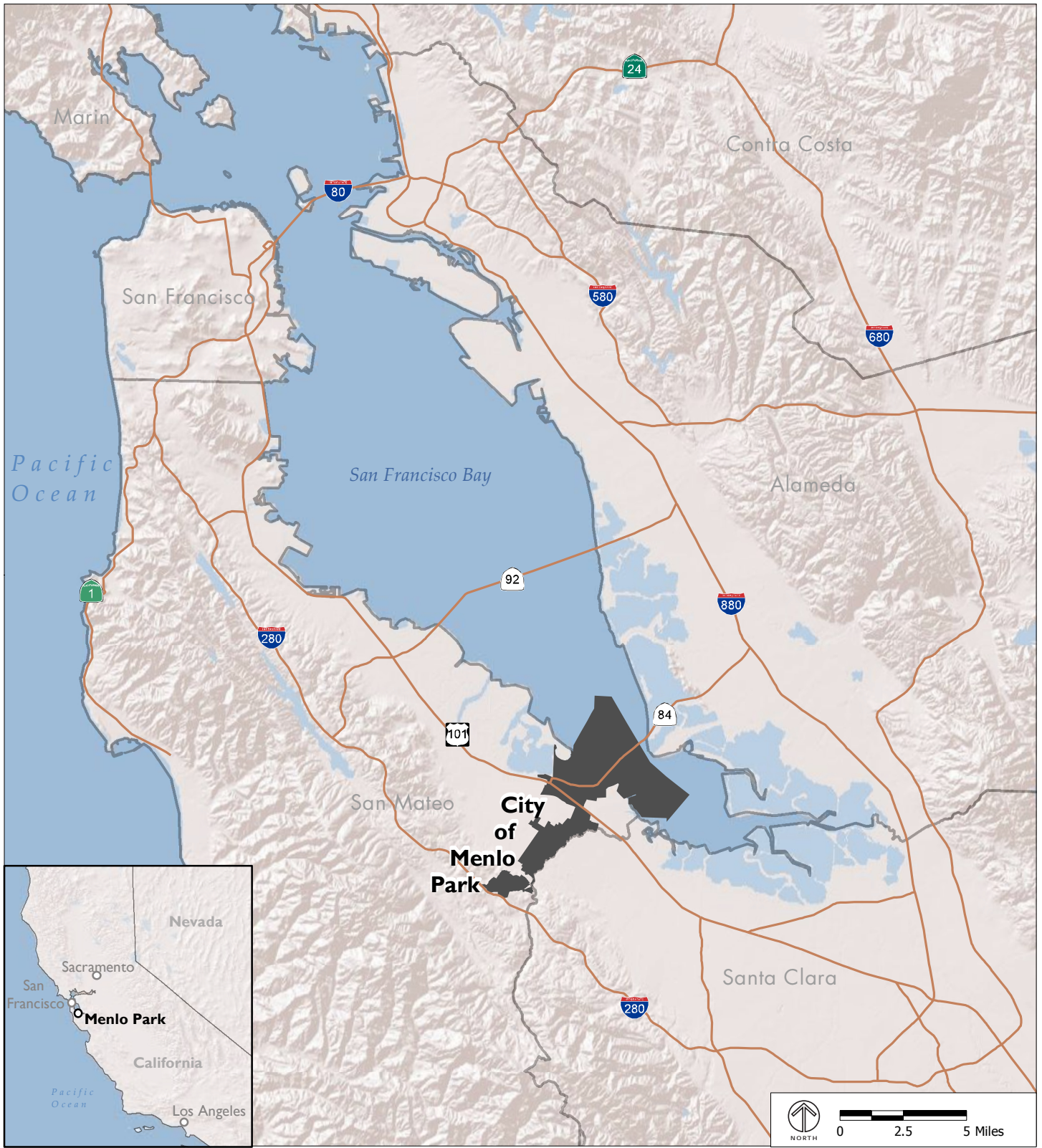
In compliance with the California Environmental Quality Act (CEQA), this EA describes the potential programmatic environmental impacts associated with implementation of the Plan Components.¹ The City of Menlo Park (City) is the lead agency for the environmental review of the Plan Components.

A. Menlo Park Location and Setting

Figure 3-1 shows Menlo Park’s regional location. Menlo Park is located in the San Francisco Bay Area, in San Mateo County. Menlo Park is situated near the southern end of the San Francisco Bay Peninsula, approximately halfway between San Francisco and San Jose. The City is bordered by Atherton and Redwood City to the north-northwest; the San Francisco Bay to the north-northeast; East Palo Alto to the east; Palo Alto to the south-southeast; and Woodside, Ladera, and Portola Valley to the south-southwest. The City covers approximately 18 square miles, of which approximately 12 square miles consist of San Francisco Bay and wetlands.

¹ As described in Section 15168 of the CEQA Guidelines, *program-level* environmental review documents are appropriate when a project consists of a series of actions related to the issuance of rules, regulations, and other planning criteria. The project that is the subject of this EA consists of long-term plans that will be implemented as policy documents guiding future development activities and City actions. Because this is a program-level EA, this document does not evaluate the impacts of specific, individual developments that may be allowed under the Housing Element, General Plan, and Zoning Ordinance. Future specific projects may require separate environmental review.

CITY OF MENLO PARK
HOUSING ELEMENT UPDATE, GENERAL PLAN CONSISTENCY UPDATE, AND
ZONING AMENDMENTS
PROJECT DESCRIPTION



Source: City of Menlo Park; The Planning Center | DC&E, 2012; ESRI 2010; FHA 2002.

- Highway
- City Limits

FIGURE 3-1
REGIONAL LOCATION

The Menlo Park sphere of influence (SOI) includes incorporated City lands and those areas which may be considered for future annexation by the City. The Menlo Park SOI is regulated by the San Mateo Local Agency Formation Commission (LAFCo), which determines the unincorporated communities that would be best and most likely served by city agencies and hence, represent areas with the greater potential for annexation by the City. Once property is annexed into the City, future development is subject to the standards prescribed by the City's General Plan, Municipal Code, and other City regulations.

The SOI designation for the City includes unincorporated West Menlo Park, Week End Acres, Menlo Oaks, as well as the Stanford Linear Accelerator. The potential future development under the Plan Components does not include potential housing outside the City Limits; however, for the purposes of this environmental review the City's SOI defines the EA Study Area boundaries.

Interstate 280 and Highway 101 provide north-south access to San Francisco to the north and San Jose to the south. For purposes of this document, State Route 82 also runs north-south through the City. State Route 84 provides access to the East Bay across the Dumbarton Bridge, which touches down at its western end in Menlo Park. A Caltrain station is located in downtown Menlo Park, with service to San Francisco and San Jose. The City is shown in its local context in Figure 3-2.

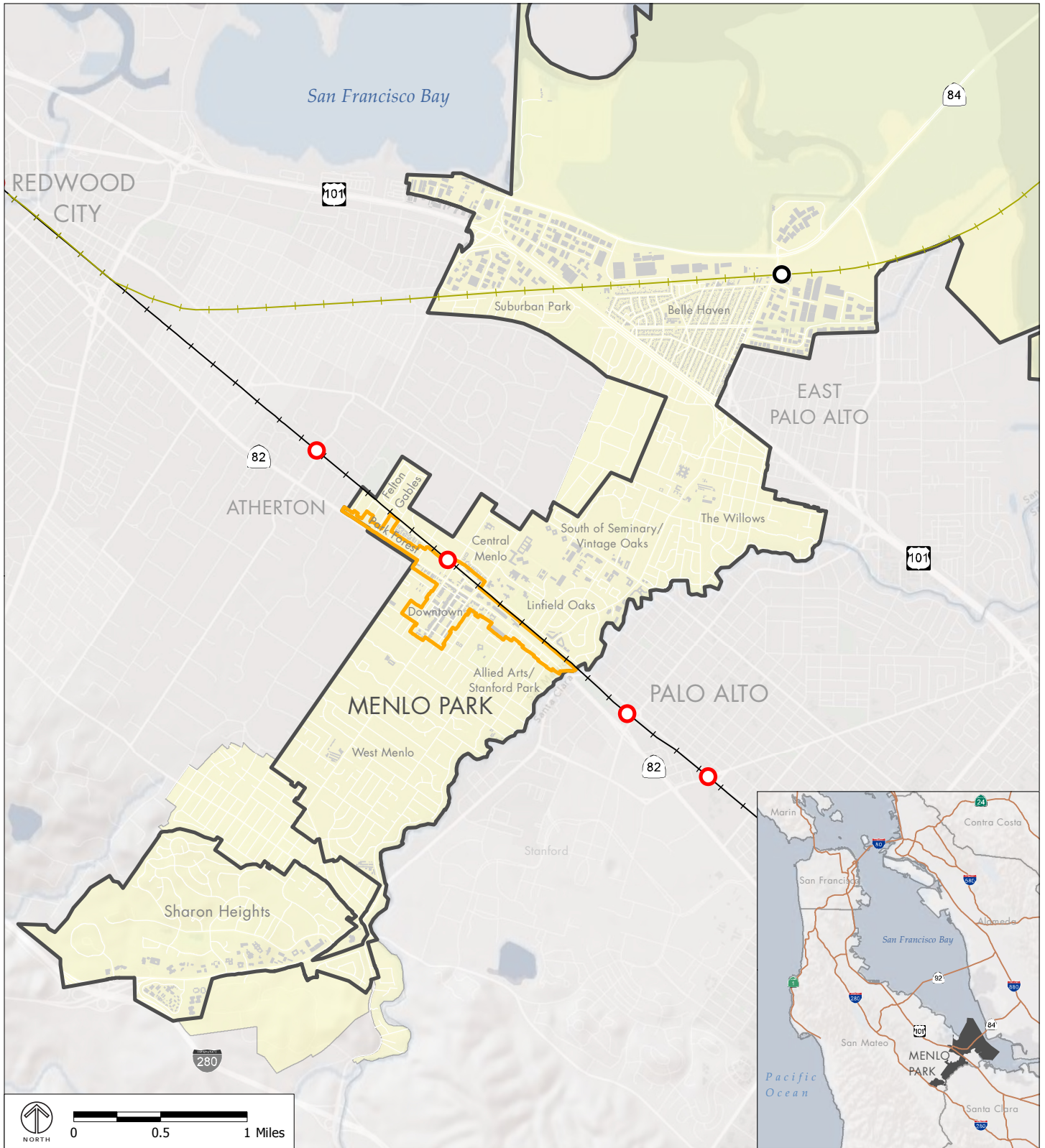
In 2012 the population of Menlo Park was approximately 32,513 people and 12,388 households in Menlo Park with an average household size of 2.55 people.²

B. Plan Component Objectives

The overall focus of the Housing Element is to enhance community life, character, and vitality through the provision of adequate housing opportunities for people at all income levels, while being sensitive to the small-town character of Menlo Park. The following are the specific objectives for the Plan Components:

- “ **Ensure Overall Community Quality of Life:** Develop a vision for Menlo Park that supports sustainable local, regional, and State housing, transportation, and environmental goals, while maintaining the high quality of life, small town feel, and village character of Menlo Park, which make it distinctive and enjoyable to its residents.

² State of California, Department of Finance, 2012. *E-5 Population and Housing Estimates for Cities, Counties, and the State, January 2011 and 2012, with 2010 Benchmark*. Sacramento, California.



Source: City of Menlo Park; The Planning Center | DC&E, 2012; ESRI 2010; FHA 2002.

- CalTrain Stations
- Potential Station Location
- Dumbarton Rail Corridor
- CalTrain ROW
- El Camino Real/Downtown Specific Plan
- City Limits
- Sphere of Influence

FIGURE 3-2

- “ **Address Housing Needs:** Assess housing needs and provide a vision for housing within the City to satisfy the needs of a diverse population to comply with State law and provide the City’s regional fair share of land available for residential development.
- “ **Provide a Variety of Housing Choices:** Provide a variety of housing opportunities proportionally by income to accommodate the needs of people who currently work or live in Menlo Park, such as teachers, young people just getting started, and seniors who want to down-size, who either cannot find homes or cannot afford market-rate housing in Menlo Park.
- “ **Address the City’s Share of Regional Housing Needs:** Ensure General Plan and Zoning capacity for an adequate number of new housing units to meet the Regional Housing Need Allocation (RHNA) at all income levels for the current (2007 to 2014) and prior (1999 to 2006) planning periods.
- “ **Ensure New Development Compatibility:** Ensure that development of new housing is sensitive to and compatible with adjacent neighborhoods.
- “ **Preserve Existing Housing:** Maintain the existing housing stock.
- “ **Provide Effective Housing Policies and Programs:** Continue existing and develop new programs and policies to meet the projected affordable housing need, including the needs of persons living with disabilities and other special needs households at extremely low, very low, low, and moderate income levels.
- “ **Remove Constraints that Unduly Impact Housing Development:** Evaluate potential constraints to housing development and encourage new housing in locations supported by existing or planned infrastructure, while maintaining existing neighborhood character.
- “ **Ensure Appropriate Zoning for Special Needs Housing:** Provide housing for seniors, person living with disabilities, female-headed households, large families, homeless, and other persons with special housing needs, including zoning for emergency shelter, transitional, and supportive housing opportunities.
- “ **Provide Design Guidance for New Development to Fit with Community Character:** Develop design guidelines or similar tools to ensure development of housing for all income levels while maintaining community character.
- “ **Provide Adequate Sites for Higher Density Housing Consistent with the City’s RNHA Requirements:** Identify appropriate housing sites, within specified areas proximate to transportation, shopping, and schools, and the accompanying zoning required to accommodate housing development for higher density residential development and to encourage affordable housing development.

- “ **Comply with the Settlement Agreement:** Present a Housing Element that meets the requirements of the Settlement Agreement and is completed within the timeframe established in the Settlement Agreement.
- “ **Achieve Housing Element Certification:** Obtain certification of the City’s Housing Element by the State’s Department of Housing and Community Development as substantially in compliance with State Housing Element law.
- “ **Assure Consistency of All General Plan Elements:** Make all elements of the General Plan consistent with the Housing Element update.
- “ **Provide Incentives to Encourage Affordable Housing:** Establish an Affordable Housing Overlay Zoning designation and other policies and programs to encourage affordable housing development.
- “ **Ensure Implementation of Housing Element and General Plan Programs:** Complete amendments to the Menlo Park Zoning Ordinance and other programs in a timely manner as defined in the Settlement Agreement and consistent with the Housing Element and the General Plan.
- “ **Implement City Actions in Support of Affordable Housing Development:** Implement policies and programs in the Housing Element in support of affordable housing, including the allocation of funds from the City’s Below Market Rate (BMR) housing fund and support of developments determined by the City to be viable for Low Income Housing Tax Credit (LIHTC) funding.

C. Planning Process

In May 2012, three housing advocacy groups, Peninsula Interfaith Action, Urban Habitat Program, and Youth United for Community Action, filed an action against the City of Menlo Park, citing the City’s failure to comply with the State law requirements regarding the Housing Element (i.e. Government Code Sections 65580 to 65589.8). The resulting Settlement Agreement requires the City to adopt a new Housing Element Update within a specific timeframe that addresses both the current (2007 to 2014) and prior (1999 to 2006) planning periods. The Settlement Agreement also sets forth requirements that the Housing Element Update include an Affordable Housing Overlay or other zoning mechanism to encourage affordable housing development and that the final Housing Element be certified by the State Department of Housing and Community Development as compliant with State law (Government Code Sections 65580-65589.8). Within 60 days of adopting the Housing Element Update, the City must complete all General Plan amendments required to make the General Plan consistent with the Housing Element and accommodate the full RHNA for the current planning period (2007 to 2014) as well as the previous planning period (1999 to

2006). Furthermore, also within 60 days of adopting the Housing Element Update, the City must take ministerial action to rezone for affordable housing on those sites and with those parameters identified in the Settlement Agreement and the Housing Element Update.

On May 22, 2012, the City Council approved the work program for the Plan Components and confirmed the membership of a Housing Element Steering Committee.³ The role of the Steering Committee was to discuss and refine the housing strategy and oversee the approach for community and stakeholder outreach. The Steering Committee met six times during the preparation of the Draft Housing Element. Four community workshops and various stakeholder interviews were conducted during the preparation of the Housing Element Update.

In October 2012, the City's Housing Commission and Planning Commission reviewed the Draft Housing Element and provided direction to the City Council for consideration of the Housing Element Update. The City Council reviewed the Draft Housing Element in October 2012, and directed City staff to submit the Draft Housing Element to the California Department of Housing and Community Development (HCD). The Draft Housing Element was submitted to HCD on October 31, 2012. The City received the comments submitted by HCD on the Draft Housing Element on December 31, 2012.

Concurrent with the preparation of the Housing Element Update, the City has prepared an associated General Plan Consistency Update and Zoning Ordinance amendments to bring these documents into consistency with the Housing Element and enable the development of housing in Menlo Park in fulfillment of the City's RHNA.

D. Summary of Major Plan Components

1. Housing Element Update

The Plan Components include a comprehensive update to the City's Housing Element, in compliance with Government Code Section 65580 *et seq.* The proposed Housing Element Update policies and programs are intended to guide the City's housing efforts through the 2007 to 2014 RHNA cycle. Under State housing law, the City's Housing Element must:

³ May 22, 2012 serves as the baseline date for the environmental analysis presented in this Environmental Assessment as that is the time the environmental analysis commenced.

- “ Identify and analyze goals, policies, quantified objectives, financial resources, and scheduled programs to maintain, preserve, improve, and develop housing.
- “ Include an assessment of existing and projected housing needs for all income levels.
- “ Identify adequate sites that will be zoned and available within the 2007 to 2014 RHNA cycle to meet the City’s RHNA for all income levels.
- “ Be submitted for HCD review and comment.

The proposed Housing Element, which includes the October 31, 2012 Draft Housing Element with additions and edits contained in the Draft Housing Element Errata reviewed by the Menlo Park City Council on December 11, 2012, is available under separate cover from the City of Menlo Park Planning Division and is also available online at Housing Element project page at www.menlopark.org. To meet its RHNA for the past two planning periods, the City needs to demonstrate that it can accommodate 1,975 units. The Housing Element calculates an “adjusted” RHNA that accounts for units that can be credited to the City based on past construction activity, current zoning, buildout of existing plans, and implementation of proposed Housing Element programs. Based on these calculations, the City has identified a need to rezone sites to accommodate an additional 500 housing units for lower income (very low income and low income) households. To meet this remaining RHNA, the City is considering 5 sites for possible rezonings with a minimum density of 30 du/ac. While the five potential housing sites would accommodate up to 894 net new dwelling units at the proposed densities, the Plan Components considered in this EA would allow up to 900 dwelling units to be rezoned amongst the five sites. Five hundred dwelling units at densities of 30 dwelling units per acre (du/ac) is required to meet RHNA requirements.⁴ The scope of this EA provides the ability for multiple sites to be rezoned to meet the affordable housing requirements for low and very-income categories, and provide opportunities for mixed-income housing within some of the sites. In addition, the Plan Components of this EA considers an additional 118 infill dwelling units around downtown and up to 300 secondary dwelling units, for a total of up to 1,318 new dwelling units. See Table 3-1 for details on the City’s ability to meet the adjusted RHNA.

⁴ To provide local governments with greater certainty and clarity in evaluating and determining what densities facilitate the development of housing that is affordable to lower-income households, statute provides two options – the City can either: (1) conduct an analysis of market demand and trends, financial feasibility and residential project experience to demonstrate the lower densities can facilitate lower income housing development; or (2) apply Government Code Section 65583.2(c)(3)(B), which allows local governments to utilize “default” density standards deemed adequate to meet the “appropriate zoning” test, which in Menlo Park’s case are sites designated at 30 units per acre or more given Menlo Park’s size and location.

As shown in Table 3-1, as part of the Plan Components the City could amend its Zoning Ordinance to accommodate up to 900 housing units and implement programs to accommodate up to 418 housing units by 2014. Although the Plan Components considers General Plan and Zoning capacity for 1,318 new units by 2014, buildout of the potential future development is based on a horizon year of 2035; therefore, this EA analyzes growth occurring between 2014 and 2035, a 21-year buildout horizon. The 2035 horizon year is generally consistent with other key planning documents, including the City/County Association of Governments of San Mateo County's Congestion Management Program 2011, the El Camino Real/Downtown Specific Plan EIR, and the City of Menlo Park's 2010 Urban Water Management Plan.

The proposed Housing Element does not consist of one or more actual development projects involving the physical construction of dwelling units, but rather provides policies and implementing programs under which new housing development would be allowed. As discussed in Chapter 1, Introduction, of this EA, the development applications for individual housing developments would be submitted separately to the City for review, and would be subject, if necessary, to separate, site-specific CEQA analysis. This EA discusses the potential development of housing sites and the adoption of related policies and programs at a programmatic level.

a. Housing Sites

As previously discussed, the potential housing would occur within the City Limits and would not extend into the Menlo Park SOI. The locations of the potential housing sites are listed on Table 3-2 and shown on Figure 3-3. The suitability of the sites was determined through an extensive process involving community workshops, public comment, discussion and direction on site evaluation criteria and potential higher density housing sites and other housing programs by the Housing Element Steering Committee, review by the City's Housing Commission and Planning Commission, and then direction provided by the Menlo Park City Council. Figures 3-4 through 3-8 show an aerial photograph of each of the five potential housing sites and their adjacent land uses.

While this EA discusses the impacts of five housing sites, infill units around downtown, and second units throughout the City totaling 1,318 potential dwelling units, the technical analysis prepared for the EA considered the same total units distributed over 14 housing site locations. A map showing the 14 housing sites is provided in Appendix B.

TABLE 3-1 ABILITY TO MEET THE REGIONAL HOUSING NEEDS ALLOCATION

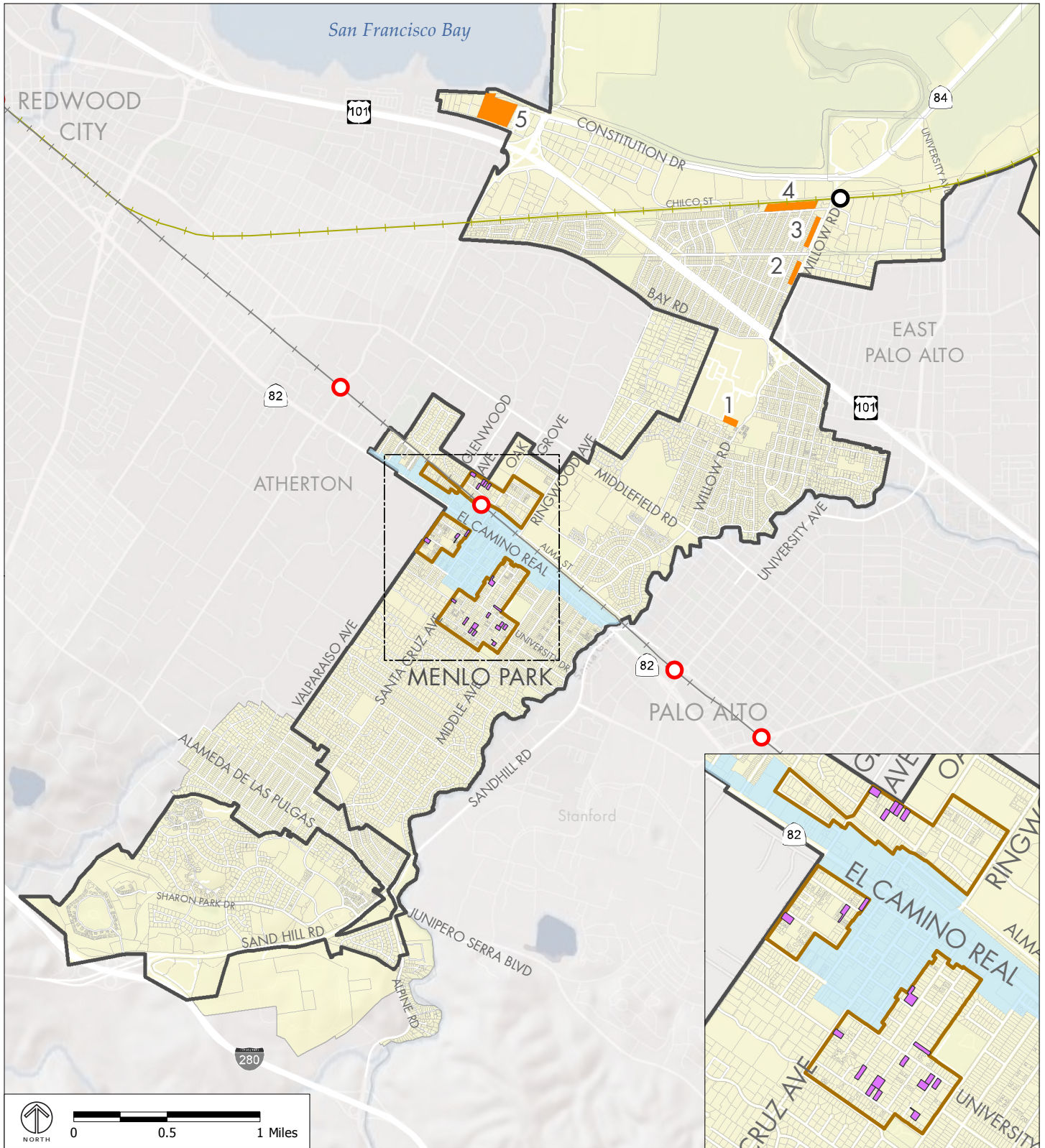
Category	Dwelling Units	
	Total	Lower-Income ^a
RHNA Planning Period		
1999 to 2006	982	274
2007 to 2014	993	389
Total RHNA	1,975	663
City's Progress Toward Its RHNA		
Units Built 1999 to 2012	295	3
Second Units Built or Approved, 1999 to 2012	8	6
Available Sites under Existing Zoning	600	0
El Camino Real/Downtown Specific Plan Zoning	680	200
Total Progress Toward RHNA	1,583	209
Adjusted RHNA (1999 to 2014 RHNA – Progress Toward RHNA)	392	454
Proposed Buildout		
Housing Site Rezoning	900	500
Housing Programs		
Infill Units Around Downtown*	118	0
Second Units**	300	210
Total Units under Housing Program	418	210
Total	1,318	710
Buildout Amount over Adjusted RHNA	926	256

^a Lower income units include units with very low and low income households, and is a subset of the total figure.

*Accounts for infill housing sites of lots 10,000 square feet or greater.

** Accounts for 6 percent of single-family lots 6,000 square feet or greater.

Source: City of Menlo Park, 2012.



Source: City of Menlo Park; The Planning Center | DC&E, 2012; ESRI 2010; FHA 2002.

- Potential Station Location
- CalTrain Stations
- Dumbarton Rail Corridor
- Lots with Additional Housing Unit Potential
- Infill Areas around Downtown
- El Camino Real/Downtown Specific Plan
- Potential Sites to be Studied for Rezoning to Higher Density
- City Limits
- Sphere of Influence

FIGURE 3-3

HOUSING AND INFILL SITES



FIGURE 3-4
AERIAL PHOTOGRAPH OF SITE 1

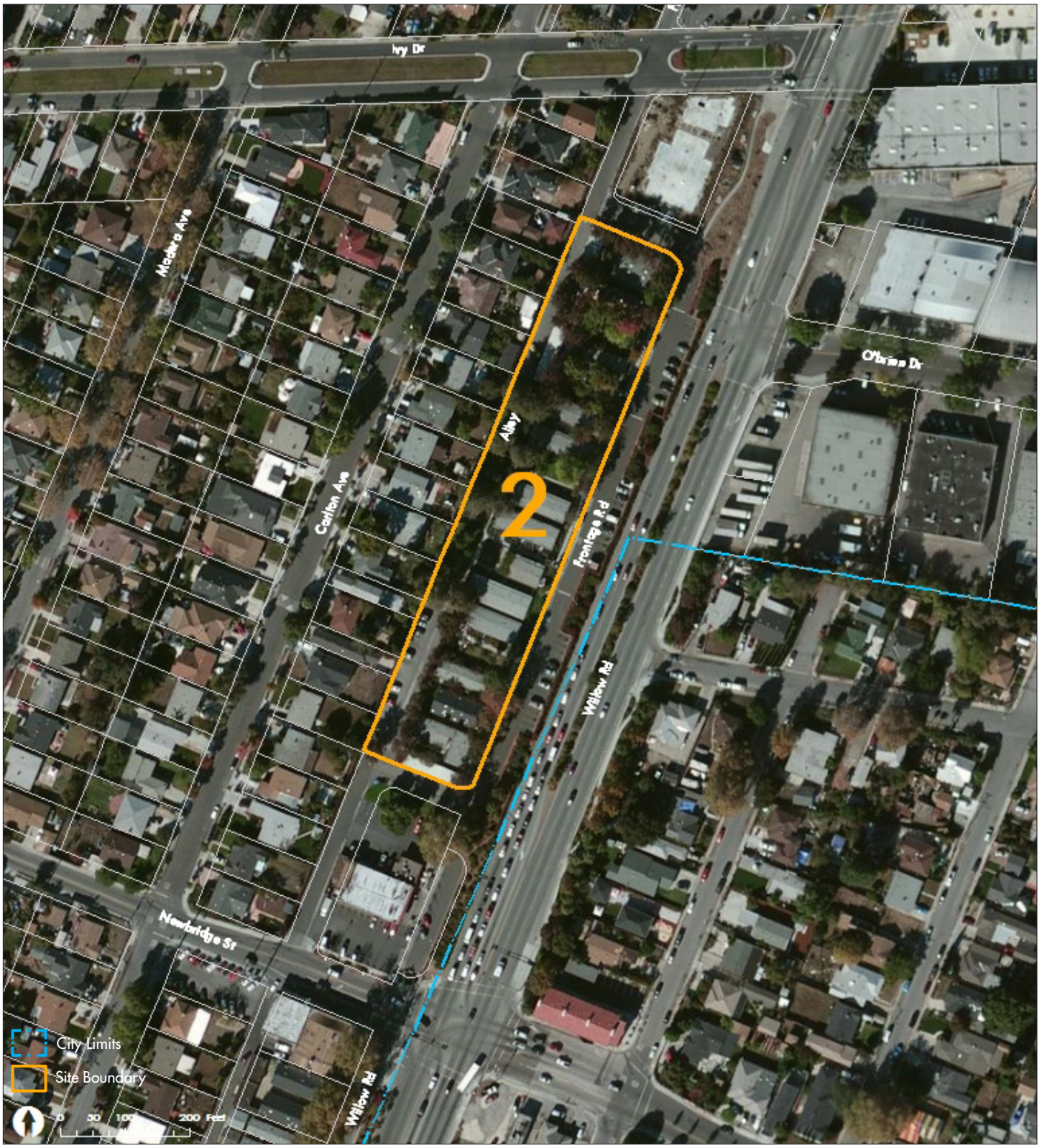


FIGURE 3-5
AERIAL PHOTOGRAPH OF SITE 2

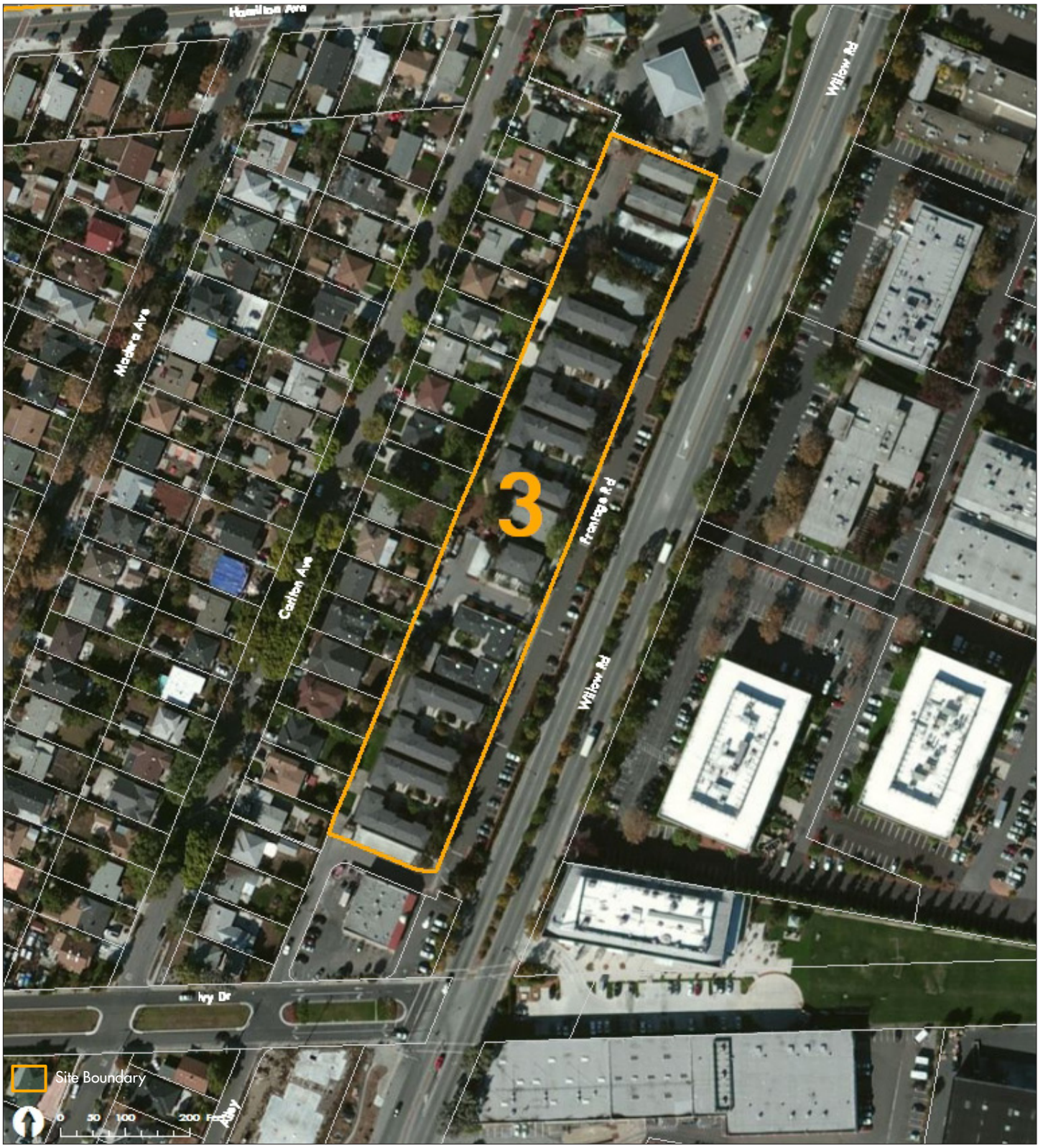


FIGURE 3-6
AERIAL PHOTOGRAPH OF SITE 3

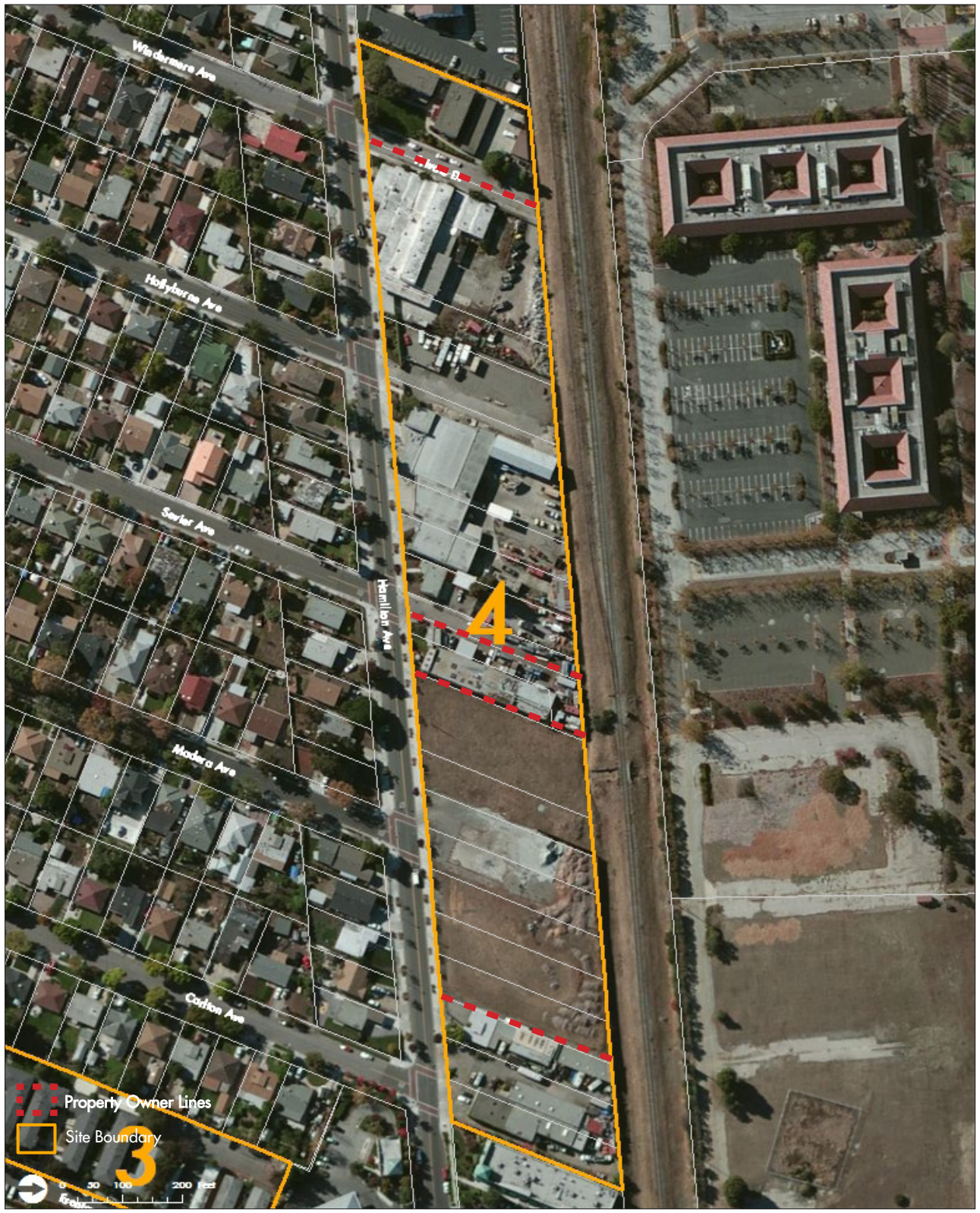


FIGURE 3-7
AERIAL PHOTOGRAPH OF SITE 4



FIGURE 3-8
AERIAL PHOTOGRAPH OF SITE 5

Table 3-2 identifies the location, existing zoning and land use designations, and the potential development capacity of each housing site under review as part of this EA. The City will amend the Zoning Ordinance to accommodate the potential development capacities shown in Table 3-2, up to a total of 900 housing units on the housing sites, as described further below in Section D.3, Zoning Ordinance Amendments.

b. Goals, Objectives, Policies, and Programs

The proposed Housing Element includes goals, quantified objectives, policies, and implementing programs to promote its overall objectives:

- “ A *goal* is a desired state for the future.
- “ *Quantified objectives* identify program targets for the maximum number of housing units to be constructed, rehabilitated, conserved, and preserved at various income levels during the Housing Element planning period (2007-2014).
- “ A *policy* is a recognized community position on a particular subject.
- “ An *implementing program* is a detailed action that the City, or other identified entity, will implement to attain the Housing Element’s goals and objectives.

The proposed Housing Element sets forth the following four goals:

- “ **Goal 1:** Build local government institutional capacity and monitor accomplishments to respond effectively to housing needs. (Supported by Policies H1.1 through H1.9 and accomplished through Implementing Programs H1.A through H1.L.)
- “ **Goal 2:** Maintain, protect, and enhance existing housing and neighborhoods. (Supported by Policies H2.1 through H2.6 and accomplished through Implementing Programs H2.A through H2.D.)
- “ **Goal 3:** Provide housing for special needs populations that is coordinated with support services. (Supported by Policies H3.1 through H3.9 and accomplished through Implementing Programs H3.A through H3.I.)
- “ **Goal 4:** Use land efficiently to meet housing needs at a variety of income levels, implement sustainable development practices, and blend well-designed new housing into the community. (Supported by Policies H4.1 through H4.13 and accomplished through Implementing Programs H4.A through H4.P.) As explained above, proposed housing programs would implement the goals and policies established in the Housing Element. The City proposes to accommodate up to 418 units through these programs, as described below. This figure represents a realistic estimate of the numbers of units that would be created as a result of each program.

CITY OF MENLO PARK
 HOUSING ELEMENT UPDATE, GENERAL PLAN CONSISTENCY UPDATE,
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 PROJECT DESCRIPTION

TABLE 3-2 PROPOSED HOUSING UNITS RESULTING FROM IMPLEMENTATION OF THE PROPOSED HOUSING ELEMENT

Site	Site Name/Address ^a	APN	Existing Zoning ^b	Existing General Plan Designation	Existing Use	Demolition Required	Lot Area (ac)	Proposed DU/ac	Potential New DU	Existing DU	Potential Net New DU
1	Veterans Affairs Campus ^c 700 block of Willow Road	062470050	PF	Public Facilities	Vacant Portion of Campus	No	1.87	32	60	0	60
2	MidPen's Gateway Apts 1200 block of Willow Road	062103610	R3	Medium Density Residential	Multi-Family Residential	Yes	2.27	40	90	48	42
3	MidPen's Gateway Apts 1300 block of Willow Road	055383560	R3	Medium Density Residential	Multi-Family Residential	Yes	2.97	40	118	82	36
4	Hamilton Avenue East 700-800 blocks of Hamilton Ave	Multiple Parcels ^d	M1	Limited Industry	Light Industrial and Vacant Land	Yes	7.20	30	216	0	216
5 ^e	Haven Avenue 3600 block of Haven Avenue	Multiple Parcels ^f	M2	Limited Industry	Light Manufacturing, Storage, and Vacant	Yes	15.50	35	540 ^k	0	540
Maximum Potential Units Identified for Higher Density Housing Rezoning											894
Maximum Units Rezoned for Higher Density Housing Under EA^g											900
Infill Areas Around Downtown			R3	Medium Density Residential	Varies ^h	Yes	0.23 or greater	30	194	76	118
Second Units ⁱ											300
Total Units from Proposed Housing Programs											418
TOTAL UNITS PROPOSED^j											1,318

Notes: APN = Assessor's Parcel Number; DU = dwelling unit; DU/ac = dwelling units per acre

^a See Figure 3-3 for a map of the housing sites.

^b City of Menlo Park Zoning District abbreviations: PF = Public Facilities District, M1 = Light Industrial District, R3 = Apartment District, M2 = General Industrial District

^c Although the City has been studying and accounting for the potential impacts of a 60-unit development that is currently proposed on Site 1, the City does not need to take any action to rezone the site due to a Federal pre-emption of the City's land use authority.

^d Site 4 APNs: 055374120; 055396070; 55396030, 55396060, 55397010, 55397020, 55397030; 55397040, 55397050; 55398240, 55398010; 55398260, 55398030, 55398040, 55398050, 55398060, 55398070, 55398080.

^e Housing Site 5 assumes the existing buildings would be demolished and replaced with residential land uses only.

^f Site 5 APNs: 55170260, 55170200, 55170190, 55170270, 55170180; 55170320; 55170330; 55170210, 55170220, 55170080, 55170070, 55170060.

^g Although the potential development identified for the housing sites totals 894 housing units, under the proposed Plan Components the City would only rezone sites to allow up to a maximum of 900 housing units.

^h Residential land uses include single family, five or more units, duplex, triplex and detached units.

ⁱ The exact location for second units is not known; however, these sites would be constructed on property currently designated for single-family residential development.

^j The total number of proposed units under environmental review equals a maximum of 900 units on proposed housing sites plus 418 units through proposed housing programs for a total of 1,318 units at buildout.

^k The 76 units that were originally included as part of former Site 13 (Post Office) have been transferred to Site 5 (Haven Avenue [former Site 14]).

Source: City of Menlo Park, 2013.

i. Infill Programs Around Downtown

As part of the Housing Element, the City will evaluate and implement zoning, policies, or programs to help promote infill housing opportunities located in close proximity to transit and other services. The program will first focus on lots 10,000 square feet or greater in areas surrounding in the El Camino Real/Downtown Specific Plan area. Possible expansion to smaller lots at a later date would be subject to a separate environmental review. Modifications to encourage infill housing could include one or more of the following:

- “ Increase in maximum Floor Area Ratio (FAR).
- “ Increase in maximum density.
- “ Flexibility in required parking standards dependent on tenancy (e.g. senior housing) and/or location (e.g. proximity to transit services).
- “ Development of “density unit equivalents.”
- “ Creation of multi-family and mixed-use design guidelines to provide more clarity and certainty in the review process.
- “ Consideration of fee reduction or waivers.

Based on program implementation, it is anticipated that 118 net new units could be built on identified infill sites by buildout year 2035.⁵ Infill sites around the downtown area are shown in Figure 3-3. Implementation of the Program H4.A, “Modify Development Standards to Encourage Infill Housing,” would contribute to the construction of infill housing around the downtown area under buildout conditions.

ii. Second Unit Programs

Programs established for the accommodation of second units would modify the City’s existing regulations and process related to construction of second units on single-family residential parcels, initially on lots 6,000 square feet or greater in area. Modifications would include reduction in minimum parcel size, allowances for larger second units, flexibility in height limits, reduced fees (possible reduction in both Planning/Building fees and impact fees as a result of the small size of the units), flexibility in on-site parking requirements, and a greater City role in publicizing and providing guidance for the approval of second units. Based on studies conducted in San Mateo County and elsewhere in the San Francisco Bay Area, it is antici-

⁵ For the purposes of this environmental analysis, it is assumed that development on infill sites would include the demolition of existing development and redevelopment at proposed, higher densities. Whether or not existing development is actually demolished would ultimately be determined by market conditions.

pated that two-thirds to three-quarters of second units built are affordable to lower-income households due to their small size and use as housing for family members at very low to no rent. With the modifications proposed in the Housing Element, it is anticipated that 300 additional second units could be built by buildout year 2035. Implementation of the Program H4.E, “Modify Second Dwelling Unit Development Standards and Permit Process,” would contribute to construction of second units under buildout conditions.

Program H4.F is an amnesty program that would legalize existing illegal second units. This program would only change the legal status of existing units, but would not contribute to the development of new units. Because the units already exist, this program is not included in the projected buildout for the purposes of this EA. However, the legalization of the units would assist the City in meeting its RHNA.

iii. Incentive and Opportunity Programs

A number of programs offer incentives for higher density, affordable and special needs housing. The following are examples of programs that would support higher density, affordable and special needs housing development, and may enable future development projects on the housing or infill sites, but are not considered to directly result in construction of new housing units:

- “ Program H3.I: Establish Density Bonus & Other Incentives for Special Needs Housing
- “ Program H4.C: Adopt Standards for an “Affordable Housing Overlay Zone”
- “ Program H4.D: Implement Inclusionary Housing Regulations and Adopt Standards to Implement State Density Bonus Law
- “ Program H4.O: Implement Actions in Support of High Potential Housing Opportunity Sites

iv. Other Programs

The remaining programs in the proposed Housing Element would implement the goals and policies of the Housing Element. These programs are part of the potential future development that is evaluated in this EA, but are not considered to directly result in the construction of new housing units.

2. General Plan Consistency Update

In order to maintain consistency between the Housing Element and other elements of the General Plan, and consistency between the General Plan and Zoning Ordinance, other General Plan elements would be amended at the same time that the Housing Element is adopted. As previously discussed, within 60 days of adopting this Housing Element Update, the City plans to complete all General Plan amendments required

to make the General Plan consistent with the Housing Element. The proposed General Plan consistency update includes amendments to the following elements:

- “ Noise Element (adopted November 14, 1978)
- “ Seismic Safety and Safety Element (adopted June 22, 1976)
- “ Open Space and Conservation Element (adopted June 26, 1973)

The Plan Components also includes both text and land use amendments to the General Plan for consistency with the Housing Element programs to achieve the higher density housing. The definition of High Density Residential would be modified to allow densities greater than 40 du/ac with the application of the State Density Bonus Law or the proposed Affordable Housing Overlay. The definition of Medium Density Residential would be modified to allow up to 30 du/ac for infill housing around downtown. The General Plan land use designation for the sites selected for higher density housing from the Housing Element process would subsequently be amended to High Density Residential.

The proposed General Plan consistency update is available under separate cover from the Planning Division.

3. Zoning Ordinance Amendments

The 5 sites described in Table 3-2 above have been identified for their potential appropriateness for higher density housing (i.e. 30 or more du/ac). The City will rezone these sites to accommodate the additional 900 housing units. In order to accommodate housing for a mix of income groups and to reduce barriers to housing development, the City is considering modifications to the Zoning Ordinance, which include the following:

- “ **Rezoning for Higher Density Housing:** Evaluate the development standards, including density, FAR, parking, height, and setbacks, of the existing R-2, R-3 and R-4 zoning district, and amend the Zoning Ordinance to either modify the use and development regulations of the these zoning districts and/or create a new zoning district to allow for higher density housing (including ancillary uses to serve the residents) and establish associated design standards. The selected housing opportunity sites would be rezoned accordingly.
- “ **Housing Overlay Zone:** Create an Affordable Housing Overlay Zone to allow increased densities in appropriate sites in the El Camino Real/Downtown Specific Plan area and other key housing opportunity sites. The overlay zone would remove potential barriers and establish development standards such as density, floor area ratio and parking requirement to achieve specified affordability levels of housing.

- “ **State Density Bonus Law and Below Market Rate Housing Program:** Update the Zoning Ordinance to be consistent with the State Density Bonus Law and modify, as needed, the BMR Guidelines to determine if any changes are needed to help facilitate the additional creation of affordable housing. .
- “ **Emergency Shelters:** Amend the Zoning Ordinance to establish an overlay zone for emergency shelter for the homeless that will detail objective standards such as maximum number of beds, off-street parking requirements, length of stay, proximity to other shelters, lighting, and security.
- “ **Transitional and Supportive Housing:** Amend the Zoning Ordinance to allow residential care facilities, and transitional and supportive housing as required by State law. Transitional and supportive housing shall be considered a residential use subject only to those restrictions that apply to other residential dwellings in the same zone.
- “ **Reasonable Accommodation:** Amend Chapter 16.82 of the Zoning Ordinance to establish procedures to provide individuals with disabilities accommodations in rules, policies, practices and procedures that may be necessary to ensure equal access to housing. Relief from various land use, zoning, building codes, or other rules or procedures of the City. One example includes allowance for an encroachment into the front setback for a ramp where a variance would typically be required.
- “ **Senior and Special Needs Housing:** Zoning Ordinance amendment to establish density bonuses and other incentives for the creation of a range of accommodations at various affordability levels for seniors and persons with disabilities.

E. Buildout under the Plan Components

As previously discussed, this EA analyzes potential impacts resulting from up to 1,318 new dwelling units on the five potential housing sites throughout the City and through implementation of key planning programs for infill areas around downtown and second units for the 2007 to 2014 planning period. The development of the units would occur over the projected buildout period of 2014 to 2035. This EA evaluates the projected buildout in the year 2035, consistent with CEQA requirements that stipulate the evaluation must consider “reasonably foreseeable” direct and indirect impacts of future development. An estimation of the housing units, non-residential development, population, and jobs anticipated by 2035 under the Plan Components is shown in Table 3-3.

TABLE 3-3 BUILDOUT UNDER THE PROPOSED PLAN COMPONENTS

	Existing (2012)	Net New	Total with Future Development (2035)
Housing Units	12,388	1,318	13,706
Population ^a	32,513	3,361	35,874

^a Population is based on an average household size of 2.55 persons per household.
Source: Department of Finance, The Planning Center | DC&E, 2012.

Assuming the new units constructed under the Housing Element would have the same average household size as existing households in the City, 2.55 residents per household, the total population yield for the future development would be approximately 3,361 new residents⁶ by 2035.

The County of San Mateo, in partnership with all 20 cities in the county, including Menlo Park, has formed a sub-region responsible for completing a sub-RHNA process for the 2007 to 2014 Housing Element planning period. The jurisdictions in San Mateo County have agreed to continue the sub-RHNA process for the 2014 to 2022 Housing Element planning period.

While the City has not adopted a Housing Element since 1992, past construction and current zoning have contributed to meeting a portion of the City’s RHNA for the current (2007 to 2014) and previous (1999 to 2006) Housing Element planning periods. Applying the City’s “default” density standards, the City must rezone some of the identified sites to accommodate up to 500 units at 30 or more units per acre.⁷ The scope of this EA, however, considers rezoning for up to 900 higher density units to provide the ability for multiple sites to be rezoned to meet the affordable housing requirements for low and very-income categories, and

⁶ 2.55 residents per household x 1,318 households = 3,361 new residents.

⁷ To provide local governments with greater certainty and clarity in evaluating and determining what densities facilitate the development of housing that is affordable to lower-income households, statute provides two options – the City can either: (1) conduct an analysis of market demand and trends, financial feasibility and residential project experience to demonstrate the lower densities can facilitate lower income housing development; or (2) apply Government Code Section 65583.2(c)(3)(B), which allows local governments to utilize “default” density standards deemed adequate to meet the “appropriate zoning” test, which in Menlo Park’s case are sites designated at 30 units per acre or more given Menlo Park’s size and location.

provide opportunities for mixed-income housing within some of the sites. Based on this assumption, there are sufficient sites for housing at moderate and above moderate-income affordability levels already zoned and available in the City. The future housing sites are needed to accommodate the City's lower households housing needs. As described in Section D.1, Housing Element Update, above, the City must rezone sites to accommodate a minimum of 500 housing units for lower income (very low income and low income) households at 30 du/ac. To meet this remaining RHNA, the City proposes to rezone sites to allow at least 500 units for lower income households.

F. Intended Uses of the Plan Components and EA

This EA is intended to identify and evaluate potential environmental impacts of the adoption and implementation of the Plan Components. This EA is also intended to determine corresponding mitigation measures for identified impacts, as necessary. Subsequent development applications would be reviewed by the City for consistency with the Housing Element, General Plan, and Zoning Ordinance, and project-level environmental review would be conducted as required by CEQA.

Future activity that could occur following this EA includes the following, provided they are consistent with the Plan Components:

- Specific Plans.
- Property rezonings.
- Public and private development project approvals, such as tentative maps, variances, use permits, and other land use permits.
- Development Agreements.
- Funding approval of capital projects.
- Issuance of permits and other approvals necessary for implementation of the proposed General Plan.

G. Required Permits and Approvals

In general, the Plan Components will be adopted following approval of the EA solely by the City, without oversight or permitting by other agencies. However, following City adoption of the Housing Element as part of the Menlo Park General Plan, the State Department of Housing and Community Development (HCD) will be asked to certify the City's Housing Element.

The Plan Components provide the opportunity for housing in the EA Study Area, but does not include any specific development proposals. Future development will need to conform to applicable zoning district development and design standards, and be consistent with General Plan Goals and Policies. Depending on the proposal, a project may be exempt or require further environmental review and subsequent analysis in a Mitigated Negative Declaration or the preparation of an Environmental Impact Report. Projects may be ministerial, requiring no discretionary action or may require review and approval by the Community Development Director, Planning Commission, and/or the City Council, and other agencies as needed. Building permits will be required for all structures.

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HOUSING ELEMENT UPDATE, GENERAL PLAN CONSISTENCY UPDATE,
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PROJECT DESCRIPTION

4 ENVIRONMENTAL EVALUATION

The Environmental Assessment (EA) is comprised of 14 chapters that evaluate the direct, indirect, and cumulative environmental impacts of future development that would occur by adopting and implementing the proposed Housing Element Update, General Plan Consistency Update, and associated Zoning Ordinances amendments, together referred to as “the Plan Components.” The EA includes an examination of the following environmental issues listed by associated chapter number:

- 4.1 Aesthetics
- 4.2 Air Quality
- 4.3 Biological Resources
- 4.4 Cultural Resources
- 4.5 Geology and Soils
- 4.6 Greenhouse Gas Emissions
- 4.7 Hazards and Hazardous Materials
- 4.8 Hydrology and Water Quality
- 4.9 Land Use and Planning
- 4.10 Noise
- 4.11 Population and Housing
- 4.12 Public Services and Recreation
- 4.13 Transportation and Traffic
- 4.14 Utilities and Service Systems

The topics of agricultural and forestry resources and mineral resources are not analyzed in this EA because it was determined through the Initial Study (see Appendix A) that the potential future development would not have any impacts to these resources due to existing conditions in the EA Study Area.

A. Chapter Organization

Each section in this chapter is organized into the following subsections:

- “ The *Regulatory Framework* section provides an overview of federal, State, regional, and local laws and regulations relevant to each environmental issue.
- “ The *Existing Conditions* section describes current conditions with regard to the environmental issue. Consistent with CEQA Guidelines Section 15125(a), the section describes the baseline, which is the time and physical conditions that are used as the point of comparison for determining the significance of a proposed project’s environmental effects. For the purposes of this EA, the baseline is the existing

conditions as of May 22, 2012, which is the time the City Council approved the work program for the Plan Components.

- “ The *Standards of Significance* section describes how an impact is judged to be significant in this EA. Consistent with Section 15022(a) of the CEQA Guidelines, the City of Menlo Park (City) uses the significance criteria designated by CEQA and the State CEQA Guidelines (Appendix G), which are used to evaluate project impacts throughout this document, as well as the City-adopted Transportation Impact Analysis Guidelines and other applicable agencies with jurisdiction over signalized intersections. The level of significance determinations are described below.
- “ The *Impact Discussion* section describes potential Plan Components impacts (direct and indirect) and cumulative impacts and why each impact is found to be significant or less than significant.
- “ The *Impacts and Mitigation Measures* section numbers and lists identified impacts, and presents measures that would mitigate each impact. Consistent with CEQA Guidelines Section 15126(a)(1)(A), mitigation measures may consist of measures included in the Plan Components (i.e. goals, policies, and programs) and measures as conditions of approval. Where the Plan Components goals, policies, and programs serve to avoid impacts, they are listed in the “Impacts Discussion” section described above. Where additional mitigation measures are beyond the scope of the Plan Components, the measures are listed under this “Impact and Mitigation Measure” section. In each case, the significance following mitigation is also explained.

B. Levels of Significance

As noted above, the significance criteria are identified before the impact discussion subsection, under the subsection, “Standards of Significance.” For each impact identified, a level of significance is determined using the following classifications:

- “ *Significant* impacts include a description of the circumstances where an established or defined threshold would be exceeded.
- “ *Less-than-significant* impacts include effects that are noticeable, but do not exceed established or defined thresholds, or are mitigated below such thresholds.
- “ *No impact* describes the circumstances where there is no adverse effect on the environment.

For each impact identified as being significant, the EA provides mitigation measures to reduce, eliminate, or avoid the adverse effect. If the mitigation measures would reduce the impact to a less-than-significant level successfully, this is stated in the EA. However, *Significant and Unavoidable* impacts are described where mitigation measures would not diminish these effects to less-than-significant levels.

C. Cumulative Impact Analysis

Consistent with Section 15130 of the CEQA Guidelines this EA includes a discussion of cumulative impacts when a project's incremental effect is "cumulatively considerable." A cumulative impact consists of an impact created as a result of the combination of the future development evaluated in the EA, together with other reasonably foreseeable projects causing related impacts.

In the case of an area-wide planning document, cumulative effects occur from development under the approved General Plan within the city combined with effects of development on lands around the city and in the region. Because all development in EA Study Area would be approved under the proposed General Plan, no development within the EA Study Area would be considered part of the cumulative impacts; instead, development inside the EA Study Area is part of the Plan Components itself.

Where the incremental effect of a project is not "cumulatively considerable," a Lead Agency need not consider that effect significant, but must briefly describe its basis for concluding that the effect is not cumulatively considerable.

The cumulative discussions in Chapters 4.1 through 4.14 explain the geographic scope of the area affected by each cumulative effect (e.g. immediate project vicinity, city, county, watershed, or air basin). The geographic area considered for each cumulative impact depends upon the impact that is being analyzed. For example, in assessing aesthetic impacts, only development within the vicinity of the areas covered under the Plan Components would contribute to a cumulative visual effect because development is only visible within the vicinity of the sites. In assessing macro-scale air quality impacts, on the other hand, all development within the air basin contributes to regional emissions of criteria pollutants, and basin-wide projections of emissions is the best tool for determining the cumulative effect.

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 Environmental Impact Report prepared for such a plan. The projections may be supplemented with additional information such as regional modeling.

Depending on the impact area, this EA has used a combination of the list and projections methods as a conservative approach that tends to increase projected cumulative impacts. The following provides a summary of the cumulative impact approach for each impact area:

- “ **Aesthetics:** The cumulative setting for visual impacts includes the development under the General Plan within the City combined with effects of development on lands adjacent to the City and within the county.
- “ **Air Quality:** Cumulative air quality impacts could occur from a combination of the Plan Components combined with regional growth within the San Francisco Bay Area Air Basin.
- “ **Biological Resources:** The geographic scope of the cumulative analysis for biological resources considers the surrounding incorporated and unincorporated lands, and the region.
- “ **Cultural Resources:** Cumulative impacts to cultural resources could occur from development planned for under the Plan Components in conjunction with buildout of the City and the region.
- “ **Geology and Soils:** Potential cumulative geological impacts could arise from a combination of the development of the Plan Components together with the regional growth in the immediate vicinity of the EA Study Area.
- “ **Greenhouse Gas Emissions:** The cumulative impact analyses for GHG emissions is related to the ongoing activities in the EA Study Area and the Plan Components, and are not confined to a particular air basin but rather are dispersed worldwide.
- “ **Hazards and Hazardous Materials:** This chapter analyzes potential cumulative hazardous impacts that could arise from a combination of the development of the Plan Components together with the regional growth in the immediate vicinity of the EA Study Area.
- “ **Hydrology and Water Quality:** The geographic context used for the cumulative assessment of water quality and hydrology impacts is the San Francisquito Creek Watershed, which encompasses the entire EA Study Area.

- “ **Land Use and Planning:** The geographic context for the cumulative land use and planning effects occur from development under the Plan Components within the City combined with effects of development on lands adjacent to the City and within the region.
- “ **Noise:** The traffic noise levels are based on cumulative traffic conditions that take into account cumulative development in the region.
- “ **Population and Housing:** Impacts from cumulative growth are considered in the context of their consistency with regional planning efforts.
- “ **Public Services and Recreation:** Cumulative impacts are considered in the context of the growth from development under the Plan Components within the City combined with the estimated growth in the service provider’s service area.
- “ **Transportation and Traffic:** The cumulative analysis scenario adds traffic generated by the future development to the one percent compound growth per year assumed for the increase in traffic volume within 23 years plus traffic generated by the pending/approved projects within Menlo Park and the El Camino Real/Downtown Specific Plan project, plus the Stanford University Medical Center (SUMC), a City of Palo Alto project, which consists of a net increase of 854,970 square feet of hospital space and 24,330 square feet of medical office. For the SUMC project, it is only the trips that go through Menlo Park that were considered under this scenario.
- “ **Utilities and Service Systems:** Cumulative impacts are considered in the context of the growth from development under the Plan Components within the City combined with the estimated growth in the service provider’s service area.

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HOUSING ELEMENT UPDATE, GENERAL PLAN CONSISTENCY UPDATE,
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ENVIRONMENTAL EVALUATION

4.1 AESTHETICS

This chapter describes the existing aesthetic character of the EA Study Area and evaluates the potential environmental consequences of future development that could occur by adopting and implementing the proposed Housing Element Update, General Plan Consistency Update, and associated Zoning Ordinances amendments, together referred to as the “Plan Components” on aesthetic character. A summary of the relevant regulatory setting and existing conditions is followed by a discussion of Plan Components and cumulative impacts.

A. Regulatory Framework

This section summarizes key State and City regulations and programs related to aesthetics in the EA Study Area. There are no federal regulations pertaining to aesthetics that apply to the EA Study Area.

1. State Laws and Regulations

a. Scenic Highways

The California Scenic Highway Program, maintained by the California Department of Transportation (Caltrans), protects scenic State highway corridors from changes that would diminish the aesthetic value of lands adjacent to the highways. Caltrans designated the segment of Interstate 280 (I-280) that runs from Santa Clara County line to the San Bruno city limit as a scenic highway.¹ This State-designated scenic highway runs approximately one mile along southern edge of the City. Caltrans describes the scenic value of I-280 as follows: “The motorist is offered middleground forest and mountain vistas, background water and mountain panoramas, and enclosed lake and mountain ridge views as the route traverses the environmentally fragile valley created by the San Andreas Earthquake Fault.”²

b. California Building Code, 2010

The California Building Code, Part 2 of Title 24 in the California Code of Regulations (CCR), is based on the International Building Code and combines three types of building standards from three different origins:

- ◆ Building standards that have been adopted by State agencies without change from building standards contained in the International Building Code.

¹ California Department of Transportation website, Officially Designated State Scenic Highways, <http://www.dot.ca.gov/hq/LandArch/scenic/schwy.htm>, accessed September 25, 2012.

² Caltrans, California Scenic Highway Mapping Program, Route 280 Photo Album, http://www.dot.ca.gov/hq/LandArch/scenic_highways/index.htm, accessed on November 19, 2012.

- ◆ Building standards that have been adopted and adapted from the International Building Code to meet California conditions.
- ◆ Building standards, authorized by the California legislature, that constitute extensive additions not covered by the International Building Code that have been adopted to address particular California concerns.

The California Building Code includes standards for outdoor lighting that are intended to improve energy efficiency, and to reduce light pollution and glare by regulating light power and brightness, shielding, and sensor controls.

2. Local Regulations and Policies

a. Menlo Park Municipal Code

Other than the existing General Plan, the City of Menlo Park Municipal Code³ is the primary tool that shapes the form and character of physical development in the City. Standards and regulations established in the Municipal Code are used to implement the goals, objectives, and policies of the General Plan and to regulate all land use within the City.

i. Zoning Ordinance

Title 16 of the Municipal Code sets forth the City's Zoning Ordinance, which, amongst other purposes, is intended to preserve and extend the charm and beauty inherent to the residential character of the City and encourage building construction of pleasing design. The Zoning Ordinance sets forth the standards requiring architectural control review and stipulating aesthetic criteria for residential development, such as ensuring that a development's proposed design and size is appropriate for the location and is compatible with adjacent uses and resources. The Zoning Ordinance provides standards for architectural design, variety in housing types and massing, landscaping (Chapters 16.10 to 16.28). In addition, the Zoning Ordinance sets forth development standards related to aesthetics including preservation of historic buildings (Chapter 16.54), fencing (Chapter 16.64), lighting (Section 12.04.100A(E)(C)(1)) and daylight planes for residential development (Chapter 16.67).

³ City of Menlo Park, Municipal Code, Title 16: Zoning, passed August 23, 2011, <http://www.codepublishing.com/CA/menlopark/>, accessed December 28, 2012.

a) Architectural Control

Under Section 16.68.020 the planning commission, architectural committee, or community development director will review architectural drawings, including plans for buildings, landscaping, and parking facilities for all building permit applications, with the exception of single-family dwellings, duplexes, and accessory buildings. The findings for architectural control review are as follows:

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;
5. That the development is consistent with any applicable specific plan.

ii. Subdivision Regulations

The Municipal Code Title 15 includes Subdivision regulations that are established to ensure the orderly development of subdivisions. The ordinance provides standards for surveying, design and construction, and installation of relevant infrastructure.

iii. Street, Sidewalk and Utilities Regulations

Street, sidewalk, and utilities regulations are included in Title 13 of the Municipal Code. The ordinance provides development standards related to aesthetics such as landscaping, lighting, street trees, heritage trees and screening and undergrounding utilities.

B. Existing Conditions

1. Visual Character

While the City is primarily built out and nestled between the built environments of Atherton and Redwood City to the north-northwest; the San Francisco Bay to the north-northeast; East Palo Alto to the east; Palo Alto to the south-southeast, Menlo Park can generally be described as a modern suburb that encompasses a variety of natural landscapes. The westernmost portion of Menlo Park consists of residential hillside development. The central and southern portions of the City include a mix of housing types, business parks, shopping centers, and public uses ranging from low- to mid-rise development. Northern and eastern Menlo

Park abuts the San Francisco Bay (Bay) and contains wetlands and vegetated open space, including marshes, flatlands, and shoreline of the Bay. To the south and west of the Bay, the City contains a mixture of light industry warehouses and business parks.

The five opportunity housing sites are located throughout the City (see Figure 3-3 in Chapter 3, Project Description, of this EA). The following provides a description of each site.

a. Housing Site 1 - 700 block of Willow Road

Site 1 (Veterans Affairs Campus) is a developed parcel located within the Veteran's Affairs Medical Center Campus, bound by existing residential development and the Medical Center Campus itself. The potential density for Site 1 is 48 dwelling units per acre and 60 net new dwelling units could potentially be developed for this site. As shown in Figure 4.1-1, the site is currently developed with surface parking lots and a landscaped lawn area used by the campus. The site includes mature trees.

b. Housing Site 2 - 1200 block of Willow Road

Site 2 (MidPen's Gateway Apartments) is a developed parcel bound by Frontage Road and existing commercial and residential development. The potential density for Site 2 is 40 dwelling units per acre and 42 net new dwelling units (in addition to 32 existing dwelling units which will be replaced) could potentially be developed for this site for a total of 90 units on Site 2. As shown in Figure 4.1-2, the site is currently developed with one- to two-story residential uses.

c. Housing Site 3 - 1300 block of Willow Road

Site 3 (MidPen's Gateway Apartments) is a developed parcel bound by Frontage Road and existing commercial and residential development. The potential density for Site 3 is 40 dwelling units per acre and 36 net new dwelling units (in addition to 82 existing dwelling units which will be replaced) could potentially be developed for this site for a total of 118 dwelling units. As shown in Figure 4.1-3, the site is currently developed with one- to two-story residential uses.

d. Housing Site 4 - 700-800 blocks of Hamilton Avenue

Site 4 (Hamilton Avenue) is comprised of several separate developed and undeveloped parcels bound by Hamilton Avenue, the Dumbarton Rail Corridor, and existing commercial development. The potential density for Site 4 is 30 dwelling units per acre and 216 net new dwelling units could be developed on this site. As shown in Figure 4.1-4, the site is currently contains one- and two-story light industrial/commercial buildings, as well as several vacant and undeveloped parcels.



FIGURE 4.1-1
EXISTING VISUAL CONDITIONS SITE 1



FIGURE 4.1-2
EXISTING VISUAL CONDITIONS SITE 2



FIGURE 4.1-3
EXISTING VISUAL CONDITIONS SITE 3

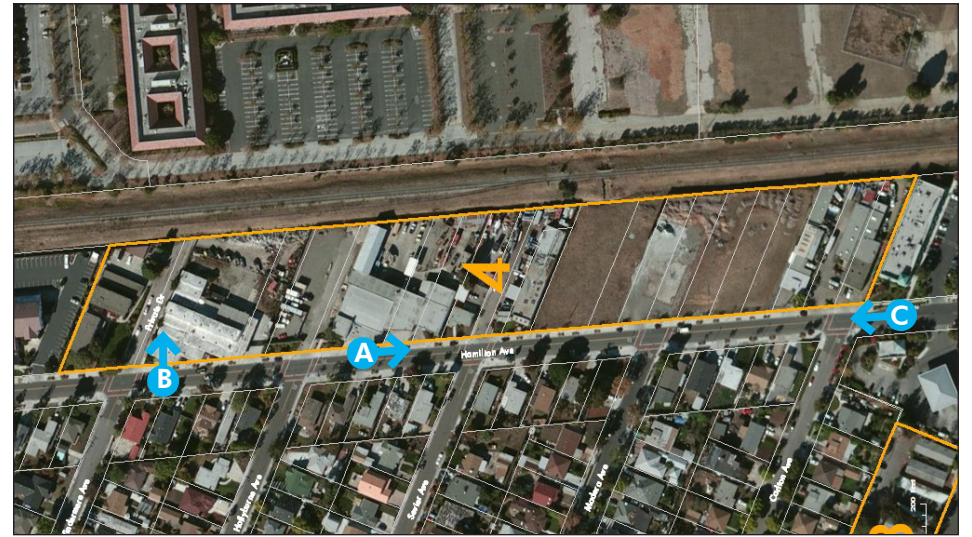


FIGURE 4.1-4
EXISTING VISUAL CONDITIONS SITE 4

e. Housing Site 5 - 3600 block of Haven Avenue⁴

Site 5 (Haven Avenue) is comprised of several separate developed and vacant parcels, bound by Haven Avenue, existing industrial uses, and the Salt Ponds and associated trails. The potential density for Site 5 is 35 dwelling units per acre and 540 net new dwelling units could potentially be developed on this site. As shown on Figure 4.1-5, the site is currently occupied with several industrial and office buildings, as well as surface parking lots and vacant lands used as staging areas. The site includes potential views of the Salt Ponds and the bay.

f. Infill Around the Downtown Area

The opportunity infill sites around the downtown area are all currently developed and surrounded by existing development. The City will be reviewing and modifying and/or creating development standards to encourage additional infill dwelling units on lots 10,000 square feet or greater around the downtown. There are no scenic resources on these sites, however the potential for historic resources to be on the sites or adjacent to the sites would be identified on a case-by-case basis as each site is considered for future housing.

g. Second Units

As discussed throughout this EA, the opportunity sites for second units would be on single-family zoned properties of lots 6,000 feet or greater. The potential for publically accessibly scenic resources, heritage and mature trees, and historic resources to be on the sites or adjacent to the sites would be identified on a case-by-case basis as each site is considered for future housing.

2. Scenic Corridors and Vistas

Scenic corridors are considered 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 short-range, medium-range and long-range views are available from publicly accessible viewpoints, such as from city streets. However, scenic vistas are generally interpreted as long-range views of a specific scenic feature (e.g. open space lands, mountain ridges, bay, or ocean views).

Menlo Park's main thoroughfares include the El Camino Real, which is developed with traditional strip center developments and bisects the downtown area comprised of pedestrian-scale, one to three story buildings. The Middlefield Road and Sand Hill Road thoroughfares include landscaped office parks with mid-rise buildings interspersed with landscaped parking areas, as does the Highway 101 corridor. While the

⁴ Housing Site 5 does not include the properties owned by Tyson, Integris, and Deerfield.

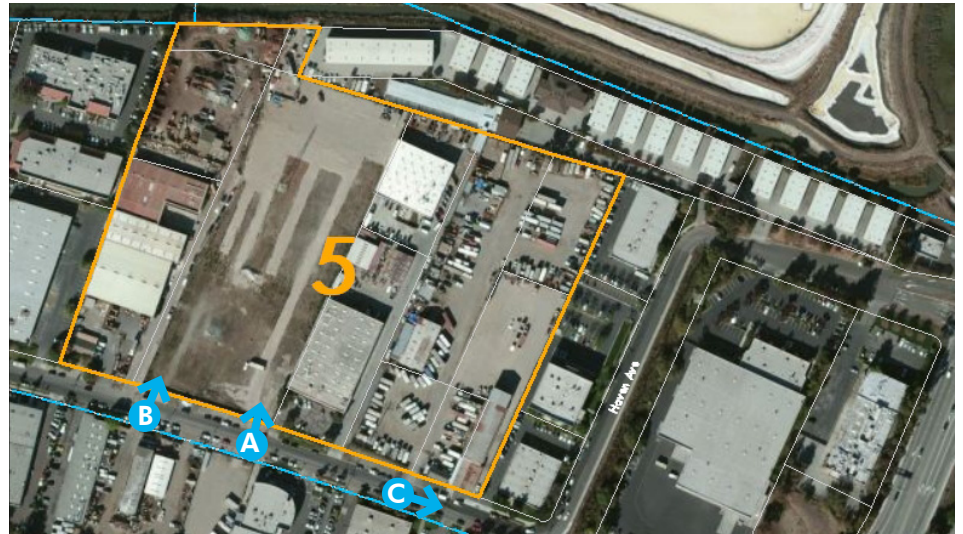


FIGURE 4.1-5
EXISTING VISUAL CONDITIONS SITE 5

City has no designated scenic corridors, as previously noted, the section of I-280 within the EA Study Area is considered a scenic highway per the California Scenic Highways Program.⁵

Menlo Park is located on the flatter portions of the south-western margin of Bay, east of the San Andreas Fault zone, which limit scenic vistas within the City. However, due to the flat nature, the majority of the City, particularly from the north and east of Highway 101, are afforded views of the Santa Cruz Mountain Range, which runs the length of the San Francisco Peninsula and forms a barrier between the Pacific Ocean and the Bay. Scenic resources also include the Bay itself and its natural features as viewed from the eastern and northern portions of the City, and the densely vegetated riparian area lining the open water of San Francisquito Creek seen from views along the city's southeast border. The grassy foothills, which are part of the larger Stanford foothills, provide the visual backdrop to the west of the City.

3. Light and Glare

Light pollution refers to all forms of unwanted light in the night sky, including glare, light trespass, sky glow, and over-lighting. Views of the night sky are an important part of the natural environment. Excessive light and glare can be visually disruptive to humans and nocturnal animal species. Although there is considerable development in Menlo Park, commercial development is concentrated in the downtown area and intersections along major arterials. Light pollution, in most of the City is minimal, and is restricted primarily to street lighting along major arterials streets and Highway 101, and to night-time illumination of commercial buildings, shopping centers, and industrial buildings. Light spillage from residential areas, particularly older neighborhoods, is mostly well screened by trees.

4. Shade and Shadow

The issue of shade and shadow is an important environmental issue because it may impact the users or occupants of certain land uses on adjacent properties by blocking direct sunlight by on-site buildings. Users or occupants of certain land uses, such as residential, recreational, churches, schools, outdoor restaurants, historic buildings, and pedestrian areas have expectations for direct sunlight and warmth from the sun. These land uses are termed "shadow-sensitive." Shadow lengths are dependent on the height and size of the building from which it is cast and the angle of the sun. The angle of the sun varies to the rotation of the earth (i.e. time of day) and elliptical orbit (i.e. change in seasons). The longest shadows are cast during the winter months and the shortest shadows are cast during the summer months.

⁵ Caltrans, California Scenic Highway Mapping Program, Route 280 Photo Album, http://www.dot.ca.gov/hq/LandArch/scenic_highways/index.htm, accessed on November 19, 2012.

C. Standards of Significance

The Plan Components would have a significant impact with regard to aesthetics if the associated future development would:

1. Have a substantial adverse effect on a scenic vista.
2. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway.
3. Substantially degrade the existing visual character or quality of the site and its surroundings.
4. Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.

D. Impact Discussion

1. Have a substantial adverse effect on a scenic vista.

Future development under the Plan Components would have the potential to affect scenic vistas and/or scenic corridors if new or intensified development blocked views of areas that provide or contribute to such vistas. Potential effects could include blocking views of a scenic vista/corridor from specific publically accessible vantage points or the alteration of the overall scenic vista/corridor itself. Such alterations could be positive or negative, depending on the characteristics of individual future developments and the subjective perception of observers.

As previously described, scenic corridors are considered public views as seen along a linear transportation route and scenic vistas are views a specific scenic feature. Scenic vistas are generally interpreted as long range views, while scenic corridors are comprised of short-, middle-, and long-range views. The General Plan does not designate official scenic corridors or vistas. However, for this analysis the westward views to the Santa Cruz Mountain Range, eastward views to the Bay, and views of the foothills and San Francisquito Creek within the City are considered scenic vistas and the State-designated portion of I-280 is considered a scenic corridor. The impacts to the State-designated view corridor are discussed below in Section D.2.

The five opportunity housing sites are concentrated on sites either already developed and/or underutilized, and/or in close proximity to existing residential and residential-serving development, where future development would have a lesser impact on scenic vistas (see Figures 4.1-1 through 4.1-5 above).

Future development on housing Site 5 (Haven Avenue) would be visible from the Bay; however, publically accessible views to the Bay are currently obstructed from the existing industrial land uses and Site 5 (Haven Avenue) is not considered a Bay-viewing destination point. Therefore, impacts to scenic vistas as a result of any potential redevelopment of Site 5 (Haven Avenue) from industrial to residential would be *less than significant*.

Future housing on the infill sites would not obstruct views of the Santa Cruz Mountain Range, the Bay, the foothills, the San Francisquito Creek within the City or the State-designated portion of I-280 that is considered a scenic corridor. In addition, given the fact that second units are typically one story or two story structures, limited in size, and would not be of height and form that would likely block views of these scenic resources. Considering this and the fact that opportunity housing Sites 1 through 4 are not considered destination public viewing points nor are they visible from scenic vistas; thus, overall impacts would be *less than significant*.

Furthermore, future residential development would if necessary be subject to the Architectural Control Review process in accordance with Section 16.68.020 of the Zoning Ordinance or would be required to comply with enumerated design standards. Nonetheless, new development would not be expected to significantly alter scenic viewsheds in these areas. The portions of the EA Study Area that are currently designated as open space lands would remain designated as such under the Plan Components and associated scenic viewsheds would not be significantly affected.

The following current and amended General Plan goals, policies and program address the preservation of scenic vistas and corridors in Menlo Park:

a. Current General Plan Land Use and Circulation Element

- ◆ 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-7: Public access to the Bay for the scenic enjoyment of the open water, sloughs, and marshes shall be protected.
- ◆ Policy I-G-8: The Bay, its shoreline, San Francisquito Creek, and other wildlife habitat and ecologically fragile areas shall be maintained and preserved to the maximum extent possible. The City shall work in cooperation with other jurisdictions to implement this policy.

- ◆ Policy I-G-12: The maintenance of open space on Stanford lands within Menlo Park's unincorporated sphere of influence shall be encouraged.

b. Amended General Plan Open Space and Conservation Element

- ◆ Policy OSC-1.11: Sustainable Landscape Practices. Encourage the enhancement of boulevards, plazas and other urban open spaces in high-density and mixed-use residential developments, commercial and industrial areas with landscaping practices that minimize water usage.
- ◆ Goal OSC-1: Protect and Enhance Open Space and Natural Resources. Protect, conserve and enhance valuable natural resources, open areas and designated open space lands rich in scenic value, wildlife or of a fragile ecological nature through conservation and restoration efforts. The approach to natural resources include:
 - Preserve the natural state, unique appeal, and visual amenities of Menlo Park's bay lands and shoreline.
 - Protect the wildlife habitat, scenic value and natural character of San Francisquito Creek and other riparian corridors.
 - Protect sensitive species and natural communities.
 - Preserve open areas needed for protection from natural hazards.
 - Maintain, preserve and enhance contiguous open space on Stanford lands within Menlo Park's unincorporated sphere of influence.
 - Protect lands that have inherent qualities to provide visual amenity, including topographic features, views or vistas, street landscape areas, scenic water areas, creeks and the San Francisco Bay.
 - Provide landscaped areas that visually and environmentally enhance the community.
- ◆ Policy OSC-1.14: Protection of Conservation and Scenic Areas. Protect conservation and scenic areas from deterioration or destruction by vandalism, private actions or public actions.
- ◆ Policy OSC-1.6: South Bay Salt Pond Restoration Project and Flood Management Project. Continue to support and participate in Federal and State efforts related to the South Bay Salt Pond Restoration Project and flood management project. Provide public access to the Bay for the scenic enjoyment and recreation opportunities as well as conservation education opportunities related to the open Bay, the sloughs, and the marshes.

- ◆ OSC-1.13: Yard and Open Space Requirements in New Development. Ensure that required yard and open spaces are provided for as part of new multi-family residential, mixed-use, commercial, and industrial development.
- ◆ Policy OSC-1.15: Heritage Trees. Protect Heritage Trees, including during construction activities through enforcement of the Heritage Tree Ordinance (Chapter 13.24 of the Municipal Code).
- ◆ Policy OSC-1.1: Natural Resources Integration with Other Uses. Protect Menlo Park's natural environment and integrate creeks, utility corridors, and other significant natural and scenic features into development plans.

As discussed above, while the overall impacts to scenic corridors and vistas within the EA Study Area would be less than significant under the Plan Components, the implementation of these goals, policies, and programs would further ensure that impacts on scenic vistas from future development under the Plan Components would be *less than significant*.

2. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway.

The section of I-280 that is within the EA Study Area is considered a State scenic highway per Caltrans standards. However, none of the potential housing sites are within the I-280 viewshed and would not impact views along the scenic highway corridor. Accordingly, impacts related to scenic highways would be *less than significant*.

3. Substantially degrade the existing visual character or quality of the site and its surroundings.

As shown on Figures 4.1-1 through 4.1-5, the housing opportunity sites are concentrated on locations either already developed and/or underutilized, and/or in close proximity to existing residential and residential-serving development. Future building form and massing may be greater than existing conditions, but would not necessarily degrade the existing residential character of Menlo Park. However, the housing opportunity sites are adjacent to residential, recreational, churches, outdoor area, historic buildings, and pedestrian areas and therefore the potential for casting shadows over adjacent shadow-sensitive receptors exists.

Any future residential development would, if necessary, be subject to architectural control review or would be required to comply with enumerated design standards to ensure compatibility with adjoining land uses. The following goals, policies and programs in the General Plan would protect the existing visual character or quality of the City and its surroundings.

a. Current General Plan Land Use and Circulation Element

- ◆ 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-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.

b. Amended General Plan Housing and Open Space and Conservation Elements

- ◆ Policy OSC-1.11: Sustainable Landscape Practices. Encourage the enhancement of boulevards, plazas and other urban open spaces in high-density and mixed-use residential developments, commercial and industrial areas with landscaping practices that minimize water usage.
- ◆ Policy OSC-1.12: Landscaping and Plazas. Include landscaping and plazas on public and private lands, and well-designed pedestrian and bicycle facilities in areas of intensive non-vehicular activity. Require landscaping for shade, surface runoff, or to obscure parked cars in extensive parking areas.
- ◆ Policy H-2.5: The City will encourage good management practices, rehabilitation of viable older housing, and long-term maintenance and improvement of neighborhoods.
- ◆ Goal H-4: Use land efficiently to meet community housing needs at a variety of income levels, implement sustainable development practices, and blend well-designed new housing into the community.
- ◆ Policy H-4.3: The City will review proposed new housing in order to achieve excellence in development design through an efficient process and will encourage infill development on vacant and underutilized sites that is harmonious with the character of Menlo Park residential neighborhoods. New construction in existing neighborhoods shall be designed to emphasize the preservation and improvement of the stability and character of the individual neighborhood.

The City will also encourage innovative design that creates housing opportunities that are complementary to the location of the development. It is the City's intent to enhance neighborhood identity and sense of community by ensuring that all new housing will (1) have a sensitive transition with the sur-

rounding area, (2) avoid unreasonably affecting the privacy of neighboring properties, or (3) avoid impairing access to light and air of structures on neighboring properties.

- ◆ Policy H-4.6: The City to encourage well-designed mixed-use developments (residential mixed with other uses) where residential use is appropriate to the setting and to encourage mixed-use development in proximity to transit and services, such as at shopping centers and near to the downtown to support Downtown businesses (consistent with the El Camino Real/Downtown Specific Plan).
- ◆ Policy H-4.11: The City will encourage the development of well-designed new second units (e.g., carriage houses, attached independent living units, small detached living units) and the legalization of existing second units as an important way to provide affordable housing in combination with primary residential uses on low-density lots. Secondary dwelling units must be in compliance with adopted City standards.
- ◆ Program H-4.I: Provide more specific guidance in the appropriate design of multiple family and mixed-use housing development outside of the El Camino Real/Downtown Specific Plan boundary area. The intent would be to more clearly establish City expectations to make the design review process as efficient as possible.

In conclusion, with implementation of these goals, policies, and programs, future development under the Plan Components would result in a *less-than-significant* impact to visual character.

4. Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.

Substantial light and glare comes mainly from commercial areas, safety lighting, traffic on major arterials and the freeway, and street lights. The Plan Components do not contain any land use changes that would re-designate areas from residential to commercial, but it does recommend changing industrial land use designations to residential uses. As noted above under Section B.3, light pollution, in most of the City is minimal, and is restricted primarily to street lighting along major arterials streets and Highway 101, and to nighttime illumination of commercial buildings, shopping centers, and industrial buildings. Light spillage from residential areas, particularly older neighborhoods, is mostly well screened by trees. The growth that is planned for under the Plan Components would occur in already built-out areas where street and site lighting already exist.

The goals, policies and programs in the existing General Plan and under the Plan Components listed above in Section D.3, Substantially Degrade the Existing Visual Character or Quality of the Site and its Surround-

ings, would ensure that light and glare associated with new projects under the Plan Components are minimized. For example, Goal H4 directs the City to use land efficiently to meet community housing needs at a variety of income levels, implement sustainable development practices and blend well-designed new housing into the community. Policy H4.3 states that the City will review proposed new housing in order to achieve excellence in development design and will encourage infill development on vacant and underutilized sites that is harmonious with the character of Menlo Park residential neighborhoods. Policy H4.6 requires the City to encourage well-designed mixed-use developments where residential use is appropriate to the setting and Policy H4.11 states that the City will encourage the development of well-designed new second units in compliance with adopted City standards. In addition, Policy I-A-2 requires new residential developments to be designed to be compatible with Menlo Park's residential character.

The policies combined with continued architectural control review, if necessary, under the Zoning Ordinance would ensure that light and glare associated with new projects under the Plan Components are minimized and impacts from new sources of substantial light or glare would be *less than significant*.

5. Cumulative Impacts

In the case of an area-wide planning document such as a General Plan, cumulative effects occur from development under the General Plan within the City combined with effects of development on lands adjacent to the City and within the county. The geographic scope of analysis is also discussed in Chapter 4.0, Environmental Evaluation.

Potential future development under the Plan Components would, if necessary, be subject to entitlement review, including environmental review and architectural design review, to ensure the development is aesthetically pleasing and compatible with adjoining land uses. With these mechanisms in place, future development that would be allowed under the Plan Components would not create substantial impacts to visual resources. Therefore, the Plan Components would not result in a *cumulatively considerable* contribution to aesthetic impacts.

E. Impacts and Mitigation Measures

The Plan Components would not result in any significant aesthetics impacts; therefore, no mitigation measures are necessary.

4.2 AIR QUALITY

This chapter describes the existing air quality setting for the Environmental Assessment (EA) Study Area and evaluates the potential for land use changes within the EA Study Area associated with adoption and implementation of the proposed Housing Element Update, General Plan Consistency Update, and associated Zoning Ordinance Amendments, together referred to as the “Plan Components” to impact air quality in a local and regional context. The analysis in this section is based on the Association of Bay Area Governments (ABAG) population and employment projections anticipated within the EA Study Area at the General Plan 2035 horizon year, which include growth accommodated by the potential development sites (see Chapter 4.11, Population and Employment). The transportation sector is based on vehicle miles traveled (VMT) provided by TJKM Transportation Consultants, as modeled using the City/County Association of Governments of San Mateo County (C/CAG) model run by the Santa Clara Valley Transportation Authority (VTA) for the City of Menlo Park.

A. Regulatory Framework

Ambient air quality standards (AAQS) have been adopted at State and federal levels for criteria air pollutants. In addition, both the State and federal government regulate the release of toxic air contaminants (TACs). The EA Study Area is in the San Francisco Bay Area Air Basin (SFBAAB) and is subject to the rules and regulations imposed by the Bay Area Air Quality Management District (BAAQMD), as well as the California AAQS adopted by the California Air Resources Board (CARB) and national AAQS adopted by the United States (U.S.) Environmental Protection Agency (EPA). Federal, State, regional and local laws, regulations, plans, or guidelines that are potentially applicable to the Plan Components are summarized below.

1. Federal and State Laws and Regulations

a. Ambient Air Quality Standards

The Clean Air Act (CAA) was passed in 1963 by the U.S. Congress and has been amended several times. The 1970 Clean Air Act amendments strengthened previous legislation and laid the foundation for the regulatory scheme of the 1970s and 1980s. In 1977, Congress again added several provisions, including nonattainment requirements for areas not meeting National AAQS and the Prevention of Significant Deterioration program. The 1990 amendments represent the latest in a series of federal efforts to regulate the protection of air quality in the U.S. The CAA allows states to adopt more stringent standards or to include other pollution species. The California Clean Air Act, signed into law in 1988, requires all areas of the State to achieve and maintain the California AAQS by the earliest practical date. The California AAQS tend to be more restrictive than the National AAQS, based on even greater health and welfare concerns.

The National and California AAQS are the levels of air quality considered to provide a margin of safety in the protection of the public health and welfare. They are designed to protect those “sensitive receptors” most susceptible to further respiratory distress, such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and persons engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollutant concentrations considerably above these minimum standards before adverse effects are observed.

Both California and the federal government have established health-based AAQS for seven air pollutants (applicable AAQS are shown in Table 1, *Ambient Air Quality Standards for Criteria Pollutants*, in Appendix D). These pollutants include ozone (O₃), nitrogen dioxide (NO₂), carbon monoxide (CO), sulfur dioxide (SO₂), coarse inhalable particulate matter (PM₁₀), fine inhalable particulate matter (PM_{2.5}), and lead (Pb). In addition, the State has set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety.

b. Air Pollutants of Concern

i. *Criteria Air Pollutants*

The pollutants emitted into the ambient air by stationary and mobile sources are regulated by federal and State law. Air pollutants are categorized as primary and/or secondary pollutants. Primary air pollutants are emitted directly from sources. Carbon monoxide (CO), reactive organic gases (ROG), nitrogen oxides (NO_x), sulfur dioxide (SO₂), coarse inhalable particulate matter (PM₁₀), fine inhalable particulate matter (PM_{2.5}), and lead (Pb) are primary air pollutants. Of these, CO, SO₂, NO₂, PM₁₀, and PM_{2.5} are “criteria air pollutants,” which means that AAQS have been established for them. ROG and NO₂ are criteria pollutant precursors that form secondary criteria air pollutants through chemical and photochemical reactions in the atmosphere. Ozone (O₃) and nitrogen dioxide (NO₂) are the principal secondary pollutants.

A description of each of the primary and secondary criteria air pollutants and their known health effects is presented below.

- ◆ **Carbon Monoxide (CO)** is a colorless, odorless, toxic gas produced by incomplete combustion of carbon substances, such as gasoline or diesel fuel. CO is a primary criteria air pollutant. CO concentrations tend to be the highest during winter mornings with little or no wind, when surface-based inversions trap the pollutant at ground levels. Because CO is emitted directly from internal combustion engines and motor vehicles operating at slow speeds are the primary source of CO in the SFBAAB. Emissions are highest during cold starts, hard acceleration, stop-and-go driving, and when a vehicle is moving

at low speeds. New findings indicate that CO emissions per mile are lowest at about 45 miles per hour (mph) for the average light-duty motor vehicle and begin to increase again at higher speeds. When inhaled at high concentrations, CO combines with hemoglobin in the blood and reduces its oxygen-carrying capacity. 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, as well as fetuses. Even healthy people exposed to high CO concentrations can experience headaches, dizziness, fatigue, unconsciousness, and even death.¹ The SFBAAB is designated under the California and National AAQS as being in attainment of CO criteria levels.²

- ◆ **Reactive Organic Gases (ROG)** are compounds composed primarily of hydrogen and carbon atoms. Internal combustion associated with motor vehicle usage is the major source of hydrocarbons. Other sources of ROGs include evaporative emissions from paints and solvents, the application of asphalt paving, and the use of household consumer products such as aerosols. Adverse effects on human health are not caused directly by ROGs, but rather by reactions of ROGs to form secondary pollutants such as O₃. There are no AAQS established for ROGs. However, because they contribute to the formation of O₃, the BAAQMD has established a significance threshold for this pollutant.
- ◆ **Nitrogen Oxides (NO_x)** are a byproduct of fuel combustion and contribute to the formation of O₃, PM₁₀, and PM_{2.5}. The two major components of NO_x are nitric oxide (NO) and nitrogen dioxide (NO₂). The principal component of NO_x produced by combustion is NO, but NO reacts with oxygen to form NO₂, creating the mixture of NO and NO₂ commonly called NO_x. NO₂ acts as an acute irritant and in equal concentrations is more injurious than NO. At atmospheric concentrations, however, NO₂ is only potentially irritating. There is some indication of a relationship between NO₂ and chronic pulmonary fibrosis. Some increase in bronchitis in children (two and three years old) has also been observed at concentrations below 0.3 ppm. NO₂ absorbs blue light; the result is a brownish-red cast to the atmosphere and reduced visibility. NO is a colorless, odorless gas formed from atmospheric nitrogen and oxygen when combustion takes place under high temperature and/or high pressure. The SFBAAB is designated an attainment area for NO₂ under the National AAQS and California AAQS.³

¹ Bay Area Air Quality Management District (BAAQMD), 2011. California Environmental Quality Act Air Quality Guidelines, Appendix C: Sample Air Quality Setting.

² California Air Resources Board (CARB), 2011. Area Designations: Activities and Maps, <http://www.arb.ca.gov/design/adm/adm.htm>, accessed on February 16, 2012.

³ California Air Resources Board (CARB), 2011. Area Designations: Activities and Maps, <http://www.arb.ca.gov/design/adm/adm.htm>, accessed on February 16, 2012.

- ◆ **Sulfur Dioxide (SO₂)** is a colorless, pungent, irritating gas formed by the combustion of sulfurous fossil fuels. It enters the atmosphere as a result of burning high-sulfur-content fuel oils and coal and from chemical processes at chemical plants and refineries. Gasoline and natural gas have very low sulfur content and do not release significant quantities of SO₂. When SO₂ forms sulfates (SO₄) in the atmosphere, together these pollutants are referred to as sulfur oxides (SO_x). Thus, SO₂ is both a primary and secondary Criteria Air Pollutant. At sufficiently high concentrations, SO₂ may irritate the upper respiratory tract. At lower concentrations and when combined with particulates, SO₂ may do greater harm by injuring lung tissue.⁴ The SFBAAB is designated as an attainment area for SO₂ under the California and National AAQS.⁵
- ◆ **Suspended Particulate Matter (PM₁₀ and PM_{2.5})** consists of finely divided solids or liquids such as soot, dust, aerosols, fumes, and mists. Two forms of fine particulates are now recognized and regulated. Inhalable coarse particles, or PM₁₀, include the particulate matter with an aerodynamic diameter of 10 microns (i.e. 10 millionths of a meter or 0.0004 inch) or less. Inhalable fine particles, or PM_{2.5}, have an aerodynamic diameter of 2.5 microns or less (i.e. 2.5 millionths of a meter or 0.0001 inch).

Some particulate matter, such as pollen, occurs naturally. In the SFBAAB most particulate matter is caused by combustion, factories, construction, grading, demolition, agricultural activities, and motor vehicles. Extended exposure to particulate matter can increase the risk of chronic respiratory disease. PM₁₀ is of concern because it bypasses the body's natural filtration system more easily than larger particles and can lodge deep in the lungs. The EPA and the state of California revised their PM standards several years ago to apply only to these fine particles. PM_{2.5} poses an increased health risk because the particles can deposit deep in the lungs and contain substances that are particularly harmful to human health. Motor vehicles are currently responsible for about half of particulates in the SFBAAB. Wood burning in fireplaces and stoves is another large source of fine particulates.⁶

Both PM₁₀ and PM_{2.5} may adversely affect the human respiratory system, especially in people who are naturally sensitive or susceptible to breathing problems. These health effects include premature death and increased hospital admissions and emergency room visits (primarily the elderly and individuals with cardiopulmonary disease); increased respiratory symptoms and disease (children and individual with

⁴ Bay Area Air Quality Management District (BAAQMD), 2011. California Environmental Quality Act Air Quality Guidelines, Appendix C: Sample Air Quality Setting.

⁵ California Air Resources Board (CARB), 2011. Area Designations: Activities and Maps, <http://www.arb.ca.gov/desig/adm/adm.htm>, accessed on February 16, 2012.

⁶ Bay Area Air Quality Management District (BAAQMD), 2011. California Environmental Quality Act Air Quality Guidelines, Appendix C: Sample Air Quality Setting.

asthma); and alterations in lung tissue and structure and in respiratory tract defense mechanisms.⁷ Diesel particulate matter (DPM) is classified by CARB as a carcinogen. The SFBAAB is designated nonattainment under the California AAQS for PM₁₀ and nonattainment under both the California and National AAQS for PM_{2.5}.⁸

- ◆ **Ozone (O₃)** is commonly referred to as “smog” and is a gas that is formed when ROG_s and NO_x, both by-products of internal combustion engine exhaust, undergo photochemical reactions in the presence of sunlight. O₃ is a secondary criteria air pollutant. O₃ concentrations are generally highest during the summer months when direct sunlight, light winds, and warm temperatures create favorable conditions to the formation of this pollutant. O₃ poses a health threat to those who already suffer from respiratory diseases as well as to healthy people. O₃ levels usually build up during the day and peak in the afternoon hours. Short-term exposure can irritate the eyes and cause constriction of the airways. Besides causing shortness of breath, it can aggravate existing respiratory diseases such as asthma, bronchitis, and emphysema. Chronic exposure to high ozone levels can permanently damage lung tissue. O₃ can also damage plants and trees and materials such as rubber and fabrics.⁹ The SFBAAB is designated nonattainment of the 1-hour California AAQS and 8-hour California and National AAQS for O₃.¹⁰
- ◆ **Lead (Pb)** is a metal found naturally in the environment as well as in manufactured products. The major sources of lead emissions have historically been mobile and industrial sources. As a result of the phase-out of leaded gasoline, metal processing is currently the primary source of lead emissions. The highest levels of lead in air are generally found near lead smelters. Other stationary sources are waste incinerators, utilities, and lead-acid battery manufacturers.

Twenty years ago, mobile sources were the main contributor to ambient lead concentrations in the air. In the early 1970s, the EPA set national regulations to gradually reduce the lead content in gasoline. In 1975, unleaded gasoline was introduced for motor vehicles equipped with catalytic converters. The EPA banned the use of leaded gasoline in highway vehicles in December 1995. As a result of the EPA’s regulatory efforts to remove lead from gasoline, emissions of lead from the transportation sector and

⁷ South Coast Air Quality Management District, 2005. *Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning*.

⁸ California Air Resources Board (CARB), 2011. Area Designations: Activities and Maps, <http://www.arb.ca.gov/design/adm/adm.htm>, accessed on February 16, 2012.

⁹ Bay Area Air Quality Management District (BAAQMD), 2011. California Environmental Quality Act Air Quality Guidelines, Appendix C: Sample Air Quality Setting.

¹⁰ California Air Resources Board (CARB), 2011. Area Designations: Activities and Maps, <http://www.arb.ca.gov/design/adm/adm.htm>, accessed on February 16, 2012.

levels of lead in the air decreased dramatically.¹¹ The SFBAAB is designated in attainment of the California and National AAQS for lead.¹² In addition, compared to the operation of a major industrial facility, the Project would not emit significant amounts of lead, so lead is not a pollutant of major concern for the Project.

ii. Toxic Air Contaminants

Public exposure to TACs is a significant environmental health issue in California. In 1983, the California Legislature enacted a program to identify the health effects of TACs and to reduce exposure to these contaminants to protect the public health. The California Health and Safety Code define a TAC as “an air pollutant which may cause or contribute to an increase in mortality or in serious illness, or which may pose a present or potential hazard to human health.” A substance that is listed as a hazardous air pollutant pursuant to Section 112(b) of the federal Clean Air Act (42 U.S. Code Section 7412[b]) is a toxic air contaminant. Under State law, the California Environmental Protection Agency (Cal/EPA), acting through CARB, is authorized to identify a substance as a TAC if it determines that the substance is an air pollutant that may cause or contribute to an increase in mortality or serious illness, or may pose a present or potential hazard to human health.

California regulates TACs primarily through AB 1807 (Tanner Air Toxics Act) and AB 2588 (Air Toxics “Hot Spot” Information and Assessment Act of 1987). The Tanner Air Toxics Act sets forth a formal procedure for CARB to designate substances as TACs. Once a TAC is identified, CARB adopts an “airborne toxics control measure” for sources that emit designated TACs. If there is a safe threshold for a substance (i.e. a point below which there is no toxic effect), the control measure must reduce exposure to below that threshold. If there is no safe threshold, the measure must incorporate toxics best available control technology to minimize emissions. To date, CARB has established formal control measures for 11 TACs, all of which are identified as having no safe threshold.

Air toxics from stationary sources are also regulated in California under the Air Toxics “Hot Spot” Information and Assessment Act of 1987. Under AB 2588, TAC emissions from individual facilities are quantified and prioritized by the air quality management district or air pollution control district. High priority

¹¹ Bay Area Air Quality Management District (BAAQMD), 2011. California Environmental Quality Act Air Quality Guidelines, Appendix C: Sample Air Quality Setting.

¹² California Air Resources Board (CARB), 2011. Area Designations: Activities and Maps, <http://www.arb.ca.gov/design/adm/adm.htm>, accessed on February 16, 2012.

facilities are required to perform a health risk assessment (HRA) and, if specific thresholds are exceeded, are required to communicate the results to the public through notices and public meetings.

By the last update to the TAC list in December 1999, CARB had designated 244 compounds as TACs.¹³ Additionally, CARB has implemented control measures for a number of compounds that pose high risks and show potential for effective control. The majority of the estimated health risks from TACs can be attributed to relatively few compounds, the most important being particulate matter from diesel-fueled engines.

In 1998, CARB identified DPM as a TAC. Previously, the individual chemical compounds in diesel exhaust were considered TACs. Almost all diesel exhaust particles are ten microns or less in diameter. Because of their extremely small size, these particles can be inhaled and eventually trapped in the bronchial and alveolar regions of the lungs.

The BAAQMD's Community Air Risk Evaluation (CARE) program was initiated in 2004 to evaluate and reduce health risks associated with exposures to outdoor TACs in the Bay Area. Based on the annual emissions inventory of TACs for the SFBAAB, DPM was found to account for approximately 80 percent of the cancer risk from airborne toxics. The highest DPM concentrations occur in the urban core areas of eastern San Francisco, western Alameda, and northwestern Santa Clara counties. BAAQMD has identified six impacted communities in the Bay Area including Concord, eastern San Francisco, western Alameda County, Redwood City/East Palo Alto, Richmond/San Pablo, and San Jose. The major contributor to acute and chronic non-cancer health effects in the SFBAAB is acrolein (C₃H₄O). Major sources of acrolein include on-road mobile sources and aircraft near freeways and commercial and military airports.¹⁴ Currently CARB does not have certified emission factors or an analytical test method for acrolein. Therefore since the appropriate tools needed to implement and enforce acrolein emission limits are not available, the BAAQMD does not conduct health risk screening analysis for acrolein emissions.¹⁵

¹³ California Air Resources Board (CARB), 1999. Final Staff Report: Update to the Toxic Air Contaminant List.

¹⁴ Bay Area Air Quality Management District (BAAQMD), 2006. Community Air Risk Evaluation Program, Phase I Findings and Policy Recommendations Related to Toxic Air Contaminants in the San Francisco Bay Area.

¹⁵ Bay Area Air Quality Management District (BAAQMD), 2010. Air Toxics NSR Program, Health Risk Screening Analysis Guidelines.

2. Regulation of Air Quality at a Regional Level

a. Air Quality Management Planning

Air quality conditions in the SFBAAB have improved significantly since the BAAQMD was created in 1955.¹⁶ The BAAQMD prepares air quality management plans (AQMPs) to attain ambient air quality standards in the SFBAAB. The BAAQMD prepares Ozone Attainment Plans (OAPs) for the National O₃ standard and Clean Air Plans for the California O₃ standard. The BAAQMD prepares these AQMPs in coordination with ABAG and the Metropolitan Transportation Commission (MTC). The most recent adopted comprehensive plan is the 2010 Bay Area Clean Air Plan, which was adopted on September 15, 2010, and incorporates significant new scientific data, primarily in the form of updated emissions inventories, ambient measurements, new meteorological episodes, and new air quality modeling tools.

i. BAAQMD 2010 Bay Area Clean Air Plan

The purpose of the 2010 Bay Area Clean Air Plan is to: 1) update the Bay Area 2005 Ozone Strategy in accordance with the requirements of the California Clean Air Act to implement all feasible measures to reduce O₃; 2) consider the impacts of O₃ control measures on PM, TAC, and greenhouse gases (GHGs) in a single, integrated plan; 3) review progress in improving air quality in recent years; and 4) establish emission control measures to be adopted or implemented in the 2009 to 2012 timeframe. The 2010 Bay Area Clean Air Plan also provides the framework for SFBAAB to achieve attainment of the California AAQS. Areas that meet AAQS are classified attainment areas, while areas that do not meet these standards are classified nonattainment areas. Severity classifications for O₃ range from marginal, moderate, and serious to severe and extreme. The attainment status for the SFBAAB is shown in Table 4.2-1. The SFBAAB is currently designated a nonattainment area for California and National O₃, California and National PM_{2.5}, and California PM₁₀ AAQS.

b. C/CAG 2011 Congestion Management Plan

The City/County Association of Governments of San Mateo (C/CAG) is the designated congestion management agency for the county. C/CAG's congestion management plan (CMP) identifies strategies to respond to future transportation needs, identifies procedures to alleviate and control congestion, and promotes countywide solutions. Pursuant to the EPA's transportation conformity regulations and the Bay Area Conformity State Implementation Plan (also known as the Bay Area Air Quality Conformity Protocol), the CMP is required to be consistent with the MTC planning process, including regional goals,

¹⁶ Bay Area Air Quality Management District (BAAQMD), 2011. California Environmental Quality Act Air Quality Guidelines, Appendix C: Sample Air Quality Setting.

TABLE 4.2-1 ATTAINMENT STATUS OF CRITERIA POLLUTANTS IN THE SAN FRANCISCO AIR BASIN

Pollutant	State	Federal
Ozone – 1-hour	Nonattainment	Nonattainment
Ozone – 8-hour	Nonattainment (serious)	Classification revoked (2005)
PM ₁₀	Nonattainment	Unclassified
PM _{2.5}	Nonattainment	Nonattainment
CO	Attainment	Attainment
NO ₂	Attainment	Attainment
SO ₂	Attainment	Attainment
Lead	Attainment	Attainment
Sulfates	Attainment	Unclassified
All others	Unclassified	Unclassified

Source: California Air Resources Board (CARBP), 2011. Area Designations: Activities and Maps, <http://www.arb.ca.gov/desig/adm/adm.htm>.

policies, and projects for the regional transportation improvement program (RTIP).¹⁷ MTC cannot approve any transportation plan, program, or project unless these activities conform to the State Implementation Plan (SIP).

The federal CAA requires that federal transportation plans be prepared for regions in nonattainment of the federal AAQS. C/CAG provides county-level input to MTC during preparation of the regional transportation plan (RTP). The current RTP, Transportation 2035, was adopted on April 22, 2009. Transportation 2035 was prepared by MTC in partnership with ABAG, BAAQMD, and the Bay Conservation and Development Commission (BCDC). MTC updates the RTP every four years. Pursuant to Senate Bill 375 (SB 375), MTC's next RTP, Plan Bay Area, will incorporate the region's sustainable communities strategy

¹⁷ City/County Association of Governments of San Mateo (C/CAG), 2011. Final San Mateo County Congestion Management Program (CMP). http://www.ccag.ca.gov/pdf/Studies/Final%202011%20CMP_Nov11.pdf.

(SCS). Plan Bay Area is a joint effort between MTC, BAAQMD, and ABAG. Plan Bay Area is anticipated to be adopted in June 2013.¹⁸

Plan Bay Area will consider focused development scenarios along major transportation corridors to achieve the per capita GHG targets of the SCS. The preferred alternative of Plan Bay Area assumes a land development pattern in which 80 percent of the Bay Area's household growth and 66 percent of its job growth are in priority development areas identified by local jurisdictions. The Plan identifies the El Camino Real Corridor and Downtown area in the City of Menlo Park as proposed priority development areas.^{19,20}

3. Local Regulations and Policies

Menlo Park maintains several environmental programs under the City's Public Works Department. The City's environmental programs promote sustainable environmental practices and policies citywide and within City-owned facilities and open space areas. The City's climate action plan (CAP) was prepared to reduce municipal and community GHG emissions. The most recent CAP is the City's 2011 CAP Assessment Report, which is described in more detail in Chapter 4-6, Greenhouse Gas Emissions.

B. Existing Conditions

1. San Francisco Air Basin

The BAAQMD is the regional air quality agency for the SFBAAB, which comprises all of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, and Santa Clara counties; the southern portion of Sonoma County; and the southwestern portion of Solano County. Air quality in this area is determined by such natural factors as topography, meteorology, and climate, in addition to the presence of existing air pollution sources and ambient conditions.²¹

¹⁸ Metropolitan Transportation Commission (MTC), One Bay Area. Plan Bay Area Planning Process: Phases 3 & 4 Details for 2012-2013. http://www.onebayarea.org/pdf/SCS_plan_Process_chart-phases_3-4d.pdf revised December 2012.

¹⁹ Metropolitan Transportation Commission (MTC), One Bay Area, Sustainable Communities Strategy. Alternative Land Use Scenarios. Revised August 2011. http://www.onebayarea.org/plan_bay_area/milestone_4-12.html.

²⁰ Metropolitan Transportation Commission (MTC), One Bay Area. <http://www.onebayarea.org/news/story/Vote-on-Alternative-Strategies-for-Environmental-Impact-Report.html>.

²¹ Bay Area Air Quality Management District (BAAQMD), 2011. California Environmental Quality Act Air Quality Guidelines, Appendix C: Sample Air Quality Setting.

a. Meteorology

The SFBAAB is characterized by complex terrain, consisting of coastal mountain ranges, inland valleys, and bays, which distort normal wind flow patterns. The Coast Range splits resulting in a western coast gap, Golden Gate, and an eastern coast gap, Carquinez Strait, which allow air to flow in and out of the SFBAAB and the Central Valley.

The climate is dominated by the strength and location of a semi-permanent, subtropical high-pressure cell. During the summer, the Pacific high pressure cell is centered over the northeastern Pacific Ocean, resulting in stable meteorological conditions and a steady northwesterly wind flow. Upwelling of cold ocean water from below the surface because of the northwesterly flow produces a band of cold water off the California coast. The cool and moisture-laden air approaching the coast from the Pacific Ocean is further cooled by the presence of the cold water band, resulting in condensation and the presence of fog and stratus clouds along the Northern California coast. In the winter, the Pacific high-pressure cell weakens and shifts southward, resulting in wind flow offshore, the absence of upwelling, and the occurrence of storms. Weak inversions coupled with moderate winds result in a low air pollution potential.

i. *Wind Patterns*

During the summer, winds flowing from the northwest are drawn inland through the Golden Gate and over the lower portions of the San Francisco Peninsula. Immediately south of Mount Tamalpais, the northwesterly winds accelerate considerably and come more directly from the west as they stream through the Golden Gate. This channeling of wind through the Golden Gate produces a jet that sweeps eastward and splits off to the northwest toward Richmond and to the southwest toward San Jose when it meets the East Bay hills.

Wind speeds may be strong locally in areas where air is channeled through a narrow opening, such as the Carquinez Strait, the Golden Gate, or the San Bruno gap. For example, the average wind speed at San Francisco International Airport in July is about 17 knots (from 3:00 p.m. to 4:00 p.m.), compared with only seven knots at San Jose and less than 6 knots at the Farallon Islands.

The air flowing in from the coast to the Central Valley, called the sea breeze, begins developing at or near ground level along the coast in late morning or early afternoon. As the day progresses, the sea breeze layer deepens and increases in velocity while spreading inland. The depth of the sea breeze depends in large part upon the height and strength of the inversion. If the inversion is low and strong, and hence stable, the flow of the sea breeze will be inhibited and stagnant conditions are likely to result.

In the winter, the SFBAAB frequently experiences stormy conditions with moderate to strong winds, as well as periods of stagnation with very light winds. Winter stagnation episodes are characterized by nighttime drainage flows in coastal valleys. Drainage is a reversal of the usual daytime air-flow patterns; air moves from the Central Valley toward the coast and back down toward the Bay from the smaller valleys within the SFBAAB.

ii. Temperature

Summertime temperatures in the SFBAAB are determined in large part by the effect of differential heating between land and water surfaces. Because land tends to heat up and cool off more quickly than water, a large-scale gradient (differential) in temperature is often created between the coast and the Central Valley, and small-scale local gradients are often produced along the shorelines of the ocean and bays. The temperature gradient near the ocean is also exaggerated, especially in summer, because of the upwelling of cold ocean bottom water along the coast. On summer afternoons the temperatures at the coast can be 35 degrees Fahrenheit (°F) cooler than temperatures 15 to 20 miles inland. At night this contrast usually decreases to less than 10°F.

In the winter, the relationship of minimum and maximum temperatures is reversed. During the daytime the temperature contrast between the coast and inland areas is small, whereas at night the variation in temperature is large.

iii. Precipitation

The SFBAAB is characterized by moderately wet winters and dry summers. Winter rains (November through March) account for about 75 percent of the average annual rainfall. The amount of annual precipitation can vary greatly from one part of the SFBAAB to another even within short distances. In general, total annual rainfall can reach 40 inches in the mountains, but it is often less than 16 inches in sheltered valleys.

During rainy periods, ventilation (rapid horizontal movement of air and injection of cleaner air) and vertical mixing are usually high, and thus pollution levels tend to be low. However, frequent dry periods do occur during the winter where mixing and ventilation are low and pollutant levels build up.

iv. Wind Circulation

Low wind speed contributes to the buildup of air pollution because it allows more pollutants to be emitted into the air mass per unit of time. Light winds occur most frequently during periods of low sun (fall and

winter, and early morning) and at night. These are also periods when air pollutant emissions from some sources are at their peak, namely, commute traffic (early morning) and wood-burning appliances (nighttime). The problem can be compounded in valleys, when weak flows carry the pollutants up-valley during the day, and cold air drainage flows move the air mass down-valley at night. Such restricted movement of trapped air provides little opportunity for ventilation and leads to buildup of pollutants to potentially unhealthy levels.

v. Inversions

An inversion is a layer of warmer air over a layer of cooler air. Inversions affect air quality conditions significantly because they influence the mixing depth, i.e. the vertical depth in the atmosphere available for diluting air contaminants near the ground. There are two types of inversions that occur regularly in the SFBAAB. Elevation inversions are more common in the summer and fall, and radiation inversions are more common during the winter. The highest air pollutant concentrations in the SFBAAB generally occur during inversions.

b. Existing Ambient Air Quality

Existing levels of ambient air quality and historical trends and projections in the vicinity of the Project site are best documented by measurements made by the BAAQMD. The air quality monitoring station closest to the City is the Redwood City Monitoring Station. Data from this station are summarized in Table 4.2-2. However this station does not monitor PM₁₀, so data was obtained from Cupertino Monitoring Station for 2010 and 2011 (data was unavailable for 2007 to 2009). The data show occasional violations of both the state and federal O₃ standards and federal PM_{2.5} standard. The State and federal PM₁₀, CO, SO₂, and NO₂ standards have not been exceeded in the last five years in the vicinity of Menlo Park.

2. Sensitive Receptors

Some land uses are considered more sensitive to air pollution than others due to the types of population groups or activities involved. Sensitive population groups include children, the elderly, the acutely ill, and the chronically ill, especially those with cardio-respiratory diseases.

Residential areas are also considered sensitive receptors to air pollution because residents (including children and the elderly) tend to be at home for extended periods of time, resulting in sustained exposure to any pollutants present. Other sensitive receptors include retirement facilities, hospitals, and schools.

TABLE 4.2-2 AMBIENT AIR QUALITY MONITORING SUMMARY

Pollutant/Standard	Number of Days Threshold Were Exceeded and Maximum Levels During Such Violations				
	2007	2008	2009	2010	2011
Ozone (O₃)					
State 1-Hour ≥ 0.09 ppm	0	0	0	2	0
State 8-hour ≥ 0.07 ppm	0	0	0	1	0
Federal 8-Hour > 0.075 ppm	0	0	0	1	0
Max. 1-Hour Conc. (ppm)	0.077	0.082	0.087	0.113	0.076
Max. 8-Hour Conc. (ppm)	0.070	0.070	0.063	0.077	0.062
Carbon Monoxide (CO)					
State 8-Hour > 9.0 ppm	0	0	0	0	0
Federal 8-Hour ≥ 9.0 ppm	0	0	0	0	0
Max. 8-Hour Conc. (ppm)	2.33	1.86	1.76	1.72	1.67
Nitrogen Dioxide (NO₂)					
State 1-Hour ≥ 0.18 (ppm)	0	0	0	0	0
Max. 1-Hour Conc. (ppm)	0.057	0.069	0.056	0.059	0.056
Sulfur Dioxide (SO₂)^a					
State 24-Hour ≥ 0.04 ppm	NA	NA	NA	0	0
Max. 24-Hour Conc. (ppm)	NA	NA	NA	0.003	0.005
Coarse Particulates (PM₁₀)^a					
State 24-Hour > 50 µg/m ³				0	0
Federal 24-Hour > 150 µg/m ³	NA	NA	NA	0	0
Max. 24-Hour Conc. (µg/m ³)				27.9	28.9
Fine Particulates (PM_{2.5})					
Federal 24-Hour > 35 µg/m ³	1	0	0	1	1
Max. 24-Hour Conc. (µg/m ³)	46.6	36.0	34.2	36.5	39.7

Notes: ppm: parts per million; µg/m³: or micrograms per cubic meter

* = insufficient data

NA = Not Available

Data obtained from the Redwood City Monitoring Station.

^a SO₂ and PM₁₀ data from the Cupertino Monitoring Station for 2010 and 2011. Data unavailable prior to 2010.

Source: California Air Resources Board (CARB), 2013. Air Pollution Data Monitoring Cards (2007, 2008, 2009, 2010, and 2011), <http://www.arb.ca.gov/adam/index.html>.

Recreational land uses are considered moderately sensitive to air pollution. Although exposure periods are generally short, exercise places a high demand on respiratory functions, which can be impaired by air pollution. In addition, noticeable air pollution can detract from the enjoyment of recreation. Industrial, commercial, retail, and office areas are considered the least sensitive to air pollution. Exposure periods are relatively short and intermittent, as the majority of the workers tend to stay indoors most of the time. In addition, the working population is generally the healthiest segment of the public.

C. Standards of Significance

1. CEQA Appendix G Thresholds

According to the CEQA Appendix G thresholds, the Plan Components would have a significant effect on air quality if they would:

1. Conflict with or obstruct implementation of the applicable air quality plan.
2. Violate any air quality standard or contribute substantially to an existing or projected air quality violation.
3. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).
4. Expose sensitive receptors to substantial pollutant concentrations.
5. Create objectionable odors affecting a substantial number of people.

2. BAAQMD Plan-Level Thresholds

The BAAQMD adopted CEQA Guidelines in June 2010, which were revised in May 2011.²² The BAAQMD CEQA Guidelines include methodology and thresholds for criteria air pollutant impacts and community health risk for plan-level and project-level analyses. The Plan Components qualifies as a Plan-

²² Bay Area Air Quality Management District (BAAQMD), 2011. California Environmental Quality Act Air Quality Guidelines, Appendix C: Sample Air Quality Setting.

Level project under BAAQMD's criteria. The BAAQMD's Guidelines include plan-level significance criteria that would be applicable to the Plan Components.²³

a. Criteria Air Pollutants and Precursors

BAAQMD does not require an inventory of project-related criteria air pollutant emissions under its plan-level review. Rather, BAAQMD requires an analysis of the following for plan-level projects:

- ◆ A consistency evaluation of the project with its current air quality plan control measures. The current AQMP is the 2010 Bay Area Clean Air Plan. BAAQMD considers the project consistent with the AQMP in accordance with the following:
 - Does the project support the primary goals of the AQMP?
 - Does the project include applicable control measures from the AQMP?
 - Does the project disrupt or hinder implementation of any AQMP control measures?
- ◆ A comparison that the project VMT or vehicle trip increase is less than or equal to the projected population increase.

In addition, under the plan-level review, BAAQMD also does not require an evaluation of CO hotspots.²⁴ With the turnover of older vehicles, introduction of cleaner fuels, and implementation of control technolo-

²³ A revised posting of BAAQMD CEQA Guidelines were posted without the screening and significance thresholds tables in 2012 after a Court ruling. On March 5, 2012, the Court issued a ruling in *California Building Industry Association v. Bay Area Air Quality Management District* (Superior Court Case No. RG10548693). Pursuant to the ruling, the Court found that the adoption of the BAAQMD's CEQA Guidelines, which comprise the BAAQMD's GHG significance criteria, is a "project" requiring CEQA review. Since no CEQA review was conducted for the Guidelines prior to their adoption, the Court set aside adoption of the Guidelines for determining the significance of air quality and GHG emissions, and ordered BAAQMD to take no further action to disseminate the thresholds until CEQA review is complete. While adoption of the thresholds was set aside, the thresholds are supported by appropriate studies and analysis (see <http://www.baaqmd.gov/Divisions/Planning-and-Research/CEQA-GUIDELINES/Tools-and-Methodology.aspx>). Accordingly, pursuant to its discretion under State CEQA Guidelines section 15064 (b) ("lead agencies may exercise their discretion on what criteria to use"), and the recent holding in *Citizen for Responsible Equitable Environmental Development v. City of Chula Vista* (2011) 197 Cal.App.4th 327, 335-336, ("[t]he determination of whether a project may have a significant effect on the environment calls for careful judgment on the part of the public agency involved, based to the extent possible on scientific and factual data."), the City has decided to apply the BAAQMD CEQA thresholds to the Plan Components.

²⁴ Congested intersections have the potential to create elevated concentrations of CO, referred to as CO hotspots.

gy, the SFBAAB is in attainment of the California and National AAQS, and CO concentrations in the SFBAAB have steadily declined. Because CO concentrations have improved, intersection volumes during the peak hour in the SFBAAB would not typically reach the level required to result in a CO hotspot.²⁵

b. Community Risk and Hazards

The BAAQMD's significance thresholds for local community risk and hazard impacts apply to both the siting of a new source and to the siting of a new receptor. Local community risk and hazard impacts are associated with TACs and PM_{2.5} because emissions of these pollutants can have significant health impacts at the local level. The City of Menlo Park is within one of the six impacted communities identified in BAAQMD's CARE program (Redwood City/East Palo Alto). The City of Menlo Park and San Mateo County do not have a qualified risk reduction plan for this area. For assessing community risk and hazards, sources within a 1,000-foot radius are considered. Sources are defined as freeways, high volume roadways (with volume of 10,000 vehicles or more per day or 1,000 trucks per day), and permitted sources.²⁶ For a plan-level analysis, BAAQMD requires:

- ◆ Overlay zones around existing and planned sources of TACs,
- ◆ Overlay zones of at least 500 feet from all freeways and high volume roads.

For a plan-level analysis, a project must also identify goals, policies, and objectives to minimize potential impacts and create overlay zones for sources of TACs and receptors.²⁷

i. Odors

BAAQMD's thresholds for odors are qualitative. BAAQMD has established odor screening thresholds for land uses that have the potential to generate substantial odor complaints, including wastewater treatment plants, landfills or transfer stations, composting facilities, confined animal facilities, food manufacturing, and chemical plants.²⁸

²⁵ Bay Area Air Quality Management District (BAAQMD), 2011 (Revised). California Environmental Quality Act Air Quality Guidelines.

²⁶ Bay Area Air Quality Management District (BAAQMD), 2011 (Revised). California Environmental Quality Act Air Quality Guidelines.

²⁷ Bay Area Air Quality Management District (BAAQMD), 2011 (Revised). California Environmental Quality Act Air Quality Guidelines.

²⁸ Bay Area Air Quality Management District (BAAQMD), 2011 (Revised). California Environmental Quality Act Air Quality Guidelines.

For a plan-level analysis, BAAQMD requires:

- ◆ Potential existing and planned location of odors sources to be identified.
- ◆ Policies to reduce odors.

D. Impact Discussion

1. Conflict with or obstruct implementation of the applicable air quality plan. (Appendix G Threshold 1)

a. Consistency with the 2010 Bay Area Clean Air Plan

Growth within the EA Study Area, including the future development sites, would result in additional sources of criteria air pollutants.

Growth accommodated within the City, as identified in the General Plan and within Plan Components, would occur over a 20-year or longer time horizon. As a result, BAAQMD's approach to evaluating impacts from criteria air pollutants generated by long-term growth associated with a plan-level project is done in comparison to BAAQMD's AQMP rather than a comparison of emissions to Project-Level significance thresholds. This is because BAAQMD's AQMP plans for growth within the SFBAAB are based on regional population and employment projections identified by ABAG and growth in VMT identified by C/CAG.²⁹ Changes in regional, community-wide emissions within the EA Study Area could affect the ability of BAAQMD to achieve the air quality goals as identified in the AQMP. Consequently, while criteria air pollutants generated by growth within the EA Study Area would be substantial, air quality impacts for a plan-level analysis are based on the consistency with the AQMP. The current AQMP is the 2010 Bay Area Clean Air Plan. BAAQMD considers the Plan Components consistent with the AQMP in accordance with the following:

i. Does the project support the primary goals of the AQMP?

The primary goals of the 2010 Bay Area Clean Air Plan are to attain air quality standards, reduce population exposure and protect public health in the Bay Area, and reduce GHG emissions and protect the climate.

²⁹ C/CAG's CMP is required to be consistent with MTC's Regional Transportation Improvement Program (RTIP).

a) Attain Air Quality Standards

The SFBAAB is currently designated a nonattainment area for O₃, PM_{2.5}, and PM₁₀ (state AAQS only). The growth projections for the EA Study Area are consistent with the population and employment projections identified by ABAG (see the VMT/Population consistency analysis below). Consequently, emissions within the EA Study Area are included in BAAQMD's projections and future development in the EA Study Area through the General Plan horizon year 2035 would not hinder BAAQMD's ability to attain the California or National AAQS. Accordingly, impacts would be *less than significant*.

b) Reduce Population Exposure and Protect Public Health

The EA Study Area is largely developed. Remaining growth would be accommodated in infill sites and re-development of existing sites. As identified in the discussion of community risk and hazards, Section D.2, Community Risk and Hazards below, new sensitive land uses could be proximate to major sources of TACs, and new industrial/commercial land uses could generate an increase in TACs. Adherence to BAAQMD regulations would ensure new sources of TACs do not expose populations to significant health risk; however, siting of land uses proximate to major sources of air pollution is outside the control of BAAQMD. These impacts are addressed separately under the discussion in Section D.2, Community Risk and Hazards, below. Implementation of the following current and amended General Plan goals, policies, and programs would ensure these impacts are *less than significant*.

b. Current General Plan Land Use and Circulation Element

- ◆ 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-H-2: The City shall support the use of water conserving plumbing fixtures in all new public and private development.
- ◆ Policy I-H-7: The City shall encourage the use of reclaimed water for landscaping and any other feasible uses.

c. Amended General Plan Open Space and Conservation Element

- ◆ Goal OSC-4: Promote Sustainability and Climate Action Planning: Promote a sustainable energy supply and implement City's Climate Action Plan to reduce greenhouse gas emissions and improve the sustainability of actions by City government, residents, and businesses in Menlo Park. This includes promoting land use patterns that reduce the number and length of motor vehicle trips, and promotion of recycling, reduction and reuse programs.

- ◆ Policy OSC-4.1: Sustainable Approach to Land Use Planning to Reduce Resource Consumption. Encourage, to the extent feasible, (1) a balance and match between jobs and housing, (2) higher density residential and mixed-use development to be located adjacent to commercial centers and transit corridors, and (3) retail and office areas to be located within walking and biking distance of transit or existing and proposed residential developments.
- ◆ Policy OSC-4.2: Sustainable Building. Promote and/or establish environmentally sustainable building practices or standards in new development that would conserve water and energy, prevent stormwater pollution, reduce landfilled waste, and reduce fossil fuel consumption from transportation and energy activities.
- ◆ OSC-4.3: Renewable Energy. Promote the installation of renewable energy technology, such as, on residences and businesses through education, social marketing methods, establishing standards and/or providing incentives.
- ◆ Policy OSC-2.7: Conservation of Resources at City Facilities. Reduce consumption of water, energy, landfilled waste, and fossil fuels in the construction, operations and maintenance of City owned and/or operated facilities.
- ◆ Policy OSC-1.12: Landscaping and Plazas. Include landscaping and plazas on public and private lands, and well-designed pedestrian and bicycle facilities in areas of intensive non-vehicular activity. Require landscaping for shade, surface runoff, or to obscure parked cars in extensive parking areas.
- ◆ Policy OSC-2.6: Pedestrian and Bicycle Paths. Develop pedestrian and bicycle paths consistent with the recommendations of local and regional trail and bicycle route projects, including the Bay Trail.
- ◆ Policy OSC-5.1: Air and Water Quality Standards. Continue to apply standards and policies established by the Bay Area Air Quality Management District (BAAQMD), San Mateo Countywide Water Pollution Prevention Program (SMCWPPP), and City of Menlo Park Climate Action Plan through the California Environmental Quality Act (CEQA) process and other means as applicable.
- ◆ Policy OSC-4.7: Waste Management Collaboration. Continue to support and participate in efforts such as the South Bay Waste Management Authority, which provides waste reduction, recycling, and solid waste programs and solutions.

a) Reduce GHG Emissions and Protect the Climate

GHG emissions impacts of the Plan Components are discussed in Chapter 4.6, Greenhouse Gas Emissions. To reduce community-wide GHG emissions, the City of Menlo Park has prepared and approved a CAP.

The City's most recent CAP is the 2011 Climate Action Plan Assessment Report.³⁰ The City's CAP identifies GHG reduction measures for municipal and community-wide operations. The City's CAP is consistent with the goals of the 2010 Bay Area Clean Air Plan to reduce GHG emissions and protect the climate. As identified above, the Plan Components would support the goals of the AQMD. New policies would be introduced as part of the General Plan Amendment to minimize impacts. With the additional goals, policies, and programs in the General Plan identified above, impacts would be *less than significant*.

ii. Does the project include applicable control measures from the AQMP?

Table 4.2-3 identifies the control measures included in the 2010 Bay Area Clean Air Plan and as shown, the previously listed current, modified, and new General Plan goals, policies and programs would ensure the plan components would be consistent with the 2010 Bay Area Clean Air Plan and the impact due to inconsistency would be *less than significant*.

iii. Does the project disrupt or hinder implementation of any AQMP control measures?

Table 4.2-3 identifies the control measures included in the 2010 Bay Area Clean Air Plan. As identified in the table, the Plan Components would not hinder BAAQMD from implementing the control measures in the 2010 Bay Area Clean Air Plan. Impacts are *less than significant*.

d. Per Service Population Project VMT v. Regional Per Service Population Estimates

The growth projections include implementation of the General Plan goals, policies, and programs, which could generate 1,318 new units and 3,361 people in the EA Study Area. As described in Chapter 4.11, Population and Employment, development associated with the Plan Components, including the 1,318 new units, is captured within the ABAG population forecast for the EA Study Area. The growth projections for the City of Menlo Park are consistent with the ABAG 2035 forecasts.

³⁰ City of Menlo Park, Climate Action Plan Assessment Report, 2011. http://www.menlopark.org/departments/env/Menlo_CAP_Assessment_Report_2010_12_14_draft_final_final6.pdf, accessed on September 27, 2012.

TABLE 4.2-3 CONTROL MEASURES FROM THE 2010 BAY AREA CLEAN AIR PLAN

Type	Measure Number / Title	Consistency
	<ul style="list-style-type: none"> • SSM 1 – Metal Melting Facilities • SSM 2 – Digital Printing • SSM 3 – Livestock Waste • SSM 4 – Natural Gas Processing and Distribution • SSM 5 – Vacuum Trucks • SSM 6 – General Particulate Matter Weight Rate Limitations • SSM 7 – Open Burning • SSM 8 – Cole Calcining • SSM 9 – Cement Kilns • SSM 10 – Refinery Boilers and Heaters • SSM 11 – Residential Fan Type Furnaces • SSM 12 – Space Heating • SSM 13 – Dryers, Ovens, Kilns • SSM 14 – Glass Furnaces • SSM 15 – Greenhouse Gases in Permitting Energy Efficiency • SSM 16 – Revise Regulation 2, Rule 2: New Source Review • SSM 17 – Revise Regulation 2, Rule 5 New Source Review for Air Toxics • SSM 18 – Revise Air Toxics “Hot Spot” Program 	<p>Stationary and area source control measures are sources regulated directly by BAAQMD. To implement the stationary and area source control measures, BAAQMD adopts/revises rules or regulations to implement the control measures and reduce emissions from stationary and area sources. Because BAAQMD is the implementing agency, new and existing sources of stationary and area sources within the City would be required to comply with these control measures in the 2010 Bay Area Clean Air Plan.</p>
Stationary and Area Sources Control Measures	<ul style="list-style-type: none"> • MSM A-1 – Promote Clean, fuel Efficient Light & Medium-Duty Vehicles • MSM A-2 – Zero Emission Vehicle and Plug-in Hybrids • MSM A-3 – Green Fleets (Light Medium & Heavy-Duty Vehicles) • MSM A-4 – Replacement or Repair of High Emitting Vehicles • MSM B-1 – HDV Fleet Modernization • MSM B-2 – Low NOx Retrofits for In-Use Engines • MSM B-3 – Efficient Drive Trains • MSM C-1 – Construction and Farming Equipment • MSM C-2 – Lawn & Garden Equipment • MSM C-3 – Recreational Vessels 	<p>Mobile Source Control Measures that would reduce emissions by accelerating the replacement of older, dirtier vehicles and equipment through programs such as the BAAQMD’s Vehicle Buy-Back and Smoking Vehicle Programs, and promoting advanced technology vehicles that reduce emissions. The implementation of these measures rely heavily upon incentive programs, such as the Carl Moyer Program and the Transportation Fund for Clean Air, to achieve voluntary emission reductions in advance of, or in addition to, CARB requirements. CARB has new regulations that require the replacement or retrofit of on-road trucks, construction equipment, and other specific equipment that is diesel powered. The Plan Components would not hinder the ability of BAAQMD to implement these regional programs.</p>

TABLE 4.2-3 CONTROL MEASURES FROM THE 2010 BAY AREA CLEAN AIR PLAN

Type	Measure Number / Title	Consistency
		<p>Transportation Control Measures (TCM) are strategies to reduce vehicle trips, vehicle use, VMT, vehicle idling, or traffic congestion for the purpose of reducing motor vehicle emissions. While most of the TCMs are implemented at the regional level – that is, by MTC or Caltrans – there are measures that the 2010 Bay Area Clean Air Plan relies upon local communities to assist with implementation.</p>
	<ul style="list-style-type: none"> • TCM A-1 – Improve Local and Regional Rail Service • TCM A-2 – Improve Local and Regional Rail Service • TCM B-1 – Implement Freeway Performance Initiative • TCM B-2 – Improve Transit Efficiency and Use • TCM B-3 – Bay Area Express Land Network • TCM B-4 – Goods Movement Improvements and Emission Reduction Strategies • TCM C-1 – Support Voluntary Employer-Based Trip Reduction Program 	<p>The City of Menlo Park Existing General Plan include goals and policies related to transportation and land use that would assist BAAQMD in meeting the regional goals of the 2010 Bay Area Clean Air Plan. Including:</p> <p><u>Transit (Rail & Bus Service)</u></p> <p>Policy II-B-1: The City shall consider transit modes in the design of transportation improvements and the review and approval of development projects.</p> <p>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 states the City shall promote improved public transit service and increased transit ridership, especially to office and industrial areas and schools.</p> <p>Policy II-B-4: The capacity and attractiveness of the commuter railroad service should be increased and rights-of-ways for future transit service should be protected.</p> <p>Policy II-B-5: The City shall work with appropriate agencies to agree on long-term peninsula transit service that reflects Menlo Park's desires and is not disruptive to the city.</p> <p>Policy II-B-6: The City shall support extension of CalTrain to the Market Street area in San Francisco.</p> <p><u>Pedestrian & Bicycle Facilities</u></p> <p>Policy I-G-11: Well-designed pedestrian facilities should be included in areas</p>
Transportation Control Measures	<ul style="list-style-type: none"> • TCM C-2 – Implement Safe Routes to Schools and Safe Routes to Transit • TCM C-3 – Promote Rideshare Service and Incentives • TCM C-4 – Conduct Public Outreach and Education • TCM C-5 – Promote Smart Driving/Speed Moderation • TCM D-1 – Improve Bicycle Access and Facilities • TCM D-2 – Improve Pedestrian Access and Facilities • TCM D-3 – Support Local Land Use Strategies • TCM E-1 – Value Pricing Strategies • TCM E-2 Parking Pricing and Management • TCM E-3 – Implement Transportation Pricing Reform 	

TABLE 4.2-3 CONTROL MEASURES FROM THE 2010 BAY AREA CLEAN AIR PLAN

Type	Measure Number / Title	Consistency
		of intensive pedestrian activity.
	Policy II-D-2: The City shall, within available funding, work to complete a system of bikeways within Menlo Park.	
	Policy II-D-3: The design of streets within Menlo Park shall consider the impact of street cross section, intersection geometries, 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.	
	Policy II-D-5: The City shall encourage transit providers within San Mateo County to provide improved bicycle access to transit including secure storage at transit stations and on-board storage where feasible.	
	Policy II-E-1: The City shall require all new development to incorporate safe and attractive pedestrian facilities on-site.	
	Policy II-E-1: The City shall endeavor to maintain safe sidewalks and walkways where existing within the public right of way.	
	Policy II-E-3: Apply the appropriate traffic control shall be provided for pedestrians at intersections.	
	Policy II-E-4: 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-5: The City shall 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.	
	<u>Commute Trip Reduction Programs</u>	
	Policy II-C-1: The City shall work with all Menlo Park employers to encourage employees to use alternatives to the single occupant automobile in their commute to work.	

TABLE 4.2-3 CONTROL MEASURES FROM THE 2010 BAY AREA CLEAN AIR PLAN

Type	Measure Number / Title	Consistency
	<p>Policy II-C-5: The City shall identify potential funding sources, including the Bay Area Air Quality Management District, to supplement City and private monies to support transportation demand management activities of the City and local employers.</p> <p>Policy II-C-6: The City shall, to the degree feasible, assist Menlo Park employers in meeting the Average Vehicle Ridership (AVR) targets established by the Bay Area Air Quality Management District.</p> <p>Policy II-C-7: The commuter shuttle service between the industrial work centers and the Downtown Transportation Center should be maintained and improved, within fiscal constraints. The City shall encourage SamTrans and other agencies to provide funding to support shuttle services.</p> <p>Program II-13: The City shall review the potential bicycle-related improvements identified in the General Plan. Potential improvements in the General Plan and or others identified by the City that are found to be feasible and desirable shall be incorporated into a Bicycle-Related Improvements Program.</p> <p>Policy OSC-2.6: Pedestrian and Bicycle Paths. Develop pedestrian and bicycle paths consistent with the recommendations of local and regional trail and bicycle route projects, including the Bay Trail.</p> <p>Policy OSC-1.12: Landscaping and Plazas. Include landscaping and plazas on public and private lands, and well-designed pedestrian and bicycle facilities in areas of intensive non-vehicular activity. Require landscaping for shade, surface runoff, or to obscure parked cars in extensive parking areas.</p> <p><u>School Programs</u></p> <p>Policy II-C-3: The City will consider working with the school districts to encourage alternatives to single-occupancy vehicle use, such as carpools and vanpools, for trips being generated by local schools.</p>	

TABLE 4.2-3 CONTROL MEASURES FROM THE 2010 BAY AREA CLEAN AIR PLAN

Type	Measure Number / Title	Consistency
		<p>Policy II-E-6 states the City shall prepare a safe school route program to enhance the safety of school children who walk to school.</p> <p><u>Other Regional Programs</u></p> <p>Policy II-C-4: The City shall coordinate its transportation demand management efforts with other agencies providing similar services within San Mateo County.</p>
		<p>The 2010 Bay Area Clean Air Plan also includes land use measures to reduce air quality emissions and/or air quality exposure in the SFBAAAB. The following policies support these land use measures:</p> <p>Policy OSC-4.1: Sustainable Approach to Land Use Planning to Reduce Resource Consumption. Encourage, to the extent feasible, (1) a balance and match between jobs and housing, (2) higher density residential and mixed-use development to be located adjacent to commercial centers and transit corridors, and (3) retail and office areas to be located within walking and biking distance of transit or existing and proposed residential developments.</p>
<p>Land Use and Local Impact Control Measures</p>	<ul style="list-style-type: none"> • LUM 1 – Goods Movement • LUM 2 – Indirect Source Review • LUM 3 – Enhanced CEQA Program • LUM 4 – Land Use Guidelines • LUM 5 – Reduce Risk in Impacted Communities • LUM 6 – Enhanced Air Quality Monitoring 	<p>Goal OSC-4: Promote Sustainability and Climate Action Planning: Promote a sustainable energy supply and implement City’s Climate Action Plan to reduce greenhouse gas emissions and improve the sustainability of actions by City government, residents, and businesses in Menlo Park. This includes promoting land use patterns that reduce the number and length of motor vehicle trips, and promotion of recycling, reduction and reuse programs.</p> <p>Policy OSC-5.1: Air and Water Quality Standards. Continue to apply standards and policies established by the Bay Area Air Quality Management District (BAAQMD), San Mateo Countywide Water Pollution Prevention Program (SMCWPPP), and City of Menlo Park Climate Action Plan through the California Environmental Quality Act (CEQA) process and other means as applicable.</p>

TABLE 4.2-3 CONTROL MEASURES FROM THE 2010 BAY AREA CLEAN AIR PLAN

Type	Measure Number / Title	Consistency
		<p>Policy I-I-1: The City shall cooperate with the appropriate agencies to help assure a coordinated land use pattern in Menlo Park and the surrounding area.</p>
		<p>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.</p>
		<p>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.</p>
		<p>In addition, the following measure is included to ensure that the City is able to adapt to changes in sea level rise associated with global climate change:</p>
	<p>Policy S-1.28: Sea Level Rise: Consider sea level rise in siting new facilities or residences within potentially affected areas.</p>	
		<p>The 2010 Bay Area Clean Air Plan also includes measures to reduce energy use, water use, and waste generation. The following policies support these energy efficiency and other sustainability measures:</p>
	<p>Policy OSC4.2: Sustainable Building. Promote and/or establish environmentally sustainable building practices or standards in new development that would conserve water and energy, prevent stormwater pollution, reduce landfilled waste, and reduce fossil fuel consumption from transportation and energy activities.</p>	
	<p>Policy OSC2.7: Conservation of Resources at City Facilities. Reduce consumption of water, energy, landfilled waste, and fossil fuels in the construction, operations and maintenance of City owned and/or operated facilities.</p>	
	<p>Policy OSC4.3: Renewable Energy. Promote the installation of renewable energy technology, such as, on residences and businesses through education,</p>	

- ECM 1 – Energy Efficiency
 - ECM 2 – Renewable Energy
 - ECM 3 – Urban Heat Island Mitigation
 - ECM 4 – Tree Planting
- Energy and Climate
 Control Measures

TABLE 4.2-3 CONTROL MEASURES FROM THE 2010 BAY AREA CLEAN AIR PLAN

Type	Measure Number / Title	Consistency
		social marketing methods, establishing standards and/or providing incentives.
		OSC4.7: Waste Management Collaboration. Continue to support and participate in efforts such as the South Bayside Waste Management Authority, which provides waste reduction, recycling, and solid waste programs and solutions.
		Policy I-A-3 states quality design and usable open space shall be encouraged in the design of all new residential developments.
		Policy I-H-1 states the community design should help conserve resources and minimize waste.
		Policy I-H-2 states that the use of water-conserving plumbing fixtures in all new public and private development shall be required.
		Policy I-H-3 states 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.
		Policy I-H-4 states the efforts of the Bay Area Water Users Association to secure adequate water supplies for the Peninsula shall be supported to the extent that these efforts are in conformance with other City policies.
		Policy I-H-7 states that the City shall encourage the use of reclaimed water for landscaping and any other feasible uses.
	<ul style="list-style-type: none"> • FSM 1 – Adhesives and Sealants • FSM 2 – Reactivity in Coating and Solvents • FSM 3 – Solvent Cleaning and Degreasing Operations • FSM 4 – Emissions from Cooling Towers • FSM 5 – Equipment Leaks • FSM 6 – Wastewater from Coke Cutting • FSM 7 – SO₂ from Refinery Processes • FSM 8 – Reduce Emission from LPG, Propane, Butane, and other Pressurized Gases 	The majority of the Further Study control measures are also sources regulated directly by BAAQMD. Because BAAQMD is the implementing agency, new and existing sources of stationary and area sources within the City would be required to comply with these additional further study control measures in the 2010 Bay Area Clean Air Plan.

TABLE 4.2-3 CONTROL MEASURES FROM THE 2010 BAY AREA CLEAN AIR PLAN

Type	Measure Number / Title	Consistency
	<ul style="list-style-type: none"> • FSM 9 – Greenhouse Gas Mitigation in BACT and TBACT Determinations • FSM 10 Further Reductions from Commercial Cooking Equipment • FSM 11 – Magnet Source Rule • FSM 12 – Wood Smoke • FSM 13 – Energy Efficiency and Renewable Energy • FSM 14 – Winery Fermentation • FSM 15 – Composting Operations • FSM 16 – Vanishing Oils and Rust Inhibitors • FSM 17 – Ferry System Expansion • FSM 18 – Greenhouse Gas Fee 	

Source: Bay Area Air Quality Management District (BAAQMD), September 2010, 2010 Bay Area Clean Air Plan.

VMT estimates for the City are provided by TJKM and adjusted for baseline (2012) population and employment in the EA Study Area. Land uses within the City generate 2,351,748 VMT per day (33.3 miles per service population per day in 2010). Based on the future estimates of VMT per person for the City of Menlo Park as projected by C/CAG and VTA for year 2035, buildout of the EA Study Area would generate 2,627,448 VMT per day (31.7 miles per service population per day in 2035). Table 4.2-4 compares the projected increase in service population with the projected increase in VMT within the EA Study Area. As shown in this table the projected change in population and employment from 2012 to 2035 would increase at a faster rate than the projected increase in daily VMT. BAAQMD requires that the VMT increase is less than or equal to the projected population increase. Consequently, impacts for the EA Study Area would be *less than significant*.

TABLE 4.2-4 COMPARISON OF THE CHANGE IN SERVICE POPULATION AND VMT IN THE EA STUDY AREA

Category	2012	2035	Change	Percent Change
Population	36,740	43,400	6,660	18%
Employment	33,960	39,570	5,610	17%
Total Service Population	70,700	82,970	12,270	17%
VMT/Day	2,351,748	2,627,448	275,700	12%

Notes: VMT is based on data provided by TJKM using the C/CAG model run by VTA.³¹ The VMT provided by VTA is adjusted based on the Population and Employment used in the C/CAG model compared to the population and employment estimated identified within the EA Study Area for 2035, assuming the same VMT per capita. Population and Employment is based on the ABAG's Subregional Study Area Population, Housing, Employment Forecasts.³²

³¹ TJKM Transportation Consultants, 2013. Traffic Study of updated Housing Element in the City of Menlo Park.

³² Association of Bay Area Governments (ABAG), 2009. Subregional Study Area Population, Housing, Employment Forecasts.

2. Violate any air quality standard or contribute substantially to an existing or projected air quality violation. (Appendix G Threshold 2)

a. Operational Emissions

BAAQMD's CEQA Air Quality Guidelines only require an emissions inventory of criteria air pollutants for Project-Level analyses. As identified in Section D.1, operational emissions associated with the Plan Components would generate an increase in criteria air pollutants. Although BAAQMD's Plan-Level guidelines do not require an evaluation of emissions for program-level projects, for the purpose of this environmental assessment the Plan Components are evaluated for their potential to result in a significant increase in criteria air pollutants. Because of the programmatic nature of the Plan Components, operational information regarding the Plan Components, including buildout year for each Plan Component is unknown. Furthermore, subsequent environmental review of Plan Components would be required to assess potential impacts under BAAQMD's Project Level thresholds. However, Plan Components have the potential to result in criteria air pollutant emissions that exceed BAAQMD's Project-Level significance thresholds. This is considered a *significant* impact.

b. Construction Emissions

Construction emissions associated with the Plan Components would also generate an increase in criteria air pollutants. Although BAAQMD's Plan-Level guidelines do not require an evaluation of construction emissions for program-level projects, for the purpose of this environmental assessment, construction-related impacts of the Plan Components are evaluated for their potential to result in a significant increase in criteria air pollutants. BAAQMD has developed Project-Level thresholds for construction activities. Subsequent environmental review of Plan Components would be required to assess potential impacts under BAAQMD's Project Level thresholds. Construction emissions from Plan Components would primarily be 1) exhaust emissions from off-road diesel-powered construction equipment; 2) dust generated by demolition, grading, earthmoving, and other construction activities; 3) exhaust emissions from on-road vehicles and 4) off-gas emissions of ROG's from application of asphalt, paints, and coatings. Because of the programmatic nature of the Plan Components, construction information regarding the Plan Components, including overlap of construction phases, demolition volumes, and construction equipment mix is unknown; and therefore an estimation of construction emissions associated with the Plan Components would be speculative. However, construction emissions associated with the Plan Components has the potential to result in exhaust emissions that exceed BAAQMD's Project-Level significance thresholds. In addition, construction of the Plan Components would also be required to include BAAQMD's "Basic Control Measures" for fugitive dust control. This is considered a *significant impact*.

3. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors). (Appendix G Threshold 3)

Potential changes to cumulative emissions of criteria air pollutants are evaluated based on BAAQMD's Plan Level Thresholds. BAAQMD's CEQA Air Quality Guidelines only require emissions computations for Project-Level analysis. Pursuant to the CEQA Guidelines Section 15130(b)(1), cumulative impacts can be based on the growth projections in a local General Plan. Consequently, the analysis included in Chapter 4.2, *Air Quality*, is the project's contribution to cumulative impacts. Air quality impacts of the Plan Components are evaluated based on the consistency analysis with BAAQMD's 2010 Bay Area Clean Air Plan and the rate of vehicle travel (trips or vehicle miles traveled) compared to population growth (see discussion D.1). Therefore, impacts are *less than significant*.

4. Expose sensitive receptors to substantial pollutant concentrations. (Appendix G Threshold 4)

a. Siting of New Receptors Near Major Sources of Toxic Air Contaminants

Because placement of sensitive land uses falls outside CARB jurisdiction, CARB developed and approved the *Air Quality and Land Use Handbook: A Community Health Perspective* to address the siting of sensitive land uses in the vicinity of freeways, distribution centers, rail yards, ports, refineries, chrome-plating facilities, dry cleaners, and gasoline-dispensing facilities.³³ This guidance document was developed to assess compatibility and associated health risks when placing sensitive receptors near existing pollution sources.

CARB's recommendations on the siting of new sensitive land uses were based on a compilation of recent studies that evaluated data on the adverse health effects ensuing from proximity to air pollution sources. The key observation in these studies is that close proximity to air pollution sources substantially increases both exposure and the potential for adverse health effects. There are three carcinogenic toxic air contaminants that constitute the majority of the known health risks from motor vehicle traffic: diesel particulate matter (DPM) from trucks and benzene and 1,3 butadiene from passenger vehicles. Table 4.2-5 shows a summary of CARB recommendations for siting new sensitive land uses within the vicinity of air-pollutant-generating sources. Recommendations in Table 4.2-5 are based on data that show that localized air pollution exposures can be reduced by as much as 80 percent by following CARB minimum distance separations. TAC sources within the EA Study Area include: stationary sources permitted by BAAQMD; roadways with more than 10,000 annual average daily traffic (AADT); and highways or freeways.

³³ California Air Resources Board (CARB), 2005. *Air Quality and Land Use Handbook: A Community Health Perspective*.

TABLE 4.2-5 CARB RECOMMENDATIONS FOR SITING NEW SENSITIVE LAND USES

Source/Category	Advisory Recommendations
Freeways and High-Traffic Roads	Avoid siting new sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles per day, or rural roads with 50,000 vehicles per day.
Distribution Centers	Avoid siting new sensitive land uses within 1,000 feet of a distribution center (that accommodates more than 100 trucks per day, more than 40 trucks with operating transport refrigeration units [TRUs] per day, or where TRU unit operations exceed 300 hours per week). Take into account the configuration of existing distribution centers and avoid locating residences and other sensitive land uses near entry and exit points.
Rail Yards	Avoid siting new sensitive land uses within 1,000 feet of a major service and maintenance rail yard. Within 1 mile of a rail yard, consider possible siting limitations and mitigation approaches.
Ports	Avoid siting of new sensitive land uses immediately downwind of ports in the most heavily impacted zones. Consult local air districts or CARB on the status of pending analyses of health risks.
Refineries	Avoid siting new sensitive land uses immediately downwind of petroleum refineries. Consult with local air districts and other local agencies to determine an appropriate separation.
Chrome Platers	Avoid siting new sensitive land uses within 1,000 feet of a chrome plater.
Dry Cleaners Using Perchloroethylene	Avoid siting new sensitive land uses within 300 feet of any dry cleaning operation. For operations with two or more machines, provide 500 feet. For operations with three or more machines, consult with the local air district. Do not site new sensitive land uses in the same building with perchloroethylene dry cleaning operations.
Gasoline Dispensing Facilities	Avoid siting new sensitive land uses within 300 feet of a large gas station (defined as a facility with a throughput of 3.6 million gallons per year or greater). A 50-foot separation is recommended for typical gas dispensing facilities.

Source: California Air Resources Board (CARB), May 2005, Air Quality and Land Use Handbook: A Community Health Perspective.

Stationary sources in Menlo Park were identified using BAAQMD's *Stationary Source Screening Analysis Tool*.³⁴ Figure 4.2-1 identifies approximately 70 potential stationary sources in or near the City of Menlo Park. Of these sources, approximately 30 are industrial uses or medical facilities, 21 are emergency diesel

³⁴ BAAQMD Stationary Source Screening Analysis Tool, 2012, can be accessed from BAAQMD's website at <http://www.baaqmd.gov/Divisions/Planning-and-Research/CEQA-GUIDELINES/Tools-and-Methodology.aspx>.

generators, nine are gas stations, six are dry cleaning facilities, two are furniture refinishing facilities, one is an offset printing facility, and one is a golf course.

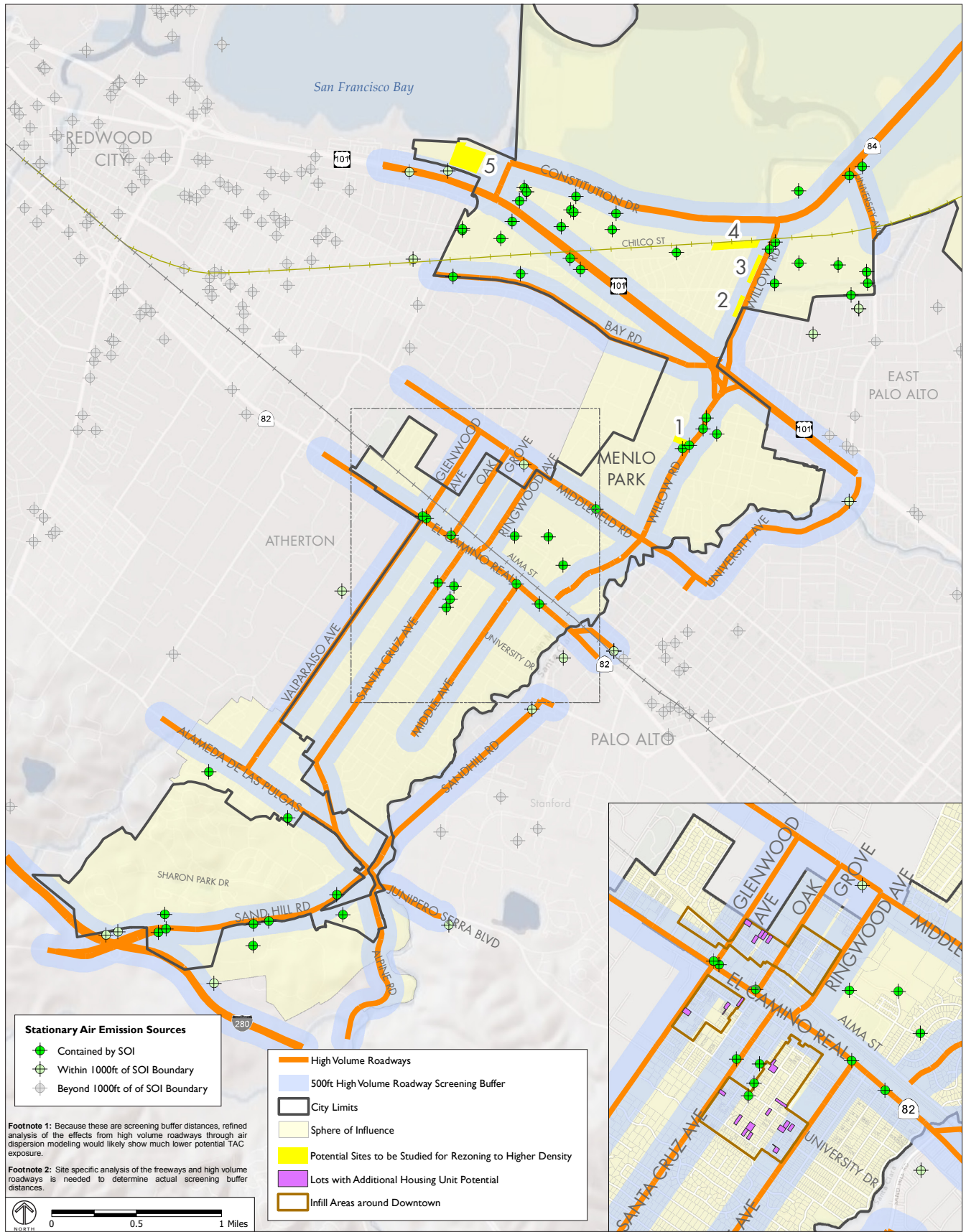
High-volume roadways with over 10,000 vehicles per day were also mapped.³⁵ A total of 18 high volume roadways were identified within 1,000 feet of the EA Study Area, including Highways 101 and 280, and State Routes 84 and 82. Figure 4.2-1 also identifies a 500-foot buffer around high-volume roadways. Because these are screening distances, refined analysis of the effects from many of the high volume roadways would likely show much lower potential TAC exposure and smaller buffer zones. A refined analysis or site-specific health risk assessment should be conducted for all new sensitive sources that are sited within the buffer zone to determine the actual health impact.

As identified previously, Menlo Park is within one of the six impacted communities identified in BAAQMD's CARE program (Redwood City/East Palo Alto). Figure 4.2-1 identifies several major areas of the City that have the potential to expose sensitive receptors to substantial pollutant concentrations within 1,000 feet of the sources identified. Future residential development permitted under the Plan Components is proximate to these areas and would require subsequent analysis in this regard; thus impacts would be *significant*.

b. Siting of New Sources of TACs

Various industrial and commercial processes (e.g. manufacturing, dry cleaning) allowed under the existing General Plan would be expected to release TACs. Existing land uses that have the potential to generate substantial stationary sources of emissions that would require a permit from BAAQMD for emissions of TACs include industrial land uses, such as chemical processing facilities, chrome-plating facilities, dry cleaners, and gasoline-dispensing facilities. Emissions of TACs would be controlled by BAAQMD through permitting and would be subject to further study and health risk assessment prior to the issuance of any necessary air quality permits under BAAQMD Regulation 2, Rule 2, *New Source Review*, and Rule 5, *New Source Review of Toxic Air Contaminants*. The exact nature of these emissions would be subject to further regulation and permitting and are not further addressed in this analysis. While the potential future residential development would not in result in these types of emission, land uses permitted under the current General Plan could.

³⁵ TJKM Transportation Consultants, 2013. Traffic Study of updated Housing Element in the City of Menlo Park.



Source: City of Menlo Park: The Planning Center | DC&E, 2012; ESRI 2010; Bay Area Air Quality Management District, 2012.

FIGURE 4.2-1

SOURCES OF TOXIC AIR CONTAMINANTS IN THE EA STUDY AREA

Area sources of TACs are not regulated by BAAQMD. The primary area source of TACs within the EA Study Area is truck idling, transport refrigeration units for cold storage, and use of off-road equipment at warehousing operations. Warehousing operations could generate a substantial amount of diesel particulate matter (DPM) emissions from off-road equipment use and truck idling. In addition, some warehousing and industrial facilities may include use of transport refrigeration units (TRUs) for cold-storage. New land uses in the EA Study Area that are permitted under the current General Plan that use trucks, including trucks with TRUs, could generate an increase in DPM that would contribute to cancer and non-cancer health risk in the SFBAAB. These new land uses could be near existing sensitive receptors within and outside the EA Study Area. In addition, trucks would travel on regional transportation routes through the SFBAAB contributing to near-roadway DPM concentrations. As stated above, while the potential future residential development would not contribute to the release of TAC, land uses permitted under the existing General Plan could; thus impacts would be *significant*.

5. Create objectionable odors affecting a substantial number of people. (Appendix G Threshold 6)

Growth within the EA Study Area would generate new sources of odors and place sensitive receptors near existing sources of odors. Table 4.2-6 identifies screening distances from potential sources of objectionable odors within the SFBAAB. Odors from these types of land uses are regulated under BAAQMD Regulation 7, *Odorous Substances*. It should be noted that while restaurants can generate odors, these sources are not identified by BAAQMD as nuisance odors since they typically do not generate significant odors that affect a substantial number people. Larger restaurants that employ five or more people, are subject to BAAQMD Regulation 7, *Odorous Substances*.

Major sources of nuisance odors may occur within the EA Study Area. There are two types of odor impacts: 1) siting sensitive receptors near nuisance odors, and 2) siting new sources of nuisance odors near sensitive receptors. While not all sources in Table 4.2-6 are likely in the City (e.g. rendering plants, confined animal facilities), commercial and industrial areas in the EA Study Area have the potential to include land uses that generate nuisance odors (see Figure 4.2-1, which identifies an overlay over commercial and industrial areas in the EA Study Area that has the potential to generate TAC and can also be used to identify land uses that have the potential to generate nuisance odors). Sensitive receptors, such as the residential uses associated with the potential future development planned for under the Plan Components, may be placed proximate to these sources within the distances specified in Table 4.2-6. Buildout permitted under the General Plan could include new sources of odors, such as composting, greenwaste, and recycling operations, food processing, chemical manufacturing, and painting/coating operations, since these are permitted uses in the commercial and/or industrial areas in the City.

TABLE 4.2-6 BAAQMD ODOR SCREENING DISTANCES

Land Use/Type of Operation	Screening Distance
Wastewater Treatment Plant	2 miles
Wastewater Pumping Facilities	1 mile
Sanitary Landfill	2 miles
Transfer Station	1 mile
Composting Facility	1 mile
Petroleum Refinery	2 miles
Asphalt Batch Plant	2 miles
Chemical Manufacturing	2 miles
Fiberglass Manufacturing	1 mile
Painting/Coating Operations	1 mile
Rendering Plant	2 miles
Coffee Roaster	1 mile
Food Processing Facility	1 mile
Confined Animal Facility/Feed Lot/ Dairy	1 mile
Green Waste and Recycling Operations	1 mile
Metal Smelting Plans	2 miles

Source: Bay Area Air Quality Management District (BAAQMD), 2011, California Environmental Quality Act Air Quality Guidelines, Table 3-3-, Odor Screening Distances, and Appendix D.

In general, the City’s land use plan designates residential areas and commercial/industrial areas of the City to prevent potential mixing of incompatible land use types, with the exception of mixed-use areas that combine commercial with residential. Implementation of General Plan Policy I-A-4, which states that 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 would minimize compatibility impacts for residential mixed-use projects.

Future environmental review could be required for new development projects and industrial projects to ensure that sensitive land uses are not exposed to nuisance odors. Furthermore, BAAQMD Regulation 7, *Odorous Substances*, requires abatement of any nuisance generated by an odor complaint. Typical abatement includes passing air through a drying agent followed by two successive beds of activated carbon to generate odor free air. For new industrial types of development listed in Table 4.2-6, facilities would need to consider these measures as part of their CEQA review. Consequently, review of projects with BAAQMD's odor screening distances, adherence to the General Plan Policy I-A-4, and adherence of odor-generating sources with BAAQMD Regulation 7, *Odorous substances*, would ensure that odor impacts are minimized to *less-than-significant* levels.

6. Cumulative Impacts

This section analyzes potential impacts related to air quality that could occur from a combination of the Plan Components with regional growth within the SFBAAB. Any project that produces a significant project-level regional air quality impact in an area that is in nonattainment adds to the cumulative impact. Because the Plan Components evaluate growth in the EA Study Area under BAAQMD's Plan-level threshold, the impact analysis is an assessment of the cumulative impacts of growth of the Plan Components in the SFBAAB. Pursuant to the CEQA Guidelines Section 15130(b)(1), cumulative impacts can be based on the growth projections in a local General Plan. Consequently, the analysis included in Chapter 4.2, *Air Quality*, is the Plan Component's contribution to cumulative impacts.

E. Impacts and Mitigation Measures

Impact AQ-1: Subsequent environmental review of the Plan Components may identify that construction and operational phase emissions would exceed BAAQMD's Project-Level significance thresholds. As discussed under Section D.2, Violate any air quality standard or contribute substantially to an existing or projected air quality violation (Appendix G Threshold 2), this is considered a significant impact.

Mitigation Measure AQ-1: Applicants for future development projects shall comply with the following Bay Area Air Quality Management District Basic Control Measures for reducing construction emissions of PM₁₀:

- ◆ Water all active construction areas at least twice daily, or as often as needed to control dust emissions. Watering should be sufficient to prevent airborne dust from leaving the site. Increased watering frequency may be necessary whenever wind speeds exceed 15 mph. Reclaimed water should be used whenever possible.
- ◆ Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least two feet of freeboard (i.e. the minimum required space between the top of the load and the top of the trailer).
- ◆ Pave, apply water twice daily or as often as necessary, to control dust, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas, and staging areas at construction sites.
- ◆ Sweep daily (with water sweepers using reclaimed water if possible), or as often as needed, with water sweepers all paved access roads, parking areas and staging areas at the construction site to control dust.
- ◆ Sweep public streets daily (with water sweepers using reclaimed water if possible) in the vicinity of the project site, or as often as needed, to keep streets free of visible soil material.
- ◆ Hydroseed or apply non-toxic soil stabilizers to inactive construction areas.
- ◆ Enclose, cover, water twice daily or apply non-toxic soil binders to exposed stockpiles (dirt, sand, etc.).
- ◆ Limit vehicle traffic speeds on unpaved roads to 15 mph.
- ◆ Replant vegetation in disturbed areas as quickly as possible.
- ◆ Install sandbags or other erosion control measures to prevent silt runoff from public roadways

Significance after Mitigation: Mitigation Measure AQ-1 would require adherence to Bay Area Air Quality Management District's (BAAQMD) Basic Control Measures for fugitive dust control. An analysis of emissions generated operation and construction of subsequent Plan Components would be required to evaluate emissions compared to BAAQMD's Project-Level significance thresholds during individual environmental review. It should be noted that the identification of this program-level impact does not preclude the finding of future less-than-significant impact for subsequent projects that comply with BAAQMD screening criteria or meet applicable thresholds of significance. However, due to the programmatic nature of the Plan Components, no additional mitigating policies are available and the impact is considered *significant and unavoidable*.

Impact AQ-2: Under the Plan Components, future residential development is proximate to substantial pollutant concentrations and as discussed under Section D.4, Expose sensitive receptors to substantial pollutant concentrations (Appendix G Threshold 4), this is considered a significant impact.

Mitigation Measure AQ-2: Prior to issuing building permits, the City shall evaluate all new residential development pursuant to current guidelines (e.g. Bay Area Air Quality Management District CEQA Guidelines), including a risk assessment of all stationary and mobile emission sources within a 1,000-foot radius of the proposed project that emit sources of toxic air contaminants.

Significance After Mitigation: Implementation of Mitigation Measure AQ-2 would ensure that siting of receptors near major sources would be below BAAQMD's significance thresholds and impacts related to community risk and hazards from placement of sensitive receptors proximate to major sources of air pollution would be *less than significant*.

Impact AQ-3: While the potential future residential development would not release TACs, various industrial and commercial processes (e.g. manufacturing, dry cleaning) allowed under the existing General Plan would be expected to release TACs resulting in community risk and hazards from placement of new sources of air toxics near sensitive receptors.

Mitigation Measure AQ-3: Prior to issuing building permits, the City shall evaluate all new industrial development pursuant to current guidelines (e.g. Bay Area Air Quality Management District CEQA Guidelines) to determine its potential to emit toxic air contaminants and impact sensitive receptors (e.g. residences, day care centers, schools, or hospitals) within a 1,000-foot radius of the project site.

Significance After Mitigation: Implementation of Mitigation Measure AQ-2 would ensure the Plan Components would be below the BAAQMD's significance thresholds and community risk and hazards impacts would be *less than significant*.

4.3 BIOLOGICAL RESOURCES

This chapter describes existing biological resources in the EA Study Area and evaluates the potential environmental consequences of future development that could occur by adopting and implementing the proposed Housing Element Update, General Plan Consistency Update, and associated Zoning Ordinances amendments, together referred to as the “Plan Components” on biological resources. A summary of the relevant regulatory setting and existing conditions is followed by a discussion of the Plan Components and cumulative impacts.

A. Regulatory Framework

This section summarizes key State and City regulations and programs related to biological resources in Menlo Park.

1. Federal Laws and Regulations

a. Federal Endangered Species Act

The United States Fish and Wildlife Service (USFWS) and National Oceanic and Atmospheric Administration’s National Marine Fisheries Service (NMFS) have jurisdiction over species that are formally listed as threatened or endangered under the federal Endangered Species Act (ESA). The ESA protects listed wildlife species from harm. As defined in the ESA, an endangered plant or wildlife species is one that is considered in danger of becoming extinct throughout all, or a significant portion of its range. A threatened species is one that is likely to become endangered within the foreseeable future. In addition to endangered and threatened species, which are legally protected under the federal ESA, the USFWS has a list of proposed and candidate species. Proposed species are those for which a proposed rule to list them as endangered or threatened has been published in the Federal Record. A candidate species is one for which the USFWS currently has enough information to support a proposal to list it as a threatened or endangered species. These latter species are not afforded legal protection under the federal ESA.

The protection of listed species under the federal ESA extends to development projects in Menlo Park as well as an individual’s actions in Menlo Park.

b. Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) implements various treaties and conventions between the United States and Canada, Japan, Mexico, and the former Soviet Union for the protection of migratory birds. Unless permitted by regulations, this Act provides that it is unlawful to pursue, hunt, take, capture or kill, attempt to take, capture or kill, possess, offer, sell, barter, purchase, deliver or cause to be shipped, exported,

imported, transported, carried, or received any migratory bird, part, nest, egg or product, manufactured or not.

In short, under the MBTA it is illegal to remove vegetation containing nests that are in active use, since this could result in death of a bird or destruction of an egg. This would also be a violation of California Department of Fish and Wildlife¹ (CDFW) code (see State Regulations below).

c. Clean Water Act

The federal Clean Water Act (CWA) is the primary federal law regulating water quality. The implementation of the CWA is the responsibility of the United States Environmental Protection Agency (U.S. EPA). The U.S. EPA depends on other agencies, such as the individual state government and the United States Army Corps of Engineers (USACE), to assist in implementing the CWA. The objective of the CWA is to “restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.” Section 401 and 404 apply to project activities that would impact waters of the U.S. (U.S.) (creeks, ponds, wetlands, etc.).

i. *Section 404 of the Clean Water Act*

The USACE, the federal agency charged with investigating, developing, and maintaining the country’s water and related resources, is responsible under Section 404 of the CWA for regulating the discharge of fill material into waters of the U.S. Waters of the United States and their lateral limits are defined in Part 328.3(a) of Title 33 of the Code of Federal Regulations (CFR) and include streams that are tributaries to navigable waters and adjacent wetlands. The lateral limits of jurisdiction for a non-tidal stream are measured at the line of the Ordinary High Water Mark² or the limit of adjacent wetlands.³ Any permanent extension of the limits of an existing water of the U.S., whether natural or human-made, results in a similar extension of USACE jurisdiction.⁴

In general, a USACE permit must be obtained before an individual project in the EA Study Area can place fill or grade in wetlands or other waters of the U.S., and mitigation for such actions will be required based on the conditions of the USACE permit. The USACE will be required to consult with the USFWS and/or

¹ As of January 1, 2013, the California Department of Fish and Game changed their name to the California Department of Fish and Wildlife.

² 33 CFR Part 328.3(e).

³ 33 CFR Part 328.3(b).

⁴ 33 CFR Part 328.5.

the NMFS under Section 7 of the ESA (described in Section A.1.a) if the action being permitted under the CWA could affect federally listed species.

ii. Section 401 of the Clean Water Act

Pursuant to Section 401 of the Clean Water Act, projects that require a USACE permit for discharge of dredge or fill material must obtain a water quality certification or waiver that confirms the project complies with State water quality standards, or a no-action determination, before the USACE permit is valid. State water quality is regulated and administered by the State Water Resources Control Board (SWCB). The EA Study Area is within jurisdiction of the San Francisco Bay Regional Water Quality Control Board (RWQCB). In order for the applicable RWQCB to issue a 401 certification, a project must demonstrate compliance with the California Environmental Quality Act (CEQA).

2. State Laws and Regulations

a. California Endangered Species Act

The California Endangered Species Act (CESA) establishes the policy of the State to conserve, protect, restore, and enhance threatened or endangered species and their habitats. The California Department of Fish and Wildlife (CDFW) has jurisdiction over threatened or endangered species that are formally listed under CESA. The CESA does not supersede the federal ESA, but operates in conjunction with it. Species may be listed as threatened or endangered under one or both Acts. State listing of plants began in 1977 with passage of the Native Plant Protection Act (NPPA). The CESA expanded upon the NPPA and enhanced legal protection for plants. To align with federal regulations, CESA created the categories of threatened and endangered species. It grandfathered all rare animals into the CESA as threatened species, but did not do so for rare plants.

The CDFW also maintains lists of California “Species of Special Concern” (SSC). These species are broadly defined as plants and wildlife that are of concern to CDFW because of population declines and restricted distributions and/or because they are associated with habitats that are declining in California. In addition, wildlife species designated “Fully Protected” or “Protected” may not be taken or possessed without a permit from the CDFW.

b. California Fish and Game Code

In addition to administering the CESA, CDFW administers the California Fish and Game Code. The CDFW has jurisdiction that extends to the top of the river bank and often includes the outer edge of riparian vegetation canopy cover and requires a Streambed Alteration Agreement for the fill or removal of any

material from any natural drainage, as defined under Sections 1600 to 1616. Similar to the water quality regulations administered by the RWQCB, a project must demonstrate compliance with CEQA before a permit may be issued.

Section 3503 of the Fish and Game Code makes it unlawful to take, possess, or needlessly destroy the nests or eggs of any bird. Section 3503.5 makes it unlawful to take or possess birds of prey (e.g. hawks, eagles, vultures, and owls), or destroy their nests or eggs.

c. California Environmental Quality Act

i. *California Native Plant Society Inventory*

The California Native Plant Society (CNPS) is a non-profit conservation organization dedicated to the preservation of native flora in California. The CNPS has been involved in assembling, evaluating, and distributing information on special-status plant species in the State, as listed in the *Inventory of Rare and Endangered Plants of California* (2001 and electronic inventory update). The CNPS rating system for the rarity of special-status plants includes both a California Rare Plant Rank and a Threat Rank.

All of the plant species with a California Rare Plant Rank on Lists 1A (presumed extinct in California), 1B (rare, threatened, or endangered in California and elsewhere), and 2 (rare and endangered in California, but are more common elsewhere) meet the requirements of the NPPA (Section 1901, Chapter 10) or Section 2062 and 2067 of CESA, and are eligible for State listing. As such, species maintained by CNPS on these three rankings should be considered special-status species under the CEQA. Some species with a Rare Plant Rank of 3 (species for which additional data are needed) also meet the requirements for State listing. Very few plants with a Rare Plant Rank of 4 (species of limited distribution) are eligible for listing but may be locally important and their listing status could be elevated by local agencies if conditions change.

The CDFW recognizes that special-status plants with a California Rare Plant Rank of 1A, 1B, and 2 in the CNPS Inventory consist of plants that, in a majority of cases, would qualify for listing, and that these species should be addressed under CEQA review. In addition, the CDFW recommends, and local governments may require, protection of species which are regionally significant, such as locally rare species, disjunct populations, essential nesting, and roosting habitat for more common wildlife species, or plants with a CNPS California Rare Plant Rank of 3 and 4.

ii. California Natural Diversity Database

The California Natural Diversity Database (CNDDDB) provides an inventory of sensitive natural communities. Sensitive natural communities are natural community types considered to be rare or of a “high inventory priority” by the CDFW. Although sensitive natural communities have no legal protective status under the federal ESA or CESA, they are provided some level of consideration under CEQA. Appendix G of the CEQA Guidelines identifies potential impacts on a sensitive natural community as one of six criteria to consider in determining the significance of a proposed project. While no thresholds are established as part of this criterion, it serves as an acknowledgement that sensitive natural communities are an important resource and, depending on their rarity, should be recognized as part of the environmental review process. The level of significance of a project’s impact on any particular sensitive natural community will depend on that natural community’s relative abundance and rarity.

As an example, a discretionary project that has a substantial adverse effect on any riparian habitat, native grassland, valley oak woodland and/or other sensitive natural community would normally be considered to have a significant effect on the environment. Further loss of a sensitive natural community could be interpreted as substantially diminishing habitat, depending on its relative abundance, quality and degree of past disturbance, and the anticipated impacts to the specific community type.

d. Porter-Cologne Water Quality Control Act

This Act authorizes the RWQCB to regulate the discharge of waste that could affect the quality of the State’s waters. Projects that do not require a federal permit may still require review and approval by the RWQCB. The RWQCB focuses on ensuring that projects do not adversely affect the “beneficial uses” associated with waters of the State. In most cases, the RWQCB requires the integration of water quality control measures into projects that will require discharge into waters of the State. For most construction projects, the RWQCB requires the use of construction and post-construction Best Management Practices (BMPs). More on prevention of soil erosion into local creeks can be found in Chapter 4.8, Hydrology and Water Quality.

The San Francisco Bay RWQCB would be concerned with stormwater runoff and activities in Menlo Park that directly impact creeks, ponds, or wetlands. Also as noted in the discussion of the federal CWA in Section A.1.c, the RWQCB has jurisdiction under section 401 of the CWA.

The RWQCB has also been involved with the Baylands Ecosystem Habitat Goals Project, which is discussed in Section A.3, Local Regulations and Policies, below.

i. Oak Woodlands Conservation Act

The California Oak Woodlands Conservation Act⁵ of 2001 acknowledges the importance of private land stewardship to the conservation of the state's valued oak woodlands. This Act established the California Oak Woodlands Conservation Program, which aims to conserve oak woodlands existing in the state's working landscapes by providing education and incentives to private landowners. The program provides technical and financial incentives to private landowners to protect and promote biologically-functional oak woodlands.

3. Local Regulations and Policies

a. Menlo Park General Plan

The City of Menlo Park General Plan includes goals, policies, and actions relevant to the environmental factors potentially affected by the Plan Components. Relevant policies are identified later in this chapter under Section D, Impact Discussion.

b. City of Menlo Park Municipal Code

i. Chapter 12.44, Water-Efficient Landscaping

The City of Menlo Park Municipal code includes regulations regarding invasive species and noxious weeds under Chapter 12.44, Water-Efficient Landscaping. Invasive species are defined as those plants not historically found in California that spread outside cultivated areas and can damage environmental or economic resources. A noxious weed refers to any weed designated by the weed control regulations in the Weed Control Act and identified on a regional district noxious weed control list. In addition, Section 12.44.070(1)(F) states that the use of invasive and/or noxious plant species is prohibited.

ii. Chapter 13.24, Heritage Trees

The City of Menlo Park Municipal code establishes regulations for the preservation of heritage trees under Chapter 13.24, Heritage Trees. This chapter defines heritage trees as:

- i) trees of historical significance, special character or community benefit, specifically designated by resolution of the City Council;
- ii) an oak tree (*Quercus* sp.), 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; and

⁵ California Fish and Game Code Section 1360 et seq.

- iii) 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, with the exception of trees that are less than 12 feet in height, which will be exempt from this section.

For residential properties, one tree must be planted for each tree removed. The City provides a list of recommended trees, but any species that will mature to a height of at least 30 feet is required. Replacement trees for commercial development projects are generally two for one removed, but the final replacement ratio may depend upon a variety of factors, including but not limited to the proposed size and species of the trees, the size of the lot, the existing trees on a site to remain, and the health of the trees.⁶

To protect heritage trees, Section 13.24.025 requires that a tree protection plan prepared by a certified arborist be submitted for any work performed within a tree protection zone, which is an area ten times the diameter of the tree. Furthermore, all tree protection plans should be reviewed and approved by the Director of Community Development or his or her designee prior to issuance of any permit for grading or construction.

The removal of heritage trees or pruning of more than one-fourth of the branches or roots within a 12-month period requires a permit from the City's Director of Public Works or his or her designee and payment of a fee. The Director of Public Works may issue a permit when the removal or major pruning of a heritage tree is reasonable based on following criteria:

- “ The condition of the tree or trees with respect to disease, danger of falling, proximity to existing or proposed structures and interference with utility services;
- “ The necessity of removing the tree or trees in order to construct proposed improvements to the property;
- “ The topography of the land and the effect of the removal of the tree on erosion, soil retention and diversion or increased flow of surface waters;
- “ The long-term value of the species under consideration, particularly lifespan and growth rate;
- “ The ecological value of the tree or group of trees, qualified in terms of food, nesting, habitat, protection and shade for wildlife or other plant species;

⁶ City of Menlo Park, no date. Frequently Asked Questions. Accessed January 9, 2013 from: http://www.menlopark.org/departments/pln/htree/tree_faqs.pdf.

- “ The number, size, species, age distribution and location of existing trees in the area and the effect the removal would have upon shade, privacy impact and scenic beauty;
- “ The number of trees the particular parcel can adequately support according to good arboricultural practices;
- “ The availability of reasonable and feasible alternatives that would allow for the preservation of the tree(s).

c. Tree Protection Specifications

Additionally, Menlo Park has established a series of construction-related Tree Protection Specification measures that must be taken to protect any trees that are not designated for removal.⁷ The construction-related measures include designating a Tree Protection Zone, requiring the oversight of a project arborist, protective fencing, sheeting, and paying particular attention to minimize damage to tree roots, limbs, or the spilling of harmful materials at the roots of these trees during the laying of piping.

d. Habitat Conservation Plan

There are no adopted Habitat Conservation Plans (HCPs) or Natural Community Conservation Plans within the EA Study Area. At the time of writing this EA, Stanford University is preparing an HCP that has not yet been adopted. The Final Environmental Impact Statement for the Stanford HCP has been published and HCP implementation is scheduled for spring 2013.⁸ Portions of the EA Study Area are within unincorporated San Mateo County are included in the Stanford HCP, but no potential housing sites included in the Plan Components are located in the Stanford HCP. Once adopted, any development that takes place within the Stanford HCP boundaries would be subject to the standards set forth in the Stanford HCP.

B. Existing Conditions

This section provides a discussion of the existing biological conditions in Menlo Park, which includes the natural and built environment, special-status plant and wildlife species, sensitive habitats, and wildlife dis-

⁷ Menlo Park, 2009. Tree Protection Specifications. http://www.menlopark.org/departments/bld/tree_Specifications09.pdf.

⁸ Stanford University, Stanford University Habitat Conservation Plan Project Schedule, <http://hcp.stanford.edu/schedule.html>, accessed on December 7, 2012.

persal corridor. The following topographical subareas provide the basis for the biological setting in the EA Study Area.

1. The eastern edge of the City, east of U.S. 101 to the Bay, consists of near-sea-level elevation flat land roughly 4 to 10 feet above sea level. This area is comprised of coastal salt marshes, mudflats, as well as urbanized land or baylands.
2. Central Menlo Park, lying southwest of U.S. 101 and northeast of Alameda de las Pulgas, is gently sloping from roughly 20 feet above sea level to 130 feet above sea level, and consists mostly of flat, urbanized area.
3. The south-southeast border of central Menlo Park is flanked by a major stream, the San Francisquito Creek riparian canopy, and channel.⁹
4. The far western side of Menlo Park, located from the south-southwestern edge of Alameda de las Pulgas to City limits, is roughly 130 to 300 feet above sea level and consists of the hilly grasslands of Jasper Ridge (part of the Santa Cruz Mountains), which have been partially urbanized.

1. Natural Environment

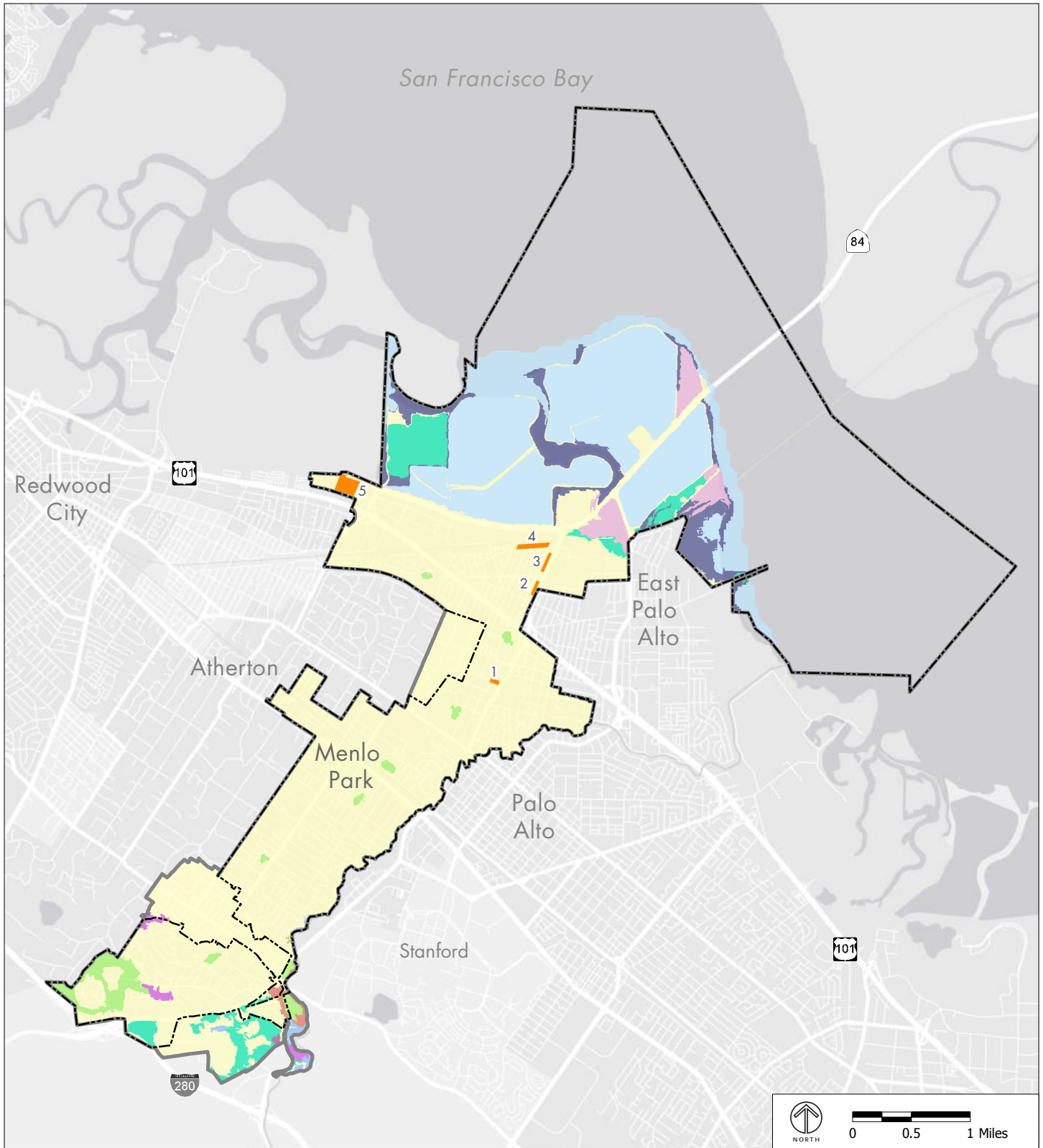
The natural community types in Menlo Park are defined by a combination of dominant plant community characteristics, landform, land use, and ecological function. These natural communities correspond to the geographic regions within the City as noted above. The existing vegetation in the EA Study Area is shown in Figure 4.3-1. The natural communities, summarized below, include the following:

- “ Coastal Salt Marsh and Salt Ponds
- “ Tidal Mudflats
- “ San Francisquito Creek
- “ Oak Woodlands
- “ Grasslands

a. Coastal Salt Marsh and Salt Ponds

Salt ponds and marshes once covered the edges of Bay, including the baylands in Menlo Park. In 1850, the conversion of these marshes through diking and filling began, and by 1969, just 75 square miles remained throughout the San Francisco Bay Area. Menlo Park has large, intact marshes within its borders.

⁹ City of Menlo Park, 1994. Amendments to the City of Menlo Park General Plan and to the City of Menlo Park General Plan and Zoning Ordinance, Final Environmental Impact Report, page IV.K-1.



Source: City of Menlo Park; The Planning Center | DC&E, 2012; ESRI 2010; USDE Forest Service, March 2007.

- | | | |
|--|--------------------------|-------------------------|
| California Bay | Riparian Mixed Hardwoods | Potential Housing Sites |
| Annual Grasses and Forbs | Tule - Cattail | City Limits |
| Coast Live Oak | Urban | Study Area |
| Non-Native/Ornamental Conifer/Hardwood Mixture | Valley Oak | |
| Non-Native/Ornamental Grass | Water | |
| Pickleweed - Cordgrass | | |

FIGURE 4.3-1

EXISTING VEGETATION

Ravenswood Slough, Westpoint Slough, and Flood Point Slough contribute to the approximately 2,300 acres of tidal mudflats and 300 acres of salt marsh of the City.¹⁰ These salt and brackish water marshes that border the Bay are a part of the Don Edwards Bay National Wildlife Refuge, and are associated with the South Bay Salt Pond Restoration Project.¹¹ Most of the salt ponds and marshes in or near Menlo Park have been restored to or are retained in their natural state.

Coastal salt marshes are closely associated with tidal action and are characterized by sloughs (marshy creeks). These habitats are dominated by native species such as pickleweed and edged by cordgrass and salt grass. Coastal salt marshes are high biodiversity wildlife habitats, and are associated with a wide variety of native shorebirds, raptors, songbirds, waterfowl, fish, and crustaceans. Special status species are not uncommon in San Francisco Bay Area salt marshes.

b. Tidal Mudflats

Tidal mudflats consist of unvegetated mud deposits along the shoreline that are regularly inundated and exposed by the tides of the Bay waters. These mudflats provide a habitat for a wide variety of crabs, snails, sea squirts, clams, mussels, and tubeworms.¹² These species offer a rich feeding ground of macro-invertebrates to tens of thousands of migratory and resident shorebirds that travel from as far as Canada and Alaska.¹³ At higher tides, large marine species such as leopard sharks, starry flounder, and bat rays feed on these same macro-invertebrates. Migratory birds are an example of the special status species found in this habitat.

c. San Francisquito Creek

In the urbanized portion of Menlo Park, San Francisquito Creek is the main creek. It originates southwest of Menlo Park just below Searsville Lake in Jasper Ridge, defines the southeastern border of Menlo Park for roughly three miles from the intersection of Alpine Road and Junipero Serra Boulevard, until it reaches Euclid Avenue at U.S. 101, then turns eastward and empties into the Bay from within the borders of East Palo

¹⁰ City of Menlo Park, 1994. Amendments to the City of Menlo Park General Plan and to the City of Menlo Park General Plan and Zoning Ordinance, Final Environmental Impact Report, page IV.J-1.

¹¹ San Francisco Bay National Wildlife Refuge Complex Map, accessed December 17, 2012 from http://www.fws.gov/sfbayrefuges/Images/complexmap_no%20inset.jpg.

¹² Marine Science Institute, San Francisco Bay Ecology <http://sfbaymsi.org/schoolprograms/refrencelibrary/sfbayecology.html>.

¹³ South Bay Salt Pond Restoration Project, n.d., Science Update: The Carrying Capacity of Mudflats, <http://www.southbayrestoration.org/news/e-newsletters/nov-2010/article2.html>.

Alto.¹⁴ San Francisquito Creek flows through Menlo Park largely in its natural alignment where it forms the southeastern boundary of the Menlo Park City limits.

Riparian vegetation around San Francisquito Creek spans a 25- to 75-meter-wide space, depending on adjacent land use and topography, and its canopy consists primarily of native trees—willow, bay laurels, redwoods, alders, cottonwoods, California buckeye, valley oaks, and coast live oaks.¹⁵ San Francisquito Creek shrub vegetation commonly consists of native species such as blackberry, and poison oak. In the urbanized lower reaches of the creek, non-native exotics such as eucalyptus, black locust, acacia, bamboo, pines, and redwoods are mixed in with the native plant species.

Riparian habitats, even in heavily urbanized areas, are very valuable to wildlife, providing food, water, and shelter in one location. Riparian habitat is associated with a wide variety of native resident and migratory songbirds, raptors, rodents, bats, and other mammals, as well as fish and amphibians. Urban creeks such as San Francisquito which have preserved canopies and/or understories are usually the most species rich, and some of these species are under special protections.

d. Oak Woodlands

Native valley oaks dominate the 88-acre Saint Patrick's Seminary in central Menlo Park, in the vicinity of Middlefield Road and Santa Monica Avenue. Due to its large size, contiguous shape, and relatively healthy condition of native and non-native vegetation, this site has distinct biological value, despite its location within City limits.

Mature oaks provide nesting and foraging opportunities for birds, including raptors. They also provide essential food resources for animals which include acorns in their diet, such as squirrels and woodpeckers. Other wildlife species that commonly nest or den in woodland habitat include mammals such as woodrats and deer mice, and birds such as owls, raptors, and songbirds. Native reptiles and amphibians associated with this habitat include snakes, newts, and salamanders. Contiguous oak woodlands with mature trees are relatively biodiverse and species rich, and some species found in these habitats are under special protections.

¹⁴ City of Menlo Park, 1994. Amendments to the City of Menlo Park General Plan and to the City of Menlo Park General Plan and Zoning Ordinance, Final Environmental Impact Report, page IV.J-2.

¹⁵ Stanford University Habitat Conservation Plan, San Francisquito Creek Watershed. Accessed November 7, 2012 from: <http://hcp.stanford.edu/sfcreek.html>.

e. Grasslands

The foothills of Menlo Park, located on the City's southwestern border, are dominated by common non-native annual grasses. Portions of this area have been developed for housing and related uses, while another portion of these foothills, owned by Stanford University, have been preserved as open space.¹⁶ Plant species include wild oats, Italian ryegrass, foxtail barley, yellow star thistle, field bindweed, prickly lettuce, prickly ox-tongue, and field mustard.¹⁷ The grasslands are also dotted with taller trees and shrubs, including native California species such as coyote bush, toyon, valley oak, and coast live oak. Adult, large circumference non-native trees, such as black walnut, red gum, and acacia, are also present.¹⁸

This open space area provides important foraging habitat for raptors, native prey and predator mammals, and reptiles. Grasslands which are large and contiguous are usually the most species-rich. Some grassland species, such as nesting raptors, are under special protection.

2. Built Environment

In addition to the natural environment, as noted above, the biological setting in Menlo Park includes the developed baylands and urbanized areas.

a. Developed Baylands

Developed sites in northeastern Menlo Park along the bayshore have been built on diked and filled coastal marshes. These marshes were converted in the 1960s to create more land for development. In the process, these marshes have been cut off from tidal influence and filled with materials to raise their surface level and fill in their sloughs channels. While in some cases such bayfill lands can start to revert to wetland conditions, Menlo Park's developed bayland areas are primarily paved, landscaped with non-native plants, and disturbed with automobile activity. Developed salt marsh areas typically have relatively low habitat values. Species found in the urbanized baylands are similar to other urbanized areas.¹⁹

b. Urbanized Area

The well-landscaped, suburban character of developed areas of Menlo Park includes parks, backyards, and vacant lots which provide habitat for a variety of wildlife species that have adapted to human disturbance.

¹⁶ City of Menlo Park, 1994. Amendments to the City of Menlo Park General Plan and to the City of Menlo Park General Plan and Zoning Ordinance, Final Environmental Impact Report, page IV.J-5

¹⁷ City of Menlo Park, 2006. Sand Hill Road Hotel and Office Development Project DEIR, page 3.3-1.

¹⁸ City of Menlo Park, 2006. Sand Hill Road Hotel and Office Development Project DEIR, page 3.3-3.

¹⁹ City of Menlo Park, 2005. Initial Study: Haven Avenue Industrial Condominiums, page 18.

Native and ornamental trees and shrubs in the urban area provide nesting sites for songbirds such as scrub jays, brewer's black birds, and American crows. Parks and quiet streets provide foraging grounds for opportunistic predator and prey wildlife, including turkey vultures, coyotes, and raccoons. Few urban species are under special protections, although a few, such as the red-tailed hawk, are designated protected species.

3. Special-Status Plant and Wildlife Species

Special-status plant and wildlife species include those listed under the State and federal Endangered Species Acts, plants listed by the CNPS Inventory of Rare and Endangered Vascular Plants of California, and wildlife designated as Species of Special Concern by the California Department of Fish and Wildlife. The special-status species addressed in this EA are based on a review of records from the CNDDDB and the CNPS on-line inventory. For the purposes of this section, special-status species include:

- Species listed, proposed, or candidate species for listing as Threatened or Endangered by the USFWS pursuant to the federal ESA of 1969, as amended;
- Species listed as Rare, Threatened, or Endangered by the CDFW pursuant to the CESA of 1970, as amended;
- Species designated as Fully Protected under Sections 3511 (birds), 4700 (mammals), and 5050 (reptiles and amphibians) of the California Fish and Game Code;
- Species designated by the CDFW as California Species of Concern; and
- Species not currently protected by statute or regulation, but considered rare, threatened, or endangered under CEQA (Section 15380).

A list of special-status species that have the potential for occurring in the EA Study Area are shown in Table 4-3.1. The locations of these sightings are mapped in Figure 4.3-2.

The CNDDDB indicates 21 special status plant species, animal species, or sensitive habitat types with recorded occurrences in the Menlo Park vicinity. Additionally, another five special status animals species are known to occur based on other reports done in Menlo Park. These are described as follows.

CITY OF MENLO PARK
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TABLE 4.3-1 CNDDDB SPECIAL STATUS ANIMAL SPECIES IN MENLO PARK VICINITY

Scientific Name	Common Name	Presence	Federal List	California List	CDFW	CNPS List	General Habitat	Micro Habitation
Sensitive Habitat								
	Northern Coastal Salt Marsh	Extant	None	None				
	Valley Oak Woodland	Extant	None	None				
Sensitive Plants								
<i>Chloropyron maritimum ssp. palustre</i>	Point Reyes bird's-beak	Possibly Extirpated	None	None		1B.2	Coastal salt marsh	Usually in coastal salt marsh with <i>Salicornia</i> , <i>distichlis</i> , <i>jaumea</i> , and <i>spartina</i> .
<i>Cirsium praeteriens</i>	Lost thistle	Presumed Extant	None	None		1A	Little information exists on this plant; it was collected from the Palo Alto area at the turn of the 20th century	Although not seen since 1901, this <i>cirsium</i> is thought to be quite distinct from other <i>cirsiums</i> .
<i>Collinsia multicolor</i>	San Francisco collinsia	Presumed Extant	None	None		1B.2	Closed-cone coniferous forest, coastal scrub	On decomposed shale (mudstone) mixed with humus.
<i>Dirca occidentalis</i>	western leatherwood	Presumed Extant	None	None		1B.2	Upland forest, chaparral, woodland, riparian forest, riparian woodland	On brushy slopes, mesic sites; mostly in mixed evergreen and foothill woodland communities.
<i>Eryngium aristulatum var. hooveri</i>	Hoover's button-celery	Possibly Extirpated	None	None		1B.1	Vernal pools	Alkaline depressions, vernal pools, roadside ditches, and other wet places near the coast.
<i>Stuckenia filiformis</i>	Slender-leaved pondweed	Presumed Extant	None	None		2.2	Marshes and swamps	Shallow, clear water of lakes and drainage channels.

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 HOUSING ELEMENT UPDATE, GENERAL PLAN CONSISTENCY UPDATE,
 AND ZONING ORDINANCE AMENDMENTS ENVIRONMENTAL ASSESSMENT
 BIOLOGICAL RESOURCES

TABLE 4.3-1 CNDDB SPECIAL STATUS ANIMAL SPECIES IN MENLO PARK VICINITY (CONTINUED)

Scientific Name	Common Name	Presence	Federal List	California List	CNPS CDFW List	General Habitat	Micro Habitation
Sensitive Animals							
<i>Ambystoma californiense</i>	California tiger salamander	Extirpated	Threatened	Threatened	Special Concern	Central Valley DPS federally listed as threatened. Santa Barbara and Sonoma Counties DPS federally listed as endangered	Need underground refuges, especially ground squirrel burrows and vernal pools or other seasonal water sources for breeding
<i>Antrozous pallidus</i>	Pallid bat	Presumed Extant	None	None	Special Concern	Deserts, grasslands, shrublands, woodlands, and 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.
<i>Athene cunicularia</i>	Western burrowing owl	Presumed Extant	None	None	Special Concern	Grasslands, shrub lands	Burrows into ground. Uses a variety of natural and artificial burrowing sites. Prefers short grasses.
<i>Charadrius alexandrinus nivosus</i>	Western snowy plover	Presumed Extant	Threatened	None	Special Concern	Sandy beaches, salt pond levees and shores of large alkali lakes	Needs sandy, gravelly, or friable soils for nesting.
<i>Circus cyaneus</i>	Northern harrier	Presumed Extant	None	None	Special Concern	Grasslands, salt marshes, open habitats with rodent populations	Ground nesting, typically near shrubs in marshes.
<i>Dipodomys venustus venustus</i>	Santa Cruz kangaroo rat	Presumed Extant	None	None		Silverleaf manzanita mixed chaparral in the Zayante sand hills ecosystem of the Santa Cruz Mountains	Needs soft, well-drained sand.
<i>Emys marmorata</i>	Western pond turtle	Presumed Extant	None	None	Special Concern	A thoroughly aquatic turtle of ponds, marshes, rivers, streams and irrigation ditches, usually with aquatic vegetation	Need basking sites and suitable (sandy banks or grassy open fields) upland habitat up to 0.5 km from water for egg-laying.
<i>Lasiurus cinereus</i>	Hoary bat	Presumed Extant	None	None		Prefers open habitats or habitat mosaics, with access to trees for cover and open areas or habitat edges for feeding	Roosts in dense foliage of medium to large trees. Feeds primarily on moths. Requires water.

TABLE 4.3-1 CNDDB SPECIAL STATUS ANIMAL SPECIES IN MENLO PARK VICINITY (CONTINUED)

Scientific Name	Common Name	Presence	Federal List	California List	CNPS CDFW List	General Habitat	Micro Habitation
<i>Lanius ludovicianus</i>	Loggerhead shrike	Presumed Extant	None	None	Special Concern	Grasslands, shrub-grasslands, savannah	Nests in landscaping trees and shrubs. Uses barbed wire to impale prey, and for perching.
<i>Reithrodontomys raviventris</i>	Salt-marsh harvest mouse	Presumed Extant	Endangered	Endangered		Only in the saline emergent wetlands of San Francisco Bay and its tributaries	Pickleweed is primary habitat. Do not burrow, build loosely organized nests. Require higher areas for flood escape.
<i>Sorex vagrans halicoetes</i>	Salt-marsh wandering shrew	Presumed Extant	None	None	Special Concern	Salt marshes of the south arm of San Francisco Bay	Medium high marsh 6 to 8 feet above sea level where abundant driftwood is scattered among Salicornia.
<i>Spinus lawrencii</i>	Lawrence's gold finch	Presumed Extant	None	None	Special Concern	Uplands, non-native grasslands, ruderal	Forages from seed-bearing plants, such as thistles.
<i>Taxidea taxus</i>	American Badger	Presumed Extant	None	None	Special Concern	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable (easy to dig) soils.	Needs sufficient food, friable soils & open, uncultivated ground. Preys on burrowing rodents. Digs burrows.
<i>Thamnophis sirtalis tetrataenia</i>	San Francisco garter snake	Presumed Extant	Endangered	Endangered		Vicinity of freshwater marshes, ponds, and slow moving streams in San Mateo County and extreme Northern Santa Cruz County.	Prefers dense cover and water depths of at least one foot. Upland areas near water are also very important.
	Tree Nesting Raptors	Presumed Extant	None	None	Special Concern	Grasslands, woodlands	Trees

Notes:

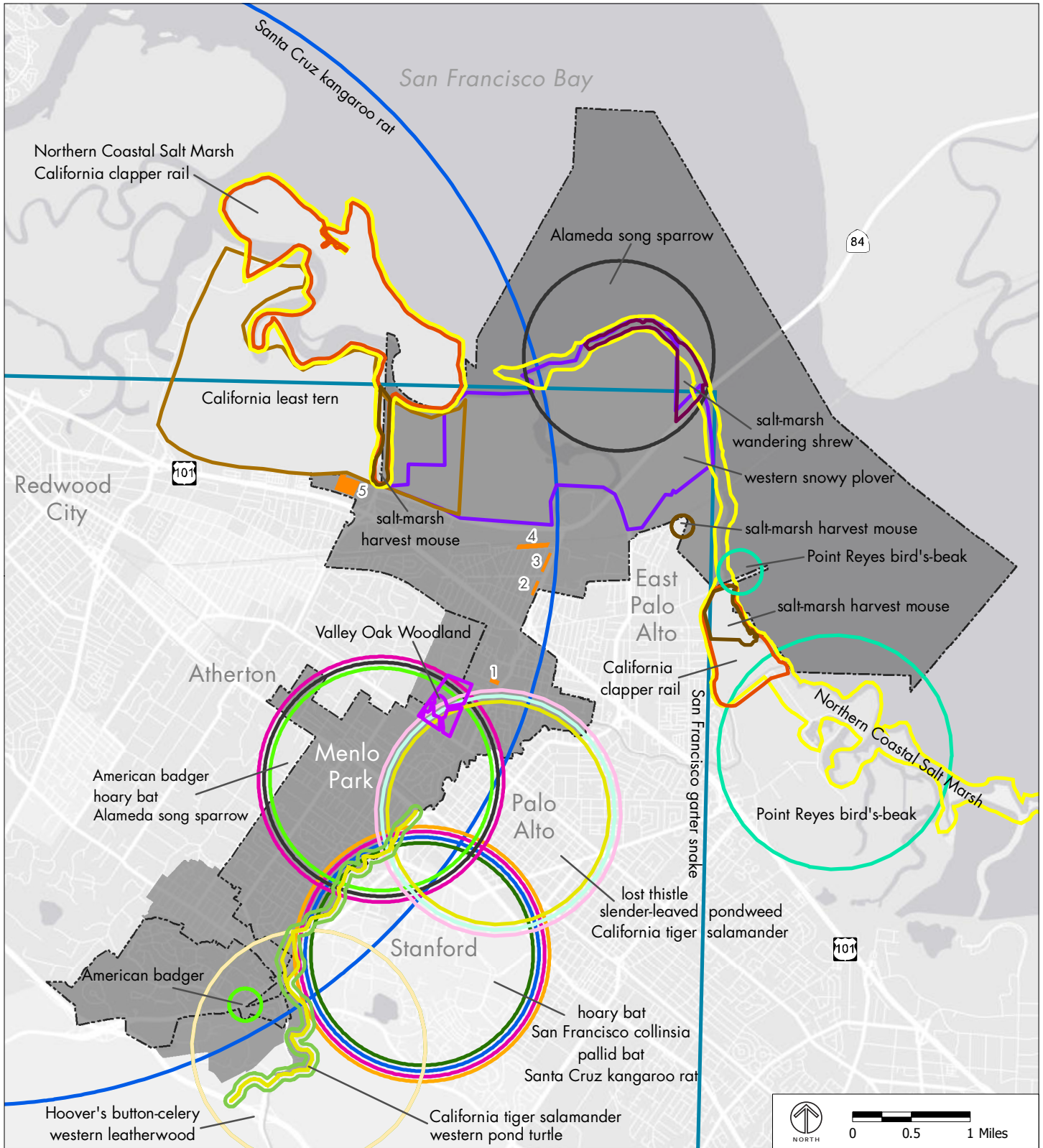
Agencies

USFWS = U.S. Fish and Wildlife Service
 CDFW = California Department of Fish and Wildlife
 CNPS = California Native Plant Society

CNPS California Rare Plant Rank

1A: Plants presumed extinct in California.
 1B: Plants rare, threatened, or endangered in California and elsewhere.
 2: Plants rare and endangered in California but more common elsewhere.
 3: Plants about which additional data are needed – a review list.
 4: Plants of limited distribution – a watch list.

Source: California Natural Diversity Database, 2013.



Source: City of Menlo Park; The Planning Center | DC&E, 2012; ESRI 2010; California National Diversity Database, 2012.

- | | | | | |
|-----------------------------|-----------------------------|----------------------------|-------------------------|-------------------------|
| Common Name (CNDDDB) | Hoover's button-celery | Valley Oak Woodland | slender-leaved pondweed | Potential Housing Sites |
| Alameda song sparrow | Northern Coastal Salt Marsh | hoary bat | western leatherwood | City Limit |
| American badger | Point Reyes bird's-beak | lost thistle | western pond turtle | Study Area |
| California clapper rail | San Francisco collinsia | pallid bat | western snowy plover | |
| California least tern | San Francisco garter snake | salt-marsh harvest mouse | | |
| California tiger salamander | Santa Cruz kangaroo rat | salt-marsh wandering shrew | | |

FIGURE 4.3-2

SPECIAL-STATUS PLANT AND WILDLIFE SPECIES

a. Plant Species

Six plant species with special-status have been recorded in the EA Study Area. These species have varied status, but each are considered rare by the CNPS.²⁰ The CNPS assigns a rank based on rarity and range.²¹ Information on habitat association, or conditions under which a plant is typically found, assists in predicting its likelihood of occurrence. The habitat association and ranking of these species are as follows.

Three of these special status plant species recorded in the EA Study Area vicinity, the Hoover's button-celery, Point Reyes bird's-beak, and slender-leaved pondweed, are associated with wet or marshy conditions such as those found in riparian, wetlands, or marshes of the northeastern Menlo Park baylands, and central Menlo Park's San Francisquito Creek area. The Hoover's button celery has the status 1B.1. This status indicates it is rare throughout its range, endemic (found only in) to California, seriously endangered, and has declined significantly over the last century. The slender-leaved pondweed has been assigned status CNPS 2.2, indicating it is rare throughout its range within California, but more common outside of California. The Point Reyes bird's beak has been assigned CNPS status 1B.2. This indicates it is rare throughout its range, endemic (found only in) to California, fairly endangered, and has declined significantly over the last century. With the potential future development under the Plan Components it is anticipated that 300 additional second units could be built by buildout year 2035. For the purposes of this EA it is assumed that these potential units could apply to all single-family lots 6,000 square feet or greater in Menlo Park, which include previously developed residences along San Francisquito Creek where these special status plant species could be found. The opportunity housing sites (1 through 5) and infill areas around downtown are not within the wetland habitat or marshes in the EA Study Area.

Two other plants, the western leatherwood and San Francisco collinsia, are associated with drier conditions, such as those of the grasslands on the western edge of the EA Study Area. Three San Francisco collinsia and western leatherwood, have been assigned CNPS status 1B.2. This indicates they are rare throughout their range, are fairly endangered, have declined significantly over the last century, and most are endemic (found only in) California. As previously noted, the potential second units could apply to all single-family lots 6,000 square feet or greater in Menlo Park, which include residences in the grasslands of Menlo Park, a habitat type where these special status plant species have been found. No potential housing sites are within the grassland areas of the EA Study Area, nor are the downtown infill areas within the grasslands.

²⁰ California Native Plant Society, 2013. The CNPS Ranking System. <http://www.cnps.org/cnps/rareplants/ranking.php>.

²¹ California Native Plant Society, 2013. Rare Plant Program. New Modifications to the CNPS Ranking System. http://www.cnps.org/cnps/rareplants/inventory/ranking_system_mods.php.

The habitat association of the lost thistle is unknown. Though recorded in the EA Study Area, the lost thistle has been assigned CNPS status 1A, indicating likely extinction or extreme rarity within California. Since 1994, 13 plants with the CNPS status 1A thought to be extinct in California have been rediscovered. Only surveys would provide confirmed presence or absence from undeveloped land where thorough studies have not been conducted recently. This information and more details are presented in Table 4.3-1. While the CNDDDB list presented here is specific to the EA Study Area, other plant species may potentially occur in the Menlo Park vicinity, based on geographic range and preferred habitat. Because the habitat association of the lost thistle is unknown, second dwelling units and housing sites on undeveloped properties could be sites where lost thistle occurs.

b. Animal Species

Thirteen bird, mammal, reptile, fish, and invertebrate species with special-status have recorded occurrences in the EA Study Area vicinity as reported by the CNDDDB. Another four species were found in recent local studies, bringing the total to 17 special status animal species. Information on habitat association, or conditions under which an animal is typically found, assists in predicting its likelihood of occurrence. The habitat association and ranking of these species are as follows.

Six of the special-status animal species with recorded occurrences in the Menlo Park vicinity are associated with wetland habitat, specifically with the salt marsh at the northeastern edge of the City. Of these, the California clapper rail, California least tern, salt-marsh harvest mouse, and western snowy plover each are listed as protected on the federal Endangered Species List. The two other species, the Alameda song sparrow and the salt marsh wandering shrew, are afforded protection through state listing as species of special concern. Under the Plan Components, second dwelling units could be developed on lots with existing primary residences; however, no existing primary residences are located in the wetlands of the EA Study Area, thus no second dwelling units could be located in these wetlands. Furthermore, the Plan Components housing sites and downtown infill sites are not located in the marshes or wetlands of the EA Study Area.

Four of the special-status animal species with CNDDDB recorded occurrences in Menlo Park are associated with the grasslands on the western boundary of the City, and the oak woodlands in the center of the City, specifically Saint Patrick's Seminary oak woodland. These four grassland- or woodland- associated special status species are the American badger, pallid bat, hoary bat, and Santa Cruz kangaroo rat. The American badger and pallid bat are state Species of Special Concern. The hoary bat's maternal roosting sites are protected during breeding season, though not given an official special protection status. The Santa Cruz kangaroo rat is associated with a rare habitat type within the grasslands, and requires sandy soils, though it is not

given official special protection status.²² An additional, four special status species of birds were found in recent studies in the EA Study Area; these are the northern harrier, loggerhead shrike, Lawrence's goldfinch, and burrowing owl. These species are associated with the grasslands of western Menlo Park and are recognized as Species of Special Concern status by either the state of California or federal wildlife protection agencies. Recent studies detected these species in the foothills of Jasper Ridge (also referred to as Sharon Heights) on the western edge of Menlo Park.²³ Table 4.3-1 provides summary information on the name, status, and preferred habitat for each of these species. Under the Plan Components, second dwelling units could be developed on lots with existing primary residences. Primary residences exist in the grasslands and adjacent to the oak woodlands of Menlo Park, thus second dwelling units could be built in the grasslands or adjacent to oak woodlands. None of the potential housing Sites contain either grasslands nor woodlands. For additional clarification, Site 1 does contain mature oak trees, but this site is not designated as oak woodland by the CNDDDB.

Two special-status animal species with CNDDDB recorded occurrences in Menlo Park are associated with (freshwater) wetlands and riparian habitats such as those of San Francisquito Creek. These are the San Francisco garter snake and western pond turtle. The San Francisco garter snake is on the federal endangered species list. The western pond turtle is a State of California species of special concern. A third species associated with San Francisquito Creek, the steelhead (a member of the salmon fish family), is federally threatened.²⁴ Under the Plan Components, second dwelling units could be developed on lots with existing primary residences, which include residential properties along San Francisquito Creek where these special-status animal species could be found. The Plan Components do not include housing sites in the wetlands or marshes of Menlo Park.

4. Sensitive Habitats

The CNDDDB search identifies two types of sensitive habitat within the planning area: coastal salt marsh and oak woodland. Coastal salt marsh occurs on the northeastern edge of Menlo Park where the baylands have not been converted. The oak woodland occurs within the center of Menlo Park, and consists of a large patch of native habitat situated within the otherwise urbanized City center. The oak woodland is located on the Saint Patrick's Seminary property. Additionally, while San Francisquito Creek does not officially

²² California Department of Fish and Game, 1998. Santa Cruz kangaroo rat. Accessed January 9, 2013 from: <http://www.dfg.ca.gov/wildlife/nongame/ssc/docs/mammal/species/28.pdf>.

²³ City of Menlo Park, 2006. Sand Hill Road Hotel and Office Development Project DEIR, page 3.3-7.

²⁴ San Francisquito Creek Joint Powers Authority, 2004. San Francisquito Creek Bank Stabilization and Revegetation Master Plan, accessed December 17, 2012 from <http://www.menlopark.org/creek/sfcindex.html>.

appear in the database as a sensitive habitat, steelhead, a fish species that is listed as federally threatened under the federal Endangered Species Act, occurs in San Francisquito Creek, providing an indication of the importance of this stream to wildlife.²⁵ Under the Plan Components, second dwelling units could be developed in established neighborhoods; however, no primary residences exist in the woodlands or marshes in the EA Study Area. Established residences occur along San Francisquito Creek, but would not be allowed to be built within the creek channel due to existing federal Clean Water Act and California Fish and Wildlife Code regulations as described in Section A, regulatory framework. Furthermore, the Plan Components include no housing sites in the marshes or wetlands, or oak woodlands of the EA Study Area.

5. Wildlife Dispersal Corridor

In addition to serving as valuable habitat, riparian areas serve as important travel corridors for wildlife. These habitats facilitate dispersal of juveniles, movement between habitat types for different life-stages of species, and movement between degraded patches. San Francisquito Creek's intact, multi-layered canopy of riparian habitat and large creek channel serves as an important wildlife dispersal corridor. Under the Plan Components, second dwelling units could be developed on lots with existing primary residences, including on lots along San Francisquito Creek. No Plan Component housing sites are along San Francisquito Creek.

C. Standards of Significance

The Plan Components would have a significant impact to biological resources if it would:

1. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.
2. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.
3. Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.

²⁵ San Francisquito Creek Joint Powers Authority, 2004. San Francisquito Creek Bank Stabilization and Re-vegetation Master Plan, accessed December 17, 2012 from <http://www.menlopark.org/creek/sfcindex.html>

4. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.
5. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.
6. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

D. Impact Discussion

1. **Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.**

Future development under the Plan Components could potentially occur in five habitat types of the EA Study Area (i.e. grassland foothills, urbanized flatlands, oak woodlands flatlands, riparian corridor, and developed baylands.) Housing Sites 1 through 5, infill housing, and the second dwelling units would be constructed on previously developed sites, but while these sites are developed, vegetation removal in the course of development could have potentially significant impacts on nesting birds or roosting bats, and directly cause the loss of sensitive plant species, or removal of Menlo Park designated heritage trees.

The potential housing sites are located on previously developed urbanized areas and the developed baylands area of the City. Housing Site 1 (Veterans Affairs Campus) is located in the urbanized flatlands and is a man-made, park-like setting dominated by a non-native grass lawn and oak trees, typical of a suburban community. Housing Sites 2 and 3 (MidPen's Gateway Apartments), and Site 4 (Hamilton Avenue) are located in the urbanized flatlands and dominated by parking lots and recently-occupied residential or commercial structures typical of suburban communities. Housing Site 5 (Haven Avenue) is located in the developed baylands and is an industrial site predominately paved and built with minimal vegetation. On each of these sites, the potential impact would likely be limited to those related to trees, specifically through removal of heritage trees, or disturbance of nesting birds or roosting bats.

Existing residential districts are located in four of Menlo Park habitats; the grasslands, urbanized flatlands, oak woodlands, and adjacent to San Francisquito Creek, a valuable urban riparian habitat. Potential im-

pacts from construction of second dwelling units in existing residential districts would be related to the removal of trees and other vegetation in these habitats during the nesting season of the migratory birds found in Menlo Park. In particular, 80 percent of the vegetation in the creek is considered high or medium quality habitat, where many migratory birds nest, and where the creek enters residential neighborhoods, the creek is narrow and incised.²⁶ Homes on lots bordering the creek are edged by steep creek banks, but the vegetation on the residential lots provides additional nesting and foraging opportunities for riparian-associated species, particularly birds and bats. Construction of second units would likely be associated with the removal of vegetation such as trees and shrubs not within the creek itself, but in the vicinity of the creek.

Implementation of the following current and amended General Plan goals, policies, and programs would ensure impacts to special-status species associated with potential future development would be *less than significant*.

a. Current General Plan Land Use and Circulation Element

- “ 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-7: Development of secondary residential units on existing developed residential lots shall be encouraged consistent with adopted City standards.
- “ Policy I-G-5: The City shall encourage the retention of at least 10 acres of open space on the St. Patrick's property through consideration of various alternatives to future development including rezoning consistent with existing uses, cluster development, acquisition of a permanent open space easement, and/or transfer of development rights.
- “ 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.

²⁶ San Francisquito Creek Joint Powers Authority, 2006. San Francisquito Creek Bank Stabilization and Revegetation Master Plan. Accessed January 10, 2013 from <http://www.menlopark.org/creek/ECRSection4.pdf>.

- “ Policy I-G-6: The City shall encourage the retention of open space on large tracts of land through consideration of various alternatives to future development including rezoning consistent with existing uses, cluster development, acquisition of a permanent open space easement, and/or transfer of development rights.
 - “ Policy I-G-8: The Bay, its shoreline, San Francisquito Creek, and other wildlife habitat and ecologically fragile areas shall be maintained, and preserved to the maximum extent possible. The City shall work in cooperation with other jurisdictions to implement this policy.
 - “ 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-12: The maintenance, preservation, and enhancement of open space on Stanford lands within Menlo Park's unincorporated sphere of influence shall be encouraged.
 - “ Program I-2: The City shall develop, evaluate, and adopt an ordinance in cooperation with other jurisdictions and interested organizations to protect and preserve San Francisquito Creek, including consideration of land use regulations such as the requirement of use permits for structures or impervious surfaces within a specified distance of the top of the creek bank.
 - “ 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.
- b. Amended General Plan Open Space and Conservation Element
- “ Policy OSC-1.8: Regional Open Space Preservation Efforts. Support regional and sub-regional efforts to acquire, develop, and maintain open space conservation lands.
 - “ Policy OSC-1.9: Federal, State, and County Open Space and Conservation Programs. Make maximum use of federal, state, and county programs wherever possible in all matters concerned with open space and conservation.

- “ Policy OSC-1.11: Sustainable Landscape Practices. Encourage the enhancement of boulevards, plazas and other urban open spaces in high-density and mixed-use residential developments, commercial and industrial areas with landscaping practices that minimize water usage.
- “ Goal OSC-1: Protect and Enhance Open Space and Natural Resources: Protect, conserve and enhance valuable natural resources, open areas and designated open space lands rich in scenic value, wildlife or of a fragile ecological nature through conservation and restoration efforts. The approach to natural resources include:
 - Preserve the natural state, unique appeal, and visual amenities of Menlo Park’s bay lands and shoreline.
 - Protect the wildlife habitat, scenic value and natural character of San Francisquito Creek and other riparian corridors.
 - Protect sensitive species and natural communities.
 - Preserve open areas needed for protection from natural hazards.
 - Maintain, preserve, and enhance contiguous open space on Stanford lands within Menlo Park's unincorporated sphere of influence.
 - Protect lands that have inherent qualities to provide visual amenity, including topographic features, views or vistas, street landscape areas, scenic water areas, creeks and the San Francisco Bay.
 - Provide landscaped areas that visually and environmentally enhance the community.
- “ Policy OSC-1.2: Habitat for Open Space and Conservation Purposes. Preserve, protect, maintain, and enhance water, water-related areas, and plant and wildlife habitat for open space and conservation purposes.
- “ Policy OSC-1.6: South Bay Salt Pond Restoration Project and Flood Management Project. Continue to support and participate in Federal and State efforts related to the South Bay Salt Pond Restoration Project and flood management project. Provide public access to the Bay for the scenic enjoyment and recreation opportunities as well as conservation education opportunities related to the open Bay, the sloughs, and the marshes.
- “ Policy OSC-1.7: San Francisquito Creek Joint Powers Authority. Continue efforts through San Francisquito Creek Joint Powers Authority to enhance the value of the creek as a community amenity for trails and open space, conservation and educational opportunities.

- “ Policy OSC-1.15: Heritage Trees. Protect Heritage Trees, including during construction activities through enforcement of the Heritage Tree Ordinance (Chapter 13.24 of the Municipal Code).
- “ Policy OSC-1.1: Natural Resources Integration with Other Uses. Protect Menlo Park’s natural environment and integrate creeks, utility corridors, and other significant natural and scenic features into development plans.
- “ Policy OSC-1.3: Sensitive Habitats. Require new development on or near sensitive habitats to provide baseline assessments prepared by qualified biologists, and specifies requirements about the baseline assessments.
- “ Policy OSC-1.4: Habitat Enhancement. Require new development to minimize the disturbance of natural habitats and vegetation, and requires revegetation of disturbed natural habitat areas with native or non-invasive naturalized species.
- “ Policy OSC-1.5: Invasive, Non-Native Plant Species. Avoid the use of invasive, non-native species, as identified on the lists of invasive plants maintained at the California Invasive Plant Inventory and United States Department of Agriculture invasive and noxious weeds database, or other authoritative sources, in landscaping on public property.

Implementation of the goals, policies and programs identified above, as well as compliance with Municipal Code Chapters 12.44 and 13.24, and federal and State laws, would reduce potential impacts to special-status species in the EA Study Area to a *less-than-significant* level.

2. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.

As discussed above in Existing Conditions, B.4, Sensitive Habitats, the two CNDDDB recognized sensitive natural communities of Menlo Park are its wetlands and oak woodlands. Additionally, the EA Study Area contains the riparian habitat of San Francisquito Creek, a valuable urban wildlife habitat. As described in Existing Conditions, Section B.1, the locations of the potential housing under the Plan Components would be concentrated on sites already developed with commercial, industrial, or residential uses, and/or in close proximity to existing residential and residential-serving development, where development will have a lesser impact on biological resources. None of the five potential housing sites are located in sensitive natural communities of Menlo Park, which are its bay shoreline wetlands, oak woodlands, and San Francisquito Creek; however, second units could be located adjacent to San Francisquito Creek, a valuable urban riparian habitat.

While potential housing Site 1 (Veterans Affairs Campus) does contain several large oak trees, this area is not identified as an oak woodland by CNDDDB, and does not contain any identified sensitive habitat. Sites 2, 3, (MidPen's Gateway Apartments) and Site 4 (Hamilton Avenue) consist of urbanized development that is bordered immediately adjacent to major roads and surrounded by an urban fabric of existing commercial and residential development. Site 5 (Haven Avenue) consists of graded and fully developed industrial site built on graded and predominately paved converted baylands with minimal vegetation. These five housing sites on urbanized landscaped sites are without special habitat status, and due to their proximity to existing residential and other urbanized development, housing on these sites will have a reduced impact on biological resources.

While existing residential districts are located adjacent to San Francisquito Creek, a valuable urban riparian habitat, construction of second dwelling units in existing residential districts housing in this area would not result in the conversion of creek channel habitat or removal of vegetation from within the banks of the creek. Construction of second units could result in removal of vegetation such as trees and shrubs not within the creek itself, but riparian habitat adjacent to the creek. Where the creek enters residential neighborhoods, the creek is narrow and incised, and homes on lots bordering the creek are edged by steep creek banks.²⁷ In instances of large lots and/or tall trees, vegetation on the residential lots immediately adjacent could provide additional nesting and foraging opportunities for riparian-associated species, particularly birds and bats. Generally, impacts would be limited to removal of vegetation (to trees or bushes) on already developed lots. Removal of trees over 15 inches in diameter (10 inches in diameter for native Oaks) would trigger the Heritage Trees Ordinance, which requires a minimal tree replacement ratio of one tree planted for one Heritage Tree removed.

The existing General Plan and proposed goals, policies, and programs described in Section D.1 above would mitigate impacts to oak woodland and riparian habitats. These goals, policies, and actions provide a comprehensive approach for addressing and mitigating the direct and indirect impacts of anticipated development on or near riparian habitat or other sensitive natural communities. Therefore, implementation of the Plan Components, in combination with Municipal Code Chapters 13.24 and 12.44, and federal and State laws, would reduce potential impacts to sensitive habitats to a *less-than-significant* level.

²⁷ San Francisquito Creek Joint Powers Authority, 2006. San Francisquito Creek Bank Stabilization and Revegetation Master Plan. Accessed January 10, 2013 from <http://www.menlopark.org/creek/ECRSection4.pdf>.

3. Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.

Future housing under the Plan Components would occur where development presently exists, and none of these five housing sites, infill locations or second dwelling unit contains protected wetlands. Implementation of the Plan Components as described in Section D.1 and compliance with Municipal Code Chapters 13.24 and 12.44, and federal and State laws, would reduce potential impacts to federally protected wetlands to a *less-than-significant* level.

4. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.

San Francisquito Creek provides a valuable wildlife movement corridor and nursery site, despite its location within the urbanized setting of the EA Study Area. While none of the potential housing sites and infill areas around downtown are located along San Francisquito Creek, second dwelling units could be developed on existing residential lots along the creek. Construction of second dwelling units on lots adjacent to the creek would not necessitate alteration of the creek or removal of vegetation within the creek channel. Hence, travel of species within the creek channel would not be obstructed under the Plan Components. However, construction of second dwelling units on lots adjacent to the creek may necessitate removal of vegetation along creek banks, or result in obstructions along the creek banks. There are numerous policies in the Land Use and Circulation, and Open Space and Conservation Elements of the Plan Components would serve to protect and enhance sensitive biological resources and the important wildlife habitat the San Francisquito Creek provides. Therefore, compliance with the goals, policies and programs in the Plan Components, in combination with Municipal Code Chapters 13.24 and 12.44, and federal and State laws, would ensure that impacts to the wildlife movement corridor and nursery site that the San Francisquito Creek supports would be *less than significant*.

5. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

The City of Menlo Park's Water-Efficient Landscaping and Heritage Tree Ordinances, Municipal Code Chapters 12.44 and 13.24, respectively, protect native species and preserve a population of large, healthy trees in Menlo Park. The Water-Efficient Landscaping Ordinance would prohibit introducing invasive species and noxious weeds as part of future development permitted under the Plan Components. In some instances of construction of new housing and infill units or development of secondary dwelling units the re-

removal of trees may be necessary if site plans cannot be designed to avoid impacts to trees. Per the City's Heritage Tree Ordinance, before any tree would be removed, tree assessment and removal permits would be secured. Potential future housing development permitted under the Plan Components would have to comply with these City ordinances. With adherence to the General Plan described in Section D.1 policies and cited ordinances, no conflicts with local plans and policies are anticipated, and impacts would be considered *less than significant*.

6. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan.

Stanford University has prepared a Habitat Conservation Plan (HCP) that has not yet been adopted. The Final Environmental Impact Statement for the Stanford HCP has been published and HCP implementation is scheduled for Spring 2013.²⁸ Portions of the EA Study Area in the Menlo Park Sphere of Influence are included in the Stanford HCP, but do not include potential housing under the Plan Components. Additionally, this area does not support sensitive species identified in the Stanford HCP,²⁹ and therefore the Plan Components would not conflict with the Stanford HCP, based on the information in the draft HCP published December 2011 and impacts would be *less than significant*.

7. Cumulative Impacts

The geographic scope of this analysis is taken as the EA Study Area and the region. The potential impacts of potential development on biological resources tend to be site-specific, and the overall cumulative effect would be dependent on the degree to which significant vegetation and wildlife resources are protected on a particular site. This includes preservation of well-developed native vegetation (native grasslands, oak woodlands, riparian woodland, etc.), populations of special-status plant or animal species, and wetland features (including freshwater seeps and tributary drainages). Compliance with mandatory regulation and implementation of appropriate environmental review of development in the surrounding incorporated and unincorporated lands outside of Menlo Park would serve to ensure that important biological resources are identified, protected, and properly managed, and to prevent any significant adverse development-related impacts. New development in the region would result in further conversion of existing natural habitats to urban and suburban conditions, limiting the existing habitat values of the surrounding area. This could include loss of wetlands and sensitive natural communities, reduction in essential habitat for special-status species, removal

²⁸ Stanford University, Stanford University Habitat Conservation Plan Project Schedule, <http://hcp.stanford.edu/schedule.html>, accessed on December 7, 2012.

²⁹ Stanford University Land Use and Environmental Planning Office, 2011, Stanford University Habitat Conservation Plan, page 89 and Figure 4-2.

of mature native trees and other important wildlife habitat features, and obstruction of important wildlife movement corridors. Additional development may also contribute to degradation of the aquatic habitat in the creeks throughout the region, including the EA Study Area.

Grading associated with construction activities generally increases erosion and sedimentation, and urban pollutants from new development would reduce water quality. However, as described throughout this EA, most of the parcels that could be developed with multi-family housing, infill housing or second units under the Plan Components are already developed, and nearly all occur within urbanized areas, the effects on biological resources would be diminished or avoided. Furthermore, policies in the amended General Plan would serve to address these contributions to cumulative impacts on sensitive biological resources, as discussed above. Therefore, the Plan Components would result in a *less-than-significant* cumulative impact to biological resources.

E. Impacts and Mitigation Measures

The potential future development under the Plan Components would not result in any significant impacts to biological resources; therefore, no mitigation measures are necessary.

CITY OF MENLO PARK
HOUSING ELEMENT UPDATE, GENERAL PLAN CONSISTENCY UPDATE,
AND ZONING ORDINANCE AMENDMENTS ENVIRONMENTAL ASSESSMENT
BIOLOGICAL RESOURCES

4.4 CULTURAL RESOURCES

This chapter describes existing cultural resources in EA Study Area and evaluates the potential environmental consequences of future development that could occur by adopting and implementing the proposed Housing Element Update, General Plan Consistency Update, and associated Zoning Ordinances amendments, together referred to as the “Plan Components” on cultural resources. Cultural resources include historically and architecturally significant resources, as well as archaeological and paleontological resources.

A. *Regulatory Framework*

1. **Federal Laws and Regulations**

a. National Historic Preservation Act

The National Historic Preservation Act (NHPA) of 1966 established the National Register of Historic Places (National Register) as the official designation of historical resources, including districts, sites, buildings, structures, and objects. For a property to be eligible for listing in the National Register, it must be significant in American history, architecture, archaeology, engineering, or culture, and must retain integrity in terms of location, design, setting, materials, workmanship, feeling, and association. Resources less than 50 years in age, unless of exceptional importance, are not eligible for the National Register. Though a listing in the National Register does not prohibit demolition or alteration of a property, the California Environmental Quality Act (CEQA) requires the evaluation of project effects on properties that are listed in the National Register.

b. American Indian Religious Freedom Act and Native American Graves and Repatriation Act

The American Indian Religious Freedom Act recognizes that Native American religious practices, sacred sites, and sacred objects have not been properly protected under other statutes. It establishes as national policy that traditional practices and beliefs, sites (including right of access), and the use of sacred objects shall be protected and preserved. Additionally, Native American remains are protected by the Native American Graves and Repatriation Act of 1990.

c. Paleontological Resources Preservation Act

The federal Paleontological Resources Preservation Act of 2002 limits the collection of vertebrate fossils and other rare and scientifically significant fossils to qualified researchers who have obtained a permit from the appropriate state or federal agency. Additionally, it specifies these researchers must agree to donate any materials recovered to recognized public institutions, where they will remain accessible to the public and to other researchers. This Act incorporates key findings of a report, *Fossils on Federal Land and Indian Lands*, issued by the

Secretary of Interior in 2000, which establishes that most vertebrate fossils and some invertebrate and plant fossils are considered rare resources.¹

2. State Laws and Regulations

a. California Register of Historical Resources

California Code of Regulations (CCR) Title 14, Chapter 11.5, Section 4850 creates the California Register of Historical Resources (California Register). The California Department of Parks and Recreation Office of Historic Preservation (OHP) maintains the California Register. Historic properties listed, or formally designated for eligibility to be listed, on the National Register are automatically listed on the California Register. State Landmarks and Points of Interest are also automatically listed. The California Register can also include properties designated under local preservation ordinances or identified through local historical resource surveys.

b. California Environmental Quality Act

California State law also provides for the protection of cultural resources by requiring evaluations of the significance of prehistoric and historic resources identified in documents prepared consistent with CEQA. The CEQA Statute is contained in Public Resources Code (PRC) 21000–2117 and the CEQA Guidelines are contained in CCR, Title 14, Division 6, Chapter 3, Sections 15000–15387.

Under CEQA, a cultural resource is considered an “historical resource” if it meets any of the criteria found in Section 15064.5(a) of the CEQA Guidelines. Criteria identified in the CEQA Guidelines are similar to those described under the NHPA. Under CEQA, the lead agency determines whether projects may have a significant effect on archaeological and historical resources. CEQA Guidelines Section 15064.5 defines what constitutes a historical resource, including: (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 City'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.

¹ U.S. Department of the Interior. Fossils on Federal & Indian Lands, Report of the Secretary of the Interior, May 2000. Accessed December 13, 2012 from http://www.blm.gov/pgdata/etc/medialib/blm/wo/Planning_and_Renewable_Resources/coop_agencies/paleontology_library/paleon_legis.Par.15714.File.dat/fossil.pdf.

If the lead agency determines that a project may have a significant effect on a historical resource, the project is determined to have a significant effect on the environment, and these effects must be addressed. However, no further environmental review needs to be completed if, under the qualifying criteria, a cultural resource is not found to be a historical resource or unique archaeological resource.

The criteria for inclusion on the California Register (CCR Section 4852[a]) are listed below:

1. Is associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States.
2. Is associated with the lives of persons important to local, California, or national history.
3. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master or possesses high artistic values.
4. Has yielded, or may be likely to yield, information important to the pre-history or history of the local area, California, or the nation.

In addition to meeting one or more of the above criteria, eligibility for the California Register requires that a resource retains sufficient integrity to convey a sense of its significance or importance. Seven elements are considered key in considering a property's integrity: location, design, setting, materials, workmanship, feeling, and association.

c. State Historic Building Code

The State Historic Building Code provides alternative building regulations and building standards for the rehabilitation, preservation, restoration (including related reconstruction), or relocation of buildings or structures designated as historic buildings. These regulations are intended to facilitate the restoration or change of occupancy so as to preserve their original or restored architectural elements and features, to encourage energy conservation and enable a cost-effective approach to preservation, and to provide for the safety of the building occupants.

d. Public Resources Code Section 5097.5

California PRC Section 5097.5 prohibits "knowing and willful" excavation or removal of any "vertebrate paleontological site...or any other archaeological, paleontological or historical feature, situated on public lands, except with express permission of the public agency having jurisdiction over such lands." Public lands are defined to include lands owned by or under the jurisdiction of the State or any city, county, district, authority, or public corporation, or any agency thereof.

e. State Laws Pertaining to Human Remains

Section 7050.5 of the California Health and Safety Code states that in the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of the county in which the remains are discovered has determined whether or not the remains are subject to the coroner's authority. If the human remains are determined to be of Native American origin, the county coroner must contact the California Native American Heritage Commission (NAHC) within 24 hours of this identification. A NAHC representative will then identify a Native American Most Likely Descendant² to inspect the site and provide recommendations for the proper treatment of the remains and associated grave goods. In addition, CEQA Guidelines Section 15064.5 specifies the procedures to be followed in case of the discovery of human remains on non-federal land. The disposition of Native American burials falls within the jurisdiction of the NAHC.

f. Senate Bill 18

Senate Bill (SB) 18, signed into law in September 2004, requires local (city and county) governments to consult with California Native American tribes to aid in the protection of traditional tribal cultural places through local land use planning. This legislation, which amended Sections 65040.2, 65092, 65351, 65352, and 65560, and added Sections 65352.3, 653524, and 65562.5 to the Government Code; also requires the Governor's Office of Planning and Research (OPR) to include in the General Plan Guidelines advice to local governments for how to conduct these consultations.

The intent of SB 18 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. The consultation and notice requirements apply to adoption and amendment of both general plans (Government Code Section 65300 et seq.) and specific plans (Government Code Section 65450 et seq.). Specifically, Government Code Section 65352.3 requires local governments, prior to making a decision to adopt or amend a general plan, to consult with California Native American tribes identified by the NAHC for the purpose of protecting or mitigating impacts to cultural places. As previously discussed, the NAHC is the State agency responsible for the protection of Native American burial and sacred sites. The City of Menlo Park initiated this con-

² "Native American Most Likely Descendant" is a term used in an official capacity in *CEQA Guidelines* Section 15064.5(e), and other places, to refer to Native American individuals assigned the responsibility/opportunity by NAHC to review and make recommendations for the treatment of Native American human remains discovered during project implementation. Section 5097.98 of the Public Resources Code and Section 7050.5 of the Health and Safety Code also reference Most Likely Descendants.

sultation process for the Plan Components and received the following list of tribes from the NAHC in a letter dated January 24, 2013. See Appendix C of this EA.³

- “ Amah/Mutsun Tribal Band
- “ Costanoan Rumsen Carmel Tribe
- “ Indian Canyon Mutsun Band of Costanoan
- “ Muwekma Ohlone Indian Tribe of the SF Bay Area
- “ The Ohlone Indian Tribe

3. Local Regulations and Policies

a. Menlo Park General Plan

The City of Menlo Park General Plan includes goals, policies, and actions relevant to the environmental factors potentially affected by the Plan Components. Relevant policies are identified later in this chapter under Section D (Impact Discussion).

b. Menlo Park Zoning Ordinance

Title 16 of the City of Menlo Park Municipal Code sets forth the City's Zoning Ordinance. While the City maintains no local register of historic resources, Chapter 16.54 of the Zoning Ordinance provides for an Historic Site District (H) for protecting, enhancing, preserving the 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 that the proposed work will preserve, enhance or restore, and not damage or destroy the exterior architectural features of the landmark.

B. Existing Conditions

1. Historical Resources

Information about historic resources was obtained from the Menlo Park Historical Association,⁴ and a Historic Resources Report was prepared by Knapp Architects in February 2013. The preparation of the Historic Re-

³ The Native American Heritage Commission, written correspondence from Debbie Pilas-Treadway (NAHC) to Justin Murphy (City), January 24, 2013.

sources Report included a windshield survey of the opportunity housing sites and a review of the National Register, California Historical Resources Information System (CHRIS) database, the Historic Property Data File for San Mateo County, the City's 1990 Historic Sites Survey and the Subdivision Maps and/or the 1925 Sanborn Fire Insurance Map (updated as late as 1968). This Historic Resources Report is included as Appendix C to this EA.

a. Historic Setting

The City of Menlo Park was originally the home of Ohlone Indians. The Ohlone lived off the land and due to the abundance of food they did not practice agriculture. Evidences of their civilization are still being unearthed on the Filoli estate in Woodside, and along San Francisquito Creek.

In 1769 Spanish rule was introduced to the area when the exploration party led by Don Gaspar de Portola camped near "El Palo Alto" after their momentous discovery of San Francisco Bay. The colonizing of the Peninsula began after the expedition of Juan Bautista DeAnza passed through Menlo Park on its way to establishing Mission Dolores and the Presidio of San Francisco in 1776. The mission padres, explorers, military personnel, travelers, and settlers occupied certain areas, developing and populating the land.

In 1854 Dennis J. Oliver and Daniel McGlynn purchased 1,700 acres from the Don Jose Dario Arguello family that had legally obtained the title to the land in 1853. Around this time Menlo Park received its official name when 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. In the late 1850s, the road between San Francisco and San Jose was completed. Wealthy families purchased large tracts of land and were more or less self-sufficient, producing their own food. Workers lived within the estate grounds. San Mateo County became independent of San Francisco County in 1856.

During this same period, the downtown area of Menlo Park 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.

⁴ City of Menlo Park website, Early Days in Menlo Park, prepared by Menlo Park Historical Association, October, 1985, <http://www.menlopark.org/homepage/history.html>, retrieved December 14, 2012.

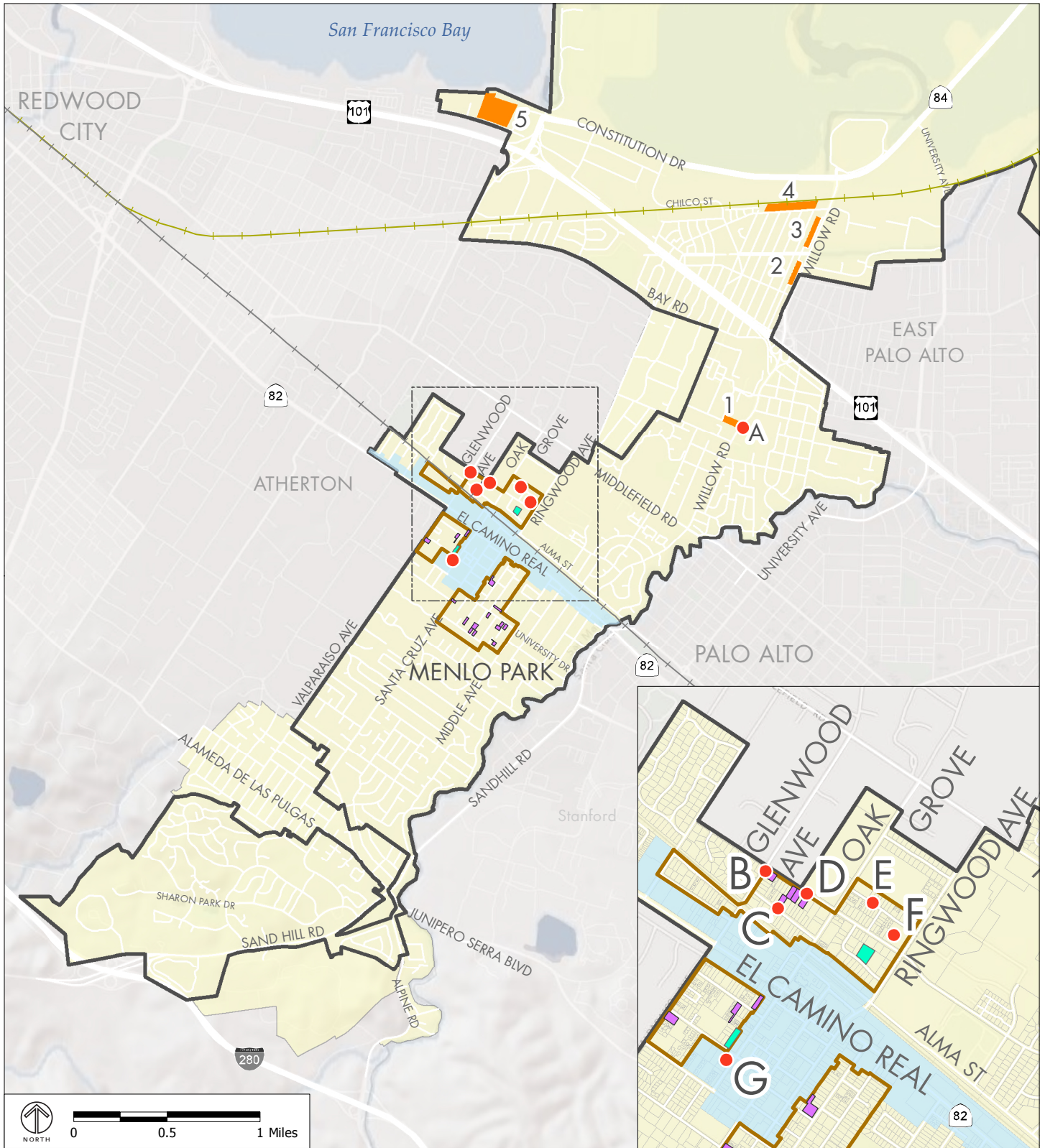
On March 23, 1874, Menlo Park became the second incorporated City in San Mateo County, although only for a short time. The purpose was to provide a quick way to raise money for road repairs. This incorporation, which included Fair Oaks (later Atherton) and Ravenswood (later East Palo Alto) lasted only until 1876. Churches were founded, schools were opened, and businesses were established. The first church in San Mateo County was built by Dennis Martin on his ranch in 1856. It was the only Catholic Church between Mission Dolores in San Francisco and Mission Santa Clara until St. Matthew's Church was built in 1863 and St. Matthew's Episcopal Church in 1865, both in San Mateo. The Church of the Nativity in Menlo Park was built in 1872.

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 EA Study 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.

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. Between 1943 and 1946 another military installation, Dibble General Hospital, was built on the old Timothy Hopkins estate to care for the thousands of soldiers injured in the South Pacific in World War II. 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.

b. Historic Architectural Resources on or Near Potential Housing Sites and Infill Locations

The EA Study Area has many historic architectural resources; however, for the purposes of this EA the existing conditions are based on the proximity of known historic architectural resources to the opportunity housing locations. Table 4.4-1 shows the previously identified as historic resources or potential historic resources on or near the potential housing sites and infill areas as identified in the Historic Resources Report prepared for the Plan Components and Figure 4.4-1 illustrates their location to the potential housing sites and infill areas. With the potential future development under the Plan Components it is anticipated that 300 additional second units could be built by buildout year 2035. For the purposes of this EA it is assumed that these potential units would apply to all single-family lots in Menlo Park. Because it is unknown which of the single-family homeowners will ultimately develop a second unit, no locations are identified.



Source: City of Menlo Park; The Planning Center | DC&E, 2013; ESRI 2010; FHA 2002.

- Historic Resources
- Potential Sites to be Studied for Rezoning to Higher Density
- City Limits
- Historic Site District (H)
- Infill Areas around Downtown
- Sphere of Influence
- Lots with Additional Housing Unit Potential
- El Camino Real/Downtown Specific Plan

FIGURE 4.4-1

EXISTING HISTORIC RESOURCES ON OR NEAR POTENTIAL HOUSING LOCATIONS

TABLE 4.4-1 PREVIOUSLY IDENTIFIED HISTORIC RESOURCES ON OR NEAR POTENTIAL HOUSING LOCATIONS

Site	Name/Address	Criteria
On Potential Housing Sites		
A	Housing Site 1 Veterans Affairs Campus 795 Willow Road	National Register Criterion A Status Code 5S1: eligible for listing under an existing local ordinance
On Potential Infill Housing Sites Around Downtown		
B	Gale House 417 Glenwood Avenue	National Register Criterion A Status Code 3S: appears eligible for separate listing in the National Register or California Register
C	1320 Mills Street	National Register Criterion C Status Code 5S1: eligible for listing under an existing local ordinance
D	1257 Laurel Street	National Register Criterion C Status Code 5S3: appears to be individually eligible for local listing or designation through survey evaluation
Near Potential Housing Locations		
E	1108 Pine Street	National Register Criterion C Status Code 5S1: eligible for listing under an existing local ordinance
F	Holy Trinity Parish Home 330 Ravenswood Avenue	National Register Criterion A Status Code 5S1: eligible for listing under an existing local ordinance
G	1886 Nativity of the Holy Virgin Church (Holy Trinity Episcopal Church/Russian Orthodox Church) 1220 Crane Street	National Register Criterion A Status Code 3S: appears eligible for separate listing in the National Register or California Register Within the City's (H) Historic Site District Zone

Notes: Status Codes are from the California Historical Resources Information System (CHRIS).

Source: Historic Resources Report, Knapp Architects, February 2013.

2. Potential Historic Resources

The California Register recognizes several “property” types, of which two would apply to sites under consideration in the Plan Components update: buildings and districts. A district is a group of properties which when taken as a whole have historical significance, even if the individual components are not significant on their own.

The Historic Resources Report prepared for the Plan Components found that potential housing Site 1 (Veterans Affairs Campus) may be eligible for listing on the California Register. Table 4.4-2 provides a brief description of each of the five potential housing sites identified for higher density zoning and their current potential for listing on the California Register.

TABLE 4.4-2 HISTORIC RESOURCES WITHIN THE POTENTIAL HOUSING SITES

Site	Site Name/Address	Site Description	California Register
1	Veterans Affairs Campus 700 block of Willow Road	Vacant portion of Veteran’s campus. Campus includes historically significant buildings.	Yes
2	MidPen’s Gateway Apartments 1200 block of Willow Road	Existing buildings and landscape appear less than 50 years old.	No
3	MidPen’s Gateway Apartments 1300 block of Willow Road	Existing buildings and landscape appear less than 50 years old.	No
4	Hamilton Avenue 700-800 blocks of Hamilton Avenue	Small industrial/commercial buildings which may in whole or in part be more than 50 years old. None appear to remain as either a cohesive historic complex or is architecturally significant in its own right.	No
5	Haven Avenue 3600 block of Haven Avenue	Existing buildings are less than 50 years old, except for possibly two. One is in severe disrepair. The other’s original building cladding is unknown and appears to have been part of a larger complex which is no longer extant.	No

Source: Historic Report, Knapp Architects, February 2013.

i. Housing Site 1 - 700 block of Willow Road

Housing Site 1 has the potential to impact an area within Menlo Park that is potentially eligible for listing as a historic district. A detailed description of this location is included in Appendix C of this EA and is summarized as follows:

Site 1 is a 1.89-acre parcel at the south corner of the Veterans Affairs Palo Alto Health Care System Menlo Park Division just north of the intersection of Willow Road and Perimeter Drive South. The adjacent area outside the Veterans campus to the east across Willow Road is a variety of multi-family housing developments from the past three or four decades that do not appear to meet any of the California Register Criteria. Potential housing Site 1 has a parking lot on its northwest end and an open, landscaped area with large trees on its southeast end.

To the north-northeast of the site is Veterans campus Building 324, and to the north-northwest of the site is Building 321, both large psychiatric facilities constructed in recent decades and previously determined not to be eligible for listing in the National Register. Perimeter Road South forms the southwest side of the site.

The Veterans campus contains a wide-ranging mix of buildings, some of which are historically significant. The Veterans campus is associated with Camp Fremont, a World War I-era facility located mainly near what is now Downtown Menlo Park. In 1917, the facility was established on a leasehold of 25,000 acres with a main camp of 1,300 acres just west of El Camino Real between Alameda de las Pulgas and San Francisquito Creek. While the main camp was dismantled immediately after World War I with almost no remaining traces, the hospital remained in operation, under the Public Health Service from 1919-1922 and then operated and expanded by the Veterans Bureau and its successors.⁵

Although the Veterans campus is not listed in the 1990 Menlo Park survey, the Department of Veterans Affairs and its predecessors have completed historical studies and inventories as well as evaluations under Section 106 of the National Historic Preservation Act. According to a new historical inventory of the Veterans campus, currently being finalized for the Department of Veterans Affairs, the Personnel Quarters Historic District, a discontinuous historic district eligible to the National Register, has been identified. The period of significance for this District is 1922-1930. This District consists of 17 contributing buildings in four separate areas located on the perimeter of the 95-acre Veterans campus. These buildings are significant for their association with important historical events and for their design and construction, according to the National Register nomination form included in the historical inventory for the Veterans campus. The buildings in this District include houses of key hospital officials, multi-unit staff quarters, and garages. The nomination does not designate site or landscape elements, only buildings, for this District. Building 222 and its garage, Building 222G, adjacent to Site 1, make up one of the four separate areas that comprise this District. Building 222G is located between the potential housing Site 1 and Willow Road.

ii. Infill Areas Around Downtown

The infill housing would potentially occur in three sub-areas in the area surrounding the El Camino Real/Downtown Specific Plan. Infill sites around the downtown area and their relationship to the previously listed historic resources are shown on Figure 4.4-1.

⁵ Wickert, Linda, survey coordinator. *City of Menlo Park Historic Building Survey*. San Mateo County Historical Society. Menlo Park, 1990.

The first infill area is roughly parallel to the Southern Pacific right-of-way from Ravenswood Avenue northeast to Encinal Avenue. This area lies further northeast of the railroad at Ravenswood Avenue and closer to it at Encinal Avenue. Most of the properties in this area are single-family or multi-family residential. The infill parcels in this area are on Laurel Street, Glenwood Avenue, and Mills Street. As shown on Figure 4.4-1, this infill area is near a Historic Site District (H) property; however, none of the potential infill locations are adjacent to this zone.

The second infill area around downtown occupies most of the area between Valparaiso and Oak Grove Avenues from University Drive to Hoover Street, extending closer to Oak Grove on the northeast side of Crane than on University Drive. Two parcels on Hoover Street and one on Valparaiso Avenue are designated for infill housing. As shown on Figure 4.4-1, this infill area is near a Historic Site District (H) property; however, none of the potential infill locations are adjacent to this zone.

The third infill area is roughly bound by Santa Cruz Avenue, Arbor Road, and Middle Road up to University Drive, where it becomes narrower as it extends almost to El Camino Real. The lots identified for infill housing are distributed fairly evenly in the third area.

As previously described above, the infill lots around the downtown area include three individual properties previously designated as historical resources (417 Glenwood Avenue, 1320 Mills Street, and 1257 Laurel Street.) However, these the City does not have and areas designated historic districts. The Historic Resources Report prepared for the Plan Components found that some of the additional infill properties appear to be more than 50 years old and relatively little changed, so they, too, may be eligible to the California Register.

iii. Second Units

With the potential future development under the Plan Components it is anticipated that 300 additional second units could be built by buildout year 2035. For the purposes of this EA it is assumed that these potential units would apply to all single-family lots 6,000 square feet or greater in Menlo Park. There are no single-family zoned lots within or adjacent to the two properties zoned Historic (H). However, as previously discussed, while a search of multiple sources was conducted for the Plan Components' Historic Resources Report, there is no complete and current inventory of all single-family houses in Menlo Park that are eligible to the California Register.

3. Archeological Resources

Archaeological resources may be considered to be either “unique archaeological resources” or “historical resources” as defined by CEQA and described previously. CEQA Section 21083.2, defines a “unique archaeological resource” as 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.

The Plan Components would occur on developed or highly disturbed sites throughout the EA Study Area; however, there is potential for archeological resources to exist.

4. Paleontological Resources

Paleontological resources, or fossils, are any evidence of past life, including remains, traces, and imprints of once-living organisms preserved in rocks and sediments and provide information about the history of life on earth dating back billions of years ago. According to the Society of Vertebrate Paleontology, significant paleontological resources include fossils of identifiable vertebrate fossils, large or small, uncommon invertebrate, plant, and trace fossils. Fossils are nonrenewable paleontological resources that are afforded protection by federal, state, and local environmental laws and regulations (Paleontological Resources Preservation Act). Accordingly, the potential of a particular area to produce a valuable paleontological resource is largely dependent on the geologic age and origin of the underlying rocks.

The natural geology of the EA Study Area is comprised of Pleistocene-age (10,000 to 2.6 million years ago) alluvial fan deposits and Holocene-age (less than 10,000 years ago) levee deposits. These geologic deposits are likely to underlie the artificial fill or disturbed soil located directly under the urbanized and developed areas of the City, which is typical of urbanized areas. A summary of each of the three areas is described below.

a. Artificial Fill

Artificial fill is an engineered mixture 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; Artificial fill would not comprise any significant fossil records that could contribute to science or natural history, and would not contain unique or significant paleontological resources.

b. Holocene Levee Deposits (Holocene: Recent to 10,000 years old)

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). These alluvial deposits contain vertebrate and invertebrate fossils of extant, modern taxa,⁶ which are generally not considered significant paleontological resources.⁷ 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.⁸

c. Pleistocene Alluvium (Pleistocene: 10,000 to 2.6 million years old)

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. Stabilized alluvial fan deposits are old enough to have stiffened and preserved the remains of Pleistocene organisms; therefore, could have high potential for producing paleontologically significant resources.⁹

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.¹⁰ 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

⁶ Helley, E.J, et al, 1979. *Flatland Deposits of the San Francisco Bay Region - Their Geology and Engineering Properties, and Their Importance to Comprehensive Planning*, Geological Survey Professional Paper 943, Washington, D.C.: U.S. Geological Survey and Department of Housing and Urban Development.

⁷ Society of Vertebrate Paleontology, 2010. *Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources*.

⁸ University of California Museum of Paleontology (UCMP), *Collections Database*. <http://www.ucmp.berkeley.edu/science/collections.php>, accessed December 14, 2012.

⁹ Society of Vertebrate Paleontology, 2010. *Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources*.

¹⁰ University of California Museum of Paleontology (UCMP), *Collections Database*. <http://www.ucmp.berkeley.edu/science/collections.php>, accessed December 14, 2012.

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 EA Study Area is unknown. Impacts to unknown paleontological resources are discussed below in Section D.3.

C. Standards of Significance

Cultural resource impacts associated with the future development would be considered significant if they would:

1. Cause a substantial adverse change in the significance of a historical resource as defined in CCR Section 15064.5.
2. Cause a substantial adverse change in the significance of an archaeological resource pursuant to CCR Section 15064.5.
3. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.
4. Disturb any human remains, including those interred outside of formal cemeteries.

D. Impact Discussion

1. **Cause a substantial adverse change in the significance of a historical resource as defined in CCR Section 15064.5.**

The types of cultural resources that meet the definition of historical resources under CEQA generally consist of districts, sites, buildings, structures, and objects that are significant for their traditional, cultural, and/or historical associations. Commonly, the two main resource types that are subject to impact, and that may be impacted by development allowed under the Plan Components, are historical archaeological deposits and historical architectural resources, as discussed below. Human remains are addressed below in Section D.4 of the Impact Discussion.

a. Historical Archaeological Deposits

Historical and pre-contact archaeological deposits that meet the definition of historical resources under CEQA could be damaged or destroyed by ground-disturbing activities associated with development allowed under the Plan Components. Should this occur, the ability of the deposits to convey their significance, either as containing information important in prehistory or history, or as possessing traditional or cultural significance to Native American or other descendant communities, would be materially impaired.

It is highly improbable that archaeological deposits associated with the historic period of Menlo Park exist in the EA Study Area as the locations identified as potential for future housing would be concentrated on sites either already developed, and/or in close proximity to existing residential and residential-serving development, where development will have a lesser impact on historical archeological resources. In addition, it is highly improbable that unrecorded Native American prehistoric archaeological sites exist in the areas identified for potential future housing, including those that are buried under alluvial or fill soils.

However, the implementation of the following existing and proposed General Plan goals and polices would provide for the identification of archaeological deposits prior to actions that may disturb such deposits; the preservation and protection of such deposits; the evaluation of unanticipated finds made during construction; and the protection and respectful treatment of human remains associated with archaeological deposits.

i. Amended General Plan Housing, Open Space and Conservation, Noise and Seismic Safety and Safety Elements

- ◆ Goal OSC-3: Protect and Enhance Historic Resources: Protect and enhance cultural and historical resources for their aesthetic, scientific, educational, and cultural values.
- ◆ Policy OSC-3.1: Prehistoric or Historic Cultural Resources Investigation and Preservation. Preserve historical and cultural resources to the maximum extent practical.
- ◆ Policy OSC-3.2: Prehistoric or Historic Cultural Resources Protection. Require significant historic or prehistoric artifacts be examined by a qualified consulting archaeologist or historian for appropriate protection and preservation, and to ensure compliance with local, state and federal regulations.
- ◆ Policy OSC-3.3: Archaeological or Paleontological Resources Protection. Protect prehistoric or historic cultural resources either on site or through appropriate documentation as a condition of removal. Require that when a development project has sufficient flexibility, avoidance and preservation of the resource shall be the primary mitigation measure, unless the City identifies superior mitigation. If resources are documented, undertake coordination with descendants and/or stakeholder groups, as warranted.
- ◆ Policy OSC-3.4: Prehistoric or Historic Cultural Resources Found During Construction. Require that if cultural resources, including archaeological or paleontological resources, are uncovered during grading or other on-site excavation activities, construction shall stop until appropriate mitigation is implemented.
- ◆ Policy OSC-3.5: Consultation with Native American Tribes: Consult with those Native American tribes with ancestral ties to the Menlo Park city limits regarding General Plan Amendments and land use policy changes.

- ◆ Policy OSC-3.6: Identification of Potential Historic Resources: Identify historic resources for the historic district in the Zoning Ordinance and require design review of proposals affecting historic buildings.

Furthermore, this goal and policies would protect historical archaeological deposits in the EA Study Area by providing for the early detection of potential conflicts between development and resource protection, and by preventing or minimizing the material impairment of the ability of archaeological deposits to convey their significance through excavation or preservation. Implementation of the goal and policies identified above, as well as compliance with federal and State laws, would reduce potential impacts to historical archaeological deposits to a *less-than-significant* level.

b. Historical Architectural Resources

Development planned for under the Plan Components could result in significant impacts to historical architectural resources. The Plan Components allow for the development of residential uses that have the potential of significantly impacting historical architectural resources. The following describes the impacts to historical architectural resources by potential housing location:

i. *Housing Site 1 - 700 block of Willow Road*

As discussed above the Personnel Quarters Historic District on the Veterans campus is made up of four discontinuous areas. One of the four historical resources that would be affected by future development on Site 1 (Veterans Affairs Campus) is located nearby the section containing Building 222 and Building 222G, and its garage, respectively. The other three areas of this District and the individually eligible historical resources on the Veterans campus are not visually connected with Site 1. In each case, non-historic buildings between Site 1 and the other three District components on the Veterans campus would make future development on Site 1 difficult or impossible to see from those portions of this District and impacts to those historic resources would be *less than significant*.

Future development on Site 1 could significantly impact Buildings 222 and 222G. The National Register nomination form prepared by the Department of Veterans Affairs cites the “park-like setting” of the Buildings 222 and 222G and their spatial relationship as important to their significance. For example, if future development on Site 1 eliminated the trees and placed buildings within the existing “park-like” zone that surrounds Buildings 222 and 222G, it could visually disrupt the spatial relationship cited in the National Register form and impair the integrity of setting, feeling, and association of the historical buildings. Because the development plans for Site 1 are unknown, impacts from future residential development on this site would be considered *significant*.

ii. Housing Sites 2 through 5

Because these potential housing sites and their immediate surroundings do not contain properties currently on the California Register or appear to be eligible for listing on the California Register, as described above, impacts from implementation of the Plan Components would result in *less-than-significant* impacts on historical resources at these sites.

iii. Infill Housing around Downtown

For sites where historical buildings are demolished to allow new housing, the infill program would cause *significant* impacts. Even if the historical resources were retained future development under the Plan Components permitted by the infill program could cause a significant impact on the historical resource in question if the new construction were incompatible with the site relationships that characterize the existing property (for example, new construction which extends to all property lines where the historical pattern is to have setbacks). There could also be impacts if the massing (height and bulk) of the new construction were incompatible with the historical resource. Lastly, the design characteristics and materials of the new construction could cause an impact on adjoining or nearby historical buildings (for example, a flat-roofed building with aluminum windows and rain-screen wall finish next to a gable-roofed building with period-revival stucco walls). Because the purpose of the infill program is to allow denser new housing and because the factors described above which could impair the historic integrity of resources are generally more important with larger and denser new construction, the impacts on historical resources would be *significant*.

iv. Second Units

The second unit program could cause significant impacts if it resulted in demolition of historical structures or permitted construction of additions incompatible with historical structures in scale or design and materials. Although it would be less likely to occur, there could also be impacts on historical structures if second units on adjacent lots destroyed spatial relationships and urban patterns important to historical resources. In historic districts, second units could similarly cause impacts by disrupting the prevailing scale or spatial relationships of the district or by introducing design characteristics or building materials incompatible with the character of the district. There are no single-family zoned lots within or adjacent to the City's two properties zoned Historic (H), thus no impacts to from potential second units to the Historic (H) zone would occur as a result of the Plan Components. However, as previously discussed, while a search of multiple sources was conducted for the Plan Components' Historic Resources Report, there is no complete and current inventory of all single-family houses in Menlo Park that are eligible to the California Register. Considering this and the fact that it is unknown where second units would ultimately be built, the impacts on historical resources associated with future second units would be considered *significant*.

The proposed General Plan policies would reduce potential impacts, as outlined in the goals, policies, and actions listed above under Impact Discussion D.1.a. and as follows:

a) Current General Plan Land Use and Circulation Element

- ◆ Policy I-A-2: New residential developments shall be designed to be compatible with Menlo Park's residential character.
- ◆ Policy I-A-7: Development of secondary residential units on existing developed residential lots shall be encouraged consistent with adopted City standards.
- ◆ Policy I-G-5: The City shall encourage the retention of at least 10 acres of open space on the St. Patrick's property through consideration of various alternatives to future development including rezoning consistent with existing uses, cluster development, acquisition of a permanent open space easement, and/or transfer of development rights.
- ◆ Policy I-H-11: Buildings, objects, and sites of historic and/or cultural significance should be preserved.

b) Amended General Housing and Plan Open Space and Conservation Elements

- ◆ Policy OSC-3.6: Identification of Potential Historic Resources: Identify historic resources for the historic district in the Zoning Ordinance and require design review of proposals affecting historic buildings.
- ◆ Policy OSC-1.15: Heritage Trees: Protect Heritage Trees, including during construction activities through enforcement of the Heritage Tree Ordinance (Chapter 13.24 of the Municipal Code).
- ◆ Program OSC-3.A: Evaluate Historic Resources Around the Downtown Specific Plan Area: Hire a cultural resources professional to conduct a Historic Resources Survey of potential infill sites around the Downtown Specific Plan to determine whether the designated infill housing sites, or adjacent lots, contain buildings eligible to the California Register and/or the historic zoning designation.
- ◆ Program OSC-3.B: Support a Study of Cultural Resources on the Veteran's Affairs **Clinic Site**: Work with the VA to ensure study and protection of cultural resources through oversight by a cultural resource professional of any proposed development on the vacant portion of the Veteran's Affairs Clinic site.
- ◆ Policy H-4.3: The City will review proposed new housing in order to achieve excellence in development design through an efficient process and will encourage infill development on vacant and underutilized sites that is harmonious with the character of Menlo Park residential neighborhoods. New construction in existing neighborhoods shall be designed to emphasize the preservation and improvement of the stability and character of the individual neighborhood.

The City will also encourage innovative design that creates housing opportunities that are complementary to the location of the development. It is the City's intent to enhance neighborhood identity and sense of community by ensuring that all new housing will (1) have a sensitive transition with the surrounding area, (2) avoid unreasonably affecting the privacy of neighboring properties, or (3) avoid impairing access to light and air of structures on neighboring properties.

While implementation of the goals, policies, and programs identified above, as well as compliance with federal and State laws and the Zoning Ordinance, would reduce potential impacts to a *less-than-significant* level from adjacent construction and proposed modifications to historical architectural resources on potential housing Site 1 (Veterans Affairs Campus), the future development on potential infill sites around downtown and future second units could lead to:

- ◆ Demolition, which by definition results in the material impairment of a resource's ability to convey its significance.
- ◆ Inappropriate modification, which may use incompatible materials, designs, or construction techniques in a manner that alters character-defining features.
- ◆ Inappropriate new construction, which could introduce incompatible new buildings that clash with an established architectural context.

Any of these scenarios described above, but especially demolition and alteration, have the potential to change the historic fabric or setting of an architectural resource such that the resource's ability to convey its significance may be materially impaired, which would result in a *significant* impact.

2. Cause a substantial adverse change in the significance of an archaeological resource pursuant to CCR Section 15064.5.

Archaeological deposits that meet the definition of unique archaeological resources under CEQA could be damaged or destroyed by ground disturbing activities associated with development planned for under the proposed Plan Components.¹¹ Should this occur, the ability of the deposits to convey their significance, either as contain-

¹¹ If the cultural resource in question is an archaeological site, CEQA Guidelines Section 15064.5(c)(1) requires that the lead agency first determine if the site is a historical resource as defined in CEQA Guidelines Section 15064.5(a). If the site qualifies as a historical resource, potential adverse impacts must be considered through the process that governs the treatment of historical resources. If the archaeological site does not qualify as a historical resource but does qualify as a unique archaeological site, then it is treated in accordance with PRC Section 21083.2 (CEQA Guidelines Section 15064.5(c)(3)). In practice,

ing information important in prehistory or history, or as possessing traditional or cultural significance to Native American or other descendant communities, would be materially impaired. In addition to the likely presence of unrecorded Native American archaeological sites, it is highly improbable that significant archaeological deposits exist in the EA Study Area.

However, as described in Section D.1.a, Historical Archaeological Deposits, the Plan Components include goals and policies that would address potential impacts to archaeological deposits. Any future development would provide for the identification of archaeological deposits prior to actions that may disturb such deposits; the preservation and protection of such deposits; the evaluation of unanticipated finds made during construction; and the protection and respectful treatment of human remains associated with archaeological deposits.

The Plan Components would provide for the protection of archaeological deposits in the EA Study Area by providing for the early detection of potential conflicts between development and resource protection, and by preventing or minimizing the material impairment of the ability of archaeological deposits to convey their significance through excavation or preservation. Implementation of the goal and policies identified above, as well as compliance with federal and State laws, would reduce potential impacts to archaeological deposits to a *less-than-significant* level.

3. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

No known fossils or unique paleontological resources or unique geologic features are present in the EA Study Area; however, geological formations underlying Menlo Park have the potential for containing paleontological resources (i.e. fossils). There could also be fossils of potential scientific significance in other geological formations that are not recorded in the database. It is possible that ground-disturbing construction associated with development allowed under the proposed General Plan could reach significant depths below the ground surface. Should this occur, damage to, or destruction of, paleontological resources could result, which would prevent the realization of their scientific data potential through documentation and analysis.

The proposed Open Space and Conservation Element includes two policies that will provide for the mitigation of impacts to paleontological resources. Policy OSC-3.3 protect prehistoric or historic cultural resources either on site or through appropriate documentation as a condition of removal and Policy OSC-3.4 requires that if cultural resources, including archaeological or paleontological resources, are uncovered during grading or other on-site excavation activities, construction shall stop until appropriate mitigation is implemented.

most archaeological sites that meet the definition of a unique archaeological resource will also meet the definition of a historical resource.

The policies described above provide for the protection of paleontological resources in the EA Study Area by providing for work to stop to prevent additional disturbance of finds discovered during construction, and providing for the recovery of scientifically consequential information that would offset the loss of the resource. Implementation of the policies identified above, as well as compliance with federal and State laws, would reduce potential impacts to paleontological resources to a *less-than-significant* level.

4. Disturb any human remains, including those interred outside of formal cemeteries.

Human remains associated with pre-contact archaeological deposits could exist in the EA Study Area, and could be encountered during at the time potential future development occurs. The associated ground-disturbing activities, such as site grading and trenching for utilities, have the potential to disturb human remains interred outside of formal cemeteries. Descendant communities may ascribe religious or cultural significance to such remains, and may view their disturbance as an unmitigable impact. Disturbance of unknown human remains would be a significant impact.

However, any human remains encountered during ground-disturbing activities are required to be treated in accordance with California Health and Safety Code Section 7050.5, Public Resources Code Section 5097.98 and the California Code of Regulations Section 15064.5(e) (CEQA), which state the mandated procedures of conduct following the discovery of human remains. According to the provisions in CEQA, if human remains are encountered at the site, all work in the immediate vicinity of the discovery shall cease and necessary steps to ensure the integrity of the immediate area shall be taken. The San Mateo County Coroner shall be notified immediately. The Coroner shall then determine whether the remains are Native American. If the Coroner determines the remains are Native American, the Coroner shall notify the NAHC within 24 hours, who will, in turn, notify the person the NAHC identifies as the MLD of any human remains. Further actions shall be determined, in part, by the desires of the MLD. The MLD has 48 hours to make recommendations regarding the disposition of the remains following notification from the NAHC of the discovery. If the MLD does not make recommendations within 48 hours, the owner shall, with appropriate dignity, reinter the remains in an area of the property secure from further disturbance. Alternatively, if the owner does not accept the MLD's recommendations, the owner or the descendent may request mediation by the NAHC. Through mandatory regulatory procedures described above impacts to human remains would be *less than significant*.

5. Cumulative Impacts

Development planned for under the Plan Components, in conjunction with buildout of the City and the region, has the potential to cumulatively impact historical resources. Such impacts could result from more intensive

land uses, incompatible site designs that impact the historical integrity of nearby historical buildings and districts, and demolition of historical resources. For built environment historical resources, however, the proposed goals, policies, and actions described in Section D.1, Impact Discussion, are anticipated to mitigate or avoid most impacts to such resources that would occur from development and land use changes allowed by the Plan Components.

Development within the EA Study Area also has the potential to adversely affect archaeological resources, paleontological resources, and human remains through their destruction or disturbance. Therefore, before mitigation, development allowed by the Plan Components, in combination with other future development in the City and the region, has the potential to cause adverse cumulative impacts to cultural resources due to their destruction or loss of integrity. However, development proposals received by the City would, if necessary, undergo review by a cultural resources professional, as outlined in Program OSC-3.A of the Plan Components, and project-specific mitigations would be provided as a result of this review.

Therefore, the potential future development under the Plan Components is not expected to make a significant contribution to cumulative impacts to cultural resources. Implementation of the goals, policies, and actions of the existing and proposed General Plan, as well as compliance with federal and State laws, would reduce potential cumulative impacts to cultural resources to a *less-than-significant* level.

E. Impacts and Mitigation Measures

Impact CULT-1: Future development on potential infill sites around downtown and future second units could lead to demolition and alteration that has the potential to change the historic fabric or setting of historic architectural resources such that the resource's ability to convey its significance may be materially impaired.

Mitigation Measure CULT-1: At the time that individual projects are proposed for residential development on any infill or second unit housing sites around the downtown area with a building more than 50 years old or any site adjoining a property with a building more than 50 years old, the City shall require the project applicant to prepare a site-specific evaluations to determine if the project is subject to completion of a site-specific historic resources study. If it is determined that a site-specific historic resources study is required the study shall be prepared by a qualified architectural historian meeting the Secretary of the Interior's Standards for Architecture or Architectural History. At a minimum, the study shall consist of a records search of the California Historical Resources Information System, 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 study shall describe the historic context and setting, methods used in the investigation, results of the evaluation, and recommendations for management of identified resources. If applicable, the specific requirements for inventory areas and documentation format required by certain agencies, such as the Federal Highway Administration and California Department of Transportation (Caltrans), shall be adhered to.

If the project site or adjacent properties are found to be eligible for listing on the California Register, the project shall be required to conform to the current *Secretary of the Interior's Standards for Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, and Restoring Historic Buildings*, which 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: Implementation of Mitigation Measure CULT-1 would ensure that impacts to historic resources from future development on potential infill sites around downtown and on single-family lots found appropriated for second units with would be *less than significant*.

4.5 GEOLOGY AND SOILS

The following chapter summarizes information concerning current geologic conditions at the EA Study Area. It also provides an evaluation of the potential environmental consequences of future development that could occur by adopting and implementing the proposed Housing Element Update, General Plan Consistency Update, and associated Zoning Ordinances amendments, together referred to as the “Plan Components,” to result in significant direct and indirect environmental impacts related to geology and soils.

A. *Regulatory Framework*

The State of California and local governmental agencies have established regulations and policies that relate to geological hazards and seismic safety, especially where they pertain to the structural integrity of buildings. The following regulations are relevant to the environmental review process for geology and soils in this EA.

1. **State Laws and Regulations**

a. **Alquist-Priolo Earthquake Fault Zoning Act**

The Alquist-Priolo Earthquake Fault Zoning Act was passed in 1972 to reduce the hazards posed by surface fault rupture to structures used for human occupancy.¹ The main purpose of the Act is to prevent the construction of buildings used for human occupancy on top of active faults. Although the Act addresses the hazards associated with surface fault rupture, it does not address other earthquake-related hazards, such as seismically-induced ground shaking or landslides.²

The law requires the State Geologist to establish regulatory zones (known as Earthquake Fault Zones or Alquist-Priolo Zones) around the surface traces of active faults, and to issue appropriate maps that depict these zones.³ The maps are then distributed to all affected cities, counties, and State agencies for their use in planning and controlling new or renewed construction. In general, construction within 50 feet of an active fault zone is prohibited.

¹ Known as the *Alquist-Priolo Special Studies Zones Act* prior to 1994.

² California Geological Survey (CGS), Alquist-Priolo Earthquake Fault Zoning Act. URL: <http://www.consrv.ca.gov/cgs/rghm/ap/Pages/main.aspx>, accessed on January 9, 2013.

³ Earthquake Fault Zones are regulatory zones around active faults. The zones average about 0.25 mi. wide. <http://www.consrv.ca.gov/cgs/rghm/ap/Pages/main.aspx>, accessed on January 9, 2013.

b. Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act of 1990 addresses earthquake hazards other than surface fault rupture. These hazards include strong ground shaking, earthquake-induced landslides, liquefaction, or other ground failures.⁴ Much like the Alquist-Priolo Earthquake Fault Zoning Act, these seismic hazard zones are mapped by the State Geologist in order to assist local governments in the land use planning process. The Act states that “it is necessary to identify and map seismic hazard zones in order for cities and counties to adequately prepare the safety element of their general plans and to encourage land use management policies and regulations to reduce and mitigate those hazards to protect public health and safety.” The Act also states that “cities and counties shall require, prior to the approval of a project located in a seismic hazard zone, a geotechnical report defining and delineating any seismic hazard.”⁵

c. California Building Standards Code

The California Building Standards Code, also known as Title 24 of the California Code of Regulations, reflects various building criteria from three different sources.⁶ One of these sources is the International Building Code (IBC), a model building code adopted across the United States that has been modified to suit conditions in the State, thereby creating what is known as the California Building Code (CBC), or Part 2 of CCR Title 24.

The CBC is updated every three years, and the current 2010 CBC took effect on January 1, 2011. The 2013 CBC is scheduled to go into effect in January 2014.⁷ Through the CBC, the State provides a minimum standard for building design and construction. The CBC contains specific requirements for seismic safety, excavation, foundations, retaining walls, and site demolition. It also regulates grading activities, including excavation, grading, fill, drainage, and erosion control.⁸

⁴ California Geological Survey, Special Publication 118, *Recommended Criteria for Delineating Seismic Hazard Zones in California*. May 1992 (revised April 2004).

⁵ California Public Resources Code, Division 2, Chapter 7.8, Article 7.8, Section 2697(a).

⁶ California Building Standards Commission, <http://www.bsc.ca.gov/codes.aspx>, accessed on January 9, 2013.

⁷ California Building Standards Commission, <http://www.bsc.ca.gov/Home.aspx>, accessed on January 9, 2013.

⁸ California Building Standards Commission, 2011. *2010 California Building Standards Administrative Code California Code of Regulations, Title 24, Part 2*.

2. Local Regulations and Policies

a. Emergency Operation Plan⁹

The City of Menlo Park adopted an Emergency Operation Plan (EOP) in 2011. The City developed the EOP to better prepare for responses to emergency situations that could result from natural disasters and technological incidents. To prepare for these emergencies, the City estimated the potential risks associated with earthquakes, flooding, wildland fire, and other disasters. Based on this evaluation, various preparation strategies were developed. These strategies are addressed in Volume 2 of the EOP as follows: Chapter 1 introduces the City's Emergency Management System and four emergency management phases, as well as required activities and responsible parties for each phase; Chapter 2 describes regulatory frameworks and relevant legal authorities; Chapter 3 provides a threat assessment including estimated potential risks associated with various natural and man-made disasters; and Chapter 4 provides a recovery plan, including damage assessments and disaster assistance programs.

b. Menlo Park Municipal Code

i. Chapter 12.04, Adoption of Codes

In accordance with Title 12, Chapter 12.04 of the City of Menlo Park Municipal Code, the City has adopted all parts of the most recent triennial publication of the California Code of Regulations, Title 24 except Part 9, California Fire Code, and are known as the building code of the City. In addition, Chapters 12.06 through 12.18 of the Municipal Code implement certain amendments to the building-related codes of the City.

ii. Grading and Drainage Control Guidelines¹⁰

The City of Menlo Park Engineering Division's Grading and Drainage Control Guidelines establish design requirements for new construction, additions to existing buildings, and redevelopment projects. These guidelines describe stormwater control and treatment measures (including Best Management Practices [BMPs] such as underground detention systems, vegetated swales, inlet/filter basins, and the like) that are intended to reduce stormwater runoff and prevent sediment and pollutants from entering into the City's storm drain system and creeks, as well as the San Francisco Bay.

In addition, the guidelines present the requirements for grading and drainage (G&D) plans, which the City of Menlo Park Engineering Division requires for any building project that will affect more than 500 square

⁹ City of Menlo Park, 2011. *Emergency Operation Plan, Basic Plan, Volume 2.*

¹⁰ City of Menlo Park, *Grading and Drainage Control Guidelines*, August 2010, http://www.menlopark.org/departments/pwk/grade_guide.pdf, accessed on January 9, 2013.

feet of a given lot. The guidelines also require the inclusion of site plans and storm drain control plans in a G&D plan, so that proposed storm drain and utility systems, frontage improvements, and irrigation plans are clearly identified. The City also requires G&D plans to address erosion and sedimentation control details and to include an Impervious Area Worksheet that evaluates potential changes to impervious areas.

B. Existing Conditions

1. Regional Seismicity

The Earth's crust includes tectonic plates that locally collide with or slide past one another along plate boundaries. California is particularly susceptible to such plate movements, notably the largely horizontal or "strike-slip" movement of the Pacific Plate, as it impinges on the North American Plate. In general, earthquakes occur when the accumulated stress along a plate boundary or fault is suddenly released, resulting in seismic slippage. This slippage can vary widely in magnitude, ranging in scale from a few millimeters or centimeters, to tens of feet.

The performance of man-made structures during a major seismic event varies considerably due to a number of factors: location with respect to active fault traces or areas prone to liquefaction or seismically-induced landslides; the type of building construction (i.e. wood frame, unreinforced masonry, non-ductile concrete frame); the proximity, magnitude, and intensity of the seismic event itself; and many other factors. In general, evidence from past earthquakes shows that wood frame structures tend to perform well especially when their foundations are properly designed and anchored. Older, unreinforced masonry structures, on the other hand, do not perform as well, especially if they have not undergone appropriate seismic retrofitting. Applicable building code requirements, such as those found in the CBC, include seismic requirements that are designed to ensure the satisfactory performance of building materials under prescribed seismic conditions.

a. Faults

The EA Study Area, like much of the San Francisco Bay area, is vulnerable to seismic activity due to the presence of several active faults in the region. The closest and most prominent active fault near the EA Study Area is the San Andreas Fault System, which is located about 2.5 miles west of Interstate 280 and the western boundary of the EA Study Area.¹¹ Other active earthquake faults in the region include the Monte

¹¹ United States Geological Survey (USGS), Montara Mountain (1980), Palo Alto (1973), San Mateo (1980), and Woodside (1973), Quadrangles, California, 7.5 Minute Series (Topographic), scale 1:24,000.

Vista Fault, which lies roughly 3 miles to the south, the Hayward Fault which lies roughly 13 miles to the east, the Calaveras Fault which is approximately 19 miles to the east, and the San Gregorio Faults, whose trace passes as close as 13 miles southwest of the EA Study Area.¹² No mapped earthquake faults run within the EA Study Area. Thus, surface fault rupture is not considered a significant hazard within the EA Study Area.¹³

b. Ground Shaking

The severity of ground shaking depends on several variables such as earthquake magnitude, hypocenter proximity, local geology including the properties of unconsolidated sediments, groundwater conditions, and topographic setting. In general, ground shaking hazards are most pronounced in areas that are underlain by loosely consolidated soil/sediment.¹⁴

When earthquake faults within the Bay Area's nine-county area were considered, the United States Geological Survey (USGS) estimated that the probability of a magnitude (M) 6.7 or greater earthquake prior to year 2032 is 62 percent, or roughly a two-thirds probability over this timeframe. Individually, the forecasted probability for each individual fault to produce an M 6.7 or greater seismic event by the year 2032 is as follows: 27 percent for the Hayward Fault, 21 percent for the San Andreas Fault, 11 percent for the Calaveras Fault, and ten percent for the San Gregorio Fault.¹⁵ Earthquakes of this magnitude can create ground accelerations severe enough to cause major damage to structures and foundations not designed to resist the forces generated by earthquakes. Underground utility lines are also susceptible where they lack sufficient flexibility to accommodate the seismic ground motion.¹⁶ In the event of an earthquake of this magnitude, the seismic forecasts presented on the Association of Bay Area Governments' website (developed by a cooperative

¹² Hart, E.W., and Bryant, W.A., *Fault-Rupture Hazard Zones in California, Alquist-Priolo Earthquake Fault Zoning Act with Index to Earthquake Fault Zones Maps*, California Geological Survey, Special Publication 42, revised 1997, Supplements 1 and 2, 1999, Supplement 3, 2003. ¹⁹ International Conference of Building Officials, *Uniform Building Code*, Volumes 1, 2 & 3; Chapter 16, Structural Forces (earthquake provisions).

¹³ Annex to 2010 Association of Bay Area Governments (ABAG), *Local Hazard Mitigation Plan Taming Natural Disasters*, City of Menlo Park, <http://www.ci.menlo-park.ca.us/departments/com/LMHPDraft%20.pdf>, accessed on January 9, 2013.

¹⁴ Southern California Earthquake Center (SCEC), 2011. *Putting Down Roots in Earthquake Country*, Lucile M. Jones, United States Geological Survey (USGS), and Mark Benthien, SCEC.

¹⁵ United States Geological Survey (USGS), San Francisco Region Earthquake Probability, <http://earthquake.usgs.gov/regional/nca/wg02/images/percmap-lrg.html>, accessed January 9, 2013.

¹⁶ Association of Bay Area Governments (ABAG), 1995. *The San Francisco Bay Area On Shaky Ground*, Publication Number P95001EQK, 13 maps, scale 1:1,000,000.

working group that included the USGS and the CGS) suggest that most parts of EA Study Area southwest of Highway 101 are expected to experience “strong” shaking, most sites northeast of Highway 101 are expected to experience “very strong” shaking, and sites located within 1 mile of the Dumbarton Bridge are expected to experience “violent” shaking.¹⁷

The April 1906 earthquake on the San Andreas fault, estimated between M 7.7 and M 8.3, was the largest seismic event in recent history that affected the EA Study Area. More recently, the M 6.9 Loma Prieta earthquake of October 1989 on the San Andreas fault caused significant damage throughout the Bay Area, although no deaths were reported in San Mateo County.

c. Liquefaction

Liquefaction generally occurs in areas where moist, fine-grained, cohesionless sediment or fill materials are subjected to strong, seismically-induced ground shaking. Under certain circumstances, the ground shaking can temporarily transform an otherwise solid material to a fluid state. Liquefaction is a serious hazard because buildings in areas that experience liquefaction may subside and suffer major structural damage. Liquefaction is most often triggered by seismic shaking, but it can also be caused by improper grading, landslides, or other factors. In dry soils, seismic shaking may cause soil to consolidate rather than flow, a process known as densification.

Liquefaction potential in the EA Study Area ranges from very low in the western hill areas to very high in the Baylands. Close to San Francisco Bay, in the northeastern most part of the EA Study Area, the prevailing soil type is known as “Bay Mud,” which consists of silty clay, sand, gravel, peat, and shell fragments. These low-lying areas that front the bay are susceptible to liquefaction. The more eastern portions of the EA Study Area, within 2 miles of the Dumbarton Bridge, are also considered to be a “high hazard” area for earthquake-induced liquefaction.¹⁸ In the westernmost parts of the EA Study Area, the prevailing soil type often consists of alluvium that lies atop the sandstone, chert, shale, and limestone of the Late Jurassic to Early Cretaceous Franciscan Formation.¹⁹ This area is judged to have a low susceptibility to liquefaction.

¹⁷ Association of Bay Area Governments (ABAG), 2012. GIS Viewer, Hazards Maps Earthquake Shaking Scenarios.

¹⁸ California Geological Survey (CGS), 2006. Seismic Hazards Zone, Palo Alto Quadrangle, Official Map, released October 18, 2006. Scale 1:24,000.

¹⁹ City of Menlo Park, 1994. Final Environmental Impact Report for Amendments to the City of Menlo Park General Plan Land Use and Circulation Elements and Zoning Ordinance, pages IV.H-1 to IV.H-5.

2. Landslides, Erosion, and Subsidence

Landslides are gravity-driven movements of earth materials that may include rock, soil, unconsolidated sediment, or combinations of such materials. The rate of landslide movement can vary considerably. Some move rapidly as in a soil or rock avalanche, while other landslides creep or move slowly for extended periods of time. The susceptibility of a given area to landslides depends on many variables, although the general characteristics that influence landslide hazards are well understood. The factors that influence the probability of a landslide and its relative level of risk include the following:

- “ Slope Material: Loose, unconsolidated soils and soft, weak rocks are more hazardous than are firm, consolidated soils or hard bedrock.
- “ Slope Steepness: Most landslides occur on moderate to steep slopes.
- “ Structure and Physical Properties of Materials: This includes the orientation of layering and zones of weakness relative to slope direction.
- “ Water Content: Increased water content increases landslide hazard by decreasing friction and adding weight to the materials on a slope.
- “ Vegetation Coverage: Abundant vegetation with deep roots promote slope stability.
- “ Proximity to Areas of Erosion or Man-made Cuts: Undercutting slopes can greatly increase landslide potential.
- “ Earthquake Ground Motions: Strong seismic ground motions can trigger landslides in marginally stable slopes or loosen slope materials, and also increase the risk of future landslides.

Landslides have the potential to occur within the EA Study Area, most notably on some of the hilly slopes that lie west of the street Alameda de las Pulgas. In general, landslides are commonly associated with bedrock outcrops of the Franciscan Formation, which frequently form steeper slopes. Shale is the most unstable of the rock types within the Franciscan Formation, whereas sandstone and conglomerate tend to be more stable with a lower landslide risk. Much of the upland areas in the EA Study Area are typified by shallow soil that overlies Franciscan bedrock very close to the surface. Landslides are not an issue in parts of the EA Study Area where the topography is flat. Due to the differences in the physical characteristics of slope materials, which markedly influence landslide potential, some superficially similar areas may differ widely in terms of landslide hazards. For this reason, site-specific geotechnical analyses are essential to the accurate assessment of potential landslide hazards at any given project.

3. Land Subsidence

Subsidence hazards are known to be present in the diked baylands due to the highly compressible nature of the underlying fill as well as historical groundwater overdraft.²⁰ Areas susceptible to earthquake-induced subsidence include those areas underlain by thick layers of colluvial material or poorly engineered fill. This fill was reported to have settled historically with hydro-compaction being an element of the settlement as well. Land subsidence occurred within the low-lying areas, mainly along the Bay margins.

4. Expansive soil

Expansive soils can change dramatically in volume depending on moisture content. When wet, these soils can expand; conversely, when dry, they can contract or shrink. Sources of moisture that can trigger this shrink-swell phenomenon can include seasonal rainfall, landscape irrigation, utility leakage, and/or perched groundwater. Expansive soil can exhibit wide cracks in the dry season, and changes in soil volume have the potential to damage concrete slabs, foundations, and pavement. Special building/structure design or soil treatment are often needed in areas with expansive soils.

Expansive soils are typically very fine-grained with a high to very high percentage of clay, typically montmorillonite, smectite, or bentonite clay. Two types of soil tests are used to identify expansive soils. The first is referred to as a linear extensibility test, which measures the change in length of an unconfined clod as the moisture content is decreased from a moist to dry state. The volume change is reported as a percent change for the entire sample. In the linear extensibility test, shrink-swell potential is considered low if the soil has a linear extensibility of less than 3 percent; moderate if 3 to 6 percent; high if 6 to 9 percent; and very high if more than 9 percent.²¹ A linear extensibility of 3 percent or greater indicates that shrinking and swelling has the potential to cause damage to buildings, roads, and other structures.

A 1991 U.S. Department of Agriculture (USDA) soil survey of San Mateo County provides an overview of the soil types present in the EA Study Area soils as well as their physical and engineering properties.²² The study, whose extent embraced the southernmost part of the County including the City of Menlo Park, broadly identified three major soil associations in the EA Study Area: 1) the Accelerator-Fagan association

²⁰ Todd Engineers, 2005. *Feasibility of Supplemental Groundwater Resources Development Menlo Park and East Palo Alto, California*.

²¹ Army Corps of Engineers Field Manual TM 5-818-7, 1985. Accessed November 2012 from: http://armypubs.army.mil/eng/DR_pubs/DR_a/pdf/tm5_818_7.pdf.

²² U.S. Department of Agriculture (USDA), 1991. Soil Conservation Service, Soil Survey of San Mateo County, Eastern Part, and San Francisco County, California. Issued May 1991.

soils, typically comprised of deep, well-drained loams or clay loams that are most prevalent in the western foothills; 2) the Botella complex soils that are generally composed of deep or very deep, well drained clay loams, and predominantly found in the central part of the EA Study Area; and 3) and Urban land-Orthents, very deep, poorly drained, texturally heterogeneous soils that have been used for fill in a (proportionally) smaller area along the Baylands edge.

The USDA county-wide soil survey notwithstanding, the shrink-swell potential at a given project within the EA Study Area may often be highly site-specific, requiring careful geotechnical investigation prior to project design and construction. For example, soils on the northeastern Baylands edge, as in the vicinity of the Facebook East and West Campus Project, are known to be clay-rich and poorly drained, and are likely to possess high shrink-swell potential.²³ Elsewhere in the EA Study Area, soil test data in the USDA's Web Soil Survey (a nationwide data repository) shows soil plasticity index values of 10 to 12 percent, suggesting low to moderate shrink-swell potential at those locations.²⁴

5. Mineral Resources

As noted in the Initial Study prepared for the Plan Components, which has been included as Appendix A of this EA, no areas within the EA Study Area have been identified by the California Geological Survey as a viable source of aggregate or other construction-related mineral resources.²⁵

C. Standards of Significance

The Plan Components would have a significant impact with regard to geology, soils, and seismicity if they would:

1. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

²³ City of Menlo Park, 2011. Facebook Campus Project Draft EIR, dated December 2011, prepared by Atkins, Inc.

²⁴ U.S. Department of Agriculture (USDA), Natural Resources Conservation Center, Web Soil Survey, 2013. <http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm> last accessed February 15, 2013.

²⁵ California Geological Survey (CGS), OFR 96-03, 1996. *Update of Mineral Land Classification: Aggregate Materials in the South San Francisco Bay Production-Consumption Region*. Kohler-Antablin, Susan.

- “ Surface rupture along an active fault, including those faults identified on recent Alquist-Priolo Earthquake Fault Zoning Maps issued by the State Geologist, or active faults identified through other means (i.e. site-specific geotechnical studies, etc.).
 - “ Strong seismic ground shaking.
 - “ Seismic-related ground failure, including liquefaction.
 - “ Landslides, mudslides, or other similar hazards.
2. Result in substantial soil erosion or the loss of topsoil.
 3. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on-or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse.
 4. Be located on expansive soil, as defined in Section 1803.5.3 of the California Building Code (2010), creating substantial risks to life or property.

D. Impact Discussion

1. **Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving surface 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 landslides; mudslides; or other similar hazards.**

There are no Alquist-Priolo Earthquake Fault Zones that have been mapped within the EA Study Area and the potential for ground rupture is therefore considered low for any potential future housing in the EA Study Area. However, in the event of a large, M 6.7 or greater seismic event, much of the EA Study Area is projected to experience “strong” to “very strong” ground shaking, with the most intense shaking forecast for the northeastern part of the EA Study Area.²⁶ Similarly, certain northeastern parts of the EA Study Area, particularly those areas underlain by Bay Muds, are judged to have a very high potential for seismically-induced liquefaction. Based on a USGS geologic map of the area, none of the five housing appear to lie atop

²⁶ California Seismic Safety Commission (CSSC), California Geological Survey (CGS), California Emergency Management Agency (CalEMA), and United States Geological Survey (USGS), *Earthquake Shaking Potential for the San Francisco Bay Region*, 2003, <http://quake.abag.ca.gov/shaking/>, accessed on January 11, 2013.

Bay Muds. Potential housing Site 5 (Haven Avenue) is located on artificial fill that lies adjacent to Bay Muds; considering this setting, this site may be at greater risk for liquefaction.²⁷

However, all future residential development would be subject to existing federal, State, and local regulations and the following amended General Plan policies and programs:

a. Amended General Plan Seismic Safety and Safety Element

- ◆ Policy S-1.3: Hazard Data and Standards. Integrate hazard data (geotechnical, flood, fire, etc.) and risk evaluations into the development review process and maintain, develop and adopt up-to-date standards to reduce the level of risk from natural and human-caused hazards for all land use.
- ◆ Program S-1.E: Modify the Zoning and Subdivision Ordinances as Needed to Address Hazard Mitigation. Modify the Zoning Ordinance as needed when new information on natural hazards becomes available and to provide for hazard reduction measures as a part of the design criteria for development review. Review the Subdivision Ordinance and modify as needed to include hazard reduction in the process of dividing land for development.
- ◆ Policy S-1.7: California Building Standards Code. Encourage the reduction of seismically vulnerable buildings and buildings susceptible to other hazards through enforcement of the California Building Standards Code and other programs.
- ◆ Program S-1.H: Enforce Seismic Risk Analysis and Adequate Construction Standards. Enforce seismic risk analysis and adequate construction standards through the building permit and inspection process.
- ◆ Policy S-1.13: Geotechnical Studies. Require site-specific geologic and geotechnical studies for land development or construction in areas of potential land instability as shown on the State and/or local geologic hazard maps or identified through other means.
- ◆ Policy S-1.14: Potential Land Instability. Prohibit development in areas of potential land instability identified on State and/or local geologic hazard maps, or identified through other means, unless a geologic investigation demonstrates hazards can be mitigated to an acceptable level as defined by the State of California.
- ◆ Policy S-1.5: New Habitable Structures. Require that all new habitable structures to incorporate adequate hazard mitigation measures to reduce identified risks from natural and human-caused hazards.

²⁷ United States Geological Survey (USGS), 2000. *Geologic Map and Map Database of the Palo Alto 30' X 60' Quadrangle, California*, E.E. Brabb, R.W. Graymer, and D.L. Jones.

- “ Program S-1.C: Review Building Code Updates. Continue to review State Building Code updates and incorporate local amendments as appropriate to require that new construction be designed under the most current safety standards. The review of updates should also consider requirements for facilities housing sensitive populations, such as seniors and persons living with disabilities.
- “ Program S-1.D: Require Early Investigation of Potential Hazard Conditions. 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 review process by persons of competent technical expertise.
- “ Goal S-1: Assure a Safe Community. Minimize risk to life and damage to the environment and property from natural and human-caused hazards, and assure community emergency preparedness and a high level of public safety services and facilities.
- “ Program S-1.B: Maintain Up-to-Date Hazard Maps and Databases. Maintain up-to-date databases and maps of geologic and other hazards to identify areas prone to hazards for planning purposes on an ongoing basis concurrently with the Housing Element Updates.
- “ Program S-1.A: Link the City’s Housing and Safety Elements. Continue to review and revise the Safety Element, as necessary, concurrently with updates to the General Plan Housing Element whenever substantial new data or evidence related to prevention of natural and human hazards become available.

Compliance with existing federal, State, and local regulations and the goals, policies and programs listed above would ensure that the impacts associated with seismic hazards are minimized to the maximum extent practicable. Consequently, overall, associated seismic hazards impacts would be *less than significant*.

2. Result in substantial soil erosion or the loss of topsoil.

Substantial soil erosion or loss of topsoil during construction could undermine structures and minor slopes, and this could be a concern of nearly all future housing under the Plan Components. However, compliance with existing regulatory requirements, such as implementation of erosion control measures as specified in the City of Menlo Park Engineering Division’s Grading and Drainage Control Guidelines, would reduce impacts from erosion and the loss of topsoil. Examples of these control measures include hydroseeding or short-term biodegradable erosion control blankets; vegetated swales, silt fences, or other inlet protection at storm drain inlets; post-construction inspection of drainage structures for accumulated sediment; and post-construction clearing of debris and sediment from these structures. Furthermore, the future housing permitted by the Plan Components would be concentrated on sites either developed and/or underutilized, and/or in close proximity to existing residential and residential-serving development, where development

would result in limited soil erosion or loss of topsoil. Therefore, adherence to existing regulatory requirements would ensure that impacts associated with substantial erosion and loss of topsoil during the future development of the housing sites would be *less than significant*.

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

Unstable geologic units are known to be present within the EA Study Area. The impacts of such unstable materials include, but may not be limited to subsidence in the diked baylands, where the underlying fill has been described as highly compressible. Such subsidence has been exacerbated by historical groundwater overdraft. Areas underlain by thick colluvium or poorly engineered fill as well as low-lying areas along the Bay margins may also be prone to subsidence. Of the five potential housing locations, Site 5 (Haven Avenue), which lies in the northeastern part of the EA Study Area atop mapped artificial fill, could be at greater risk for subsidence. As previously noted, Site 5 (Haven Avenue) and second units in the northeastern part of the EA Study Area may also be at greater risk for seismically-induced liquefaction. However, compliance with amended General Plan Policy S1.13, which requires site-specific geologic and geotechnical studies for land development or construction in areas of potential land instability as shown on the State and/or local geologic hazard maps or identified through other means, would reduce the potential impacts to future development from an unstable geologic unit or soil to a *less-than-significant* level.

4. Be located on expansive soil, as defined in Section 1803.5.3 of the California Building Code (2010), creating substantial risks to life or property.

As previously discussed, the pattern of expansive soils within the EA Study Area is such that expansive soils (denoted by soils with high linear extensibility and plasticity index) are most prevalent in the northeastern part of the EA Study Area, in the neighborhoods that lie closest to San Francisco Bay. Potential future housing Sites 2 and 3 (MidPen's Gateway Apartments), Site 4 (Hamilton Avenue), and Site 5 (Haven Avenue) and second units therefore may be at greatest risk to expansive soils. However, development of housing in this part of the EA Study Area would be subject to the CBC regulations and provisions, as adopted in Chapter 12.04 of the City's Municipal Code and enforced by the City during plan review prior to building permit issuance. The CBC contains specific requirements for seismic safety, excavation, foundations, retaining walls, and site demolition, and also regulates grading activities, including drainage and erosion control. Furthermore, requirements for geologic/geotechnical reports at development locations identified as "potential problem areas" are bolstered by various goals, programs, and policies within the Seismic Safety and Safety Element of the General Plan as listed under Section D.1 above. Thus, compliance with existing regula-

tions and policies would ensure impacts to the future development permitted under the Plan Components would be reduced to a *less-than-significant* level.

5. Cumulative Impacts

This section analyzes potential cumulative geological impacts that could arise from a combination of the development of the Plan Components together with the regional growth in the immediate vicinity of the EA Study Area.

Given the fact that active earthquake faults have not been mapped/identified with the EA Study Area, the risk of primary fault rupture on occupied buildings within the EA Study Area is judged low. In addition, new development in the EA Study Area would be subject to CBC requirements. Compliance with these building code requirements would, to the maximum extent practicable, reduce cumulative, development-related impacts that relate to seismically-induced ground-shaking, liquefaction, and expansive soils. Similarly, compliance with the amended General Plan goals, policies, and programs, and the City's Grading and Drainage Control Guidelines,²⁸ including implementation of various control measures, would minimize the cumulative impacts associated with soil erosion and loss of topsoil to the maximum extent practicable.

The cumulative impacts associated with development of the Plan Components, together with growth in the immediate vicinity of the EA Study Area, would result in a *less-than-significant* cumulative impact with respect to geology and soils.

E. Impacts and Mitigation Measures

The Plan Components, as currently envisioned, would not result in any significant impacts with respect to geology and soils. Therefore, no mitigation measures are necessary.

²⁸ City of Menlo Park, *Grading and Drainage Control Guidelines*, August 2010, http://www.menlopark.org/departments/pwk/grade_guide.pdf, accessed on January 9, 2013.

4.6 GREENHOUSE GAS EMISSIONS

This chapter evaluates the potential for land use changes within the Environmental Assessment (EA) Study Area associated with the adoption and implementation of the proposed Housing Element Update, General Plan Consistency Update, and the Zoning Code Amendment, together referred to as “the Plan Components” to cumulatively contribute to greenhouse gas (GHG) emissions impacts. Because individually no single project is large enough to result in a measurable increase in global concentrations of GHG emissions, global warming impacts of a project are considered on a cumulative basis.

The analysis in this section is based on the Association of Bay Area Governments (ABAG) population and employment projections anticipated within the City and the City’s Sphere of Influence (SOI) (i.e. the EA Study Area) at the General Plan 2035 horizon year, which includes growth accommodated by the future development (see Chapter 4.11, Population and Employment). The transportation sector is based on vehicle miles traveled (VMT) provided by TJKM Transportation Consultants, as modeled using the City/County Association of Governments of San Mateo County (C/CAG) model run by the Santa Clara Valley Transportation Authority (VTA) for the City of Menlo Park.

The section also evaluates consistency of the Plan Components with the strategies outlined in the California Air Resources Board’s (CARB) Scoping Plan in accordance with the GHG reduction goals of Assembly Bill 32 (AB 32), and strategies proposed by the Metropolitan Transportation Commission (MTC) to reduce VMT in the region, in accordance with Senate Bill 375 (SB 375).

A. Environmental Setting

1. Greenhouse Gases and Climate Change

Scientists have concluded that human activities are contributing to global climate change by adding large amounts of heat-trapping gases, known as GHG, to the atmosphere. The primary source of these GHG is fossil fuel use. The Intergovernmental Panel on Climate Change (IPCC) has identified four major GHG—water vapor, carbon dioxide (CO₂), methane (CH₄), and ozone (O₃)—that are the likely cause of an increase in global average temperatures observed within the 20th and 21st centuries. Other GHG identified by the IPCC that contribute to global warming to a lesser extent include nitrous oxide (N₂O), sulfur hexafluoride (SF₆), hydrofluorocarbons, perfluorocarbons, and chlorofluorocarbons.¹² The major GHG are briefly de-

¹ Intergovernmental Panel on Climate Change (IPCC), 2001. Third Assessment Report: Climate Change 2001. New York: Cambridge University Press.

scribed below. Table 4.6-1 lists the GHG applicable to the Plan Components and their relative global warming potentials (GWP) compared to CO₂.

- “ **Carbon dioxide** (CO₂) enters the atmosphere through the burning of fossil fuels (oil, natural gas, and coal), solid waste, trees and wood products, and respiration, and also as a result of other chemical reactions (e.g. manufacture of cement). Carbon dioxide is removed from the atmosphere (sequestered) when it is absorbed by plants as part of the biological carbon cycle.
- “ **Methane** (CH₄) is emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from livestock and other agricultural practices and from the decay of organic waste in municipal landfills and water treatment facilities.
- “ **Nitrous oxide** (N₂O) is emitted during agricultural and industrial activities as well as during combustion of fossil fuels and solid waste.
- “ **Fluorinated gases** are synthetic, strong GHGs that are emitted from a variety of industrial processes. Fluorinated gases are sometimes used as substitutes for ozone-depleting substances. These gases are typically emitted in smaller quantities, but because they are potent GHGs, they are sometimes referred to as High GWP gases.
- “ **Chlorofluorocarbons** (CFCs) are GHGs covered under the 1987 Montreal Protocol and used for refrigeration, air conditioning, packaging, insulation, solvents, or aerosol propellants. Since they are not destroyed in the lower atmosphere (troposphere, stratosphere), CFCs drift into the upper atmosphere where, given suitable conditions, they break down ozone. These gases are also ozone-depleting gases and are therefore being replaced by other compounds that are GHGs covered under the Kyoto Protocol.
- “ **Perfluorocarbons** (PFCs) are a group of human-made chemicals composed of carbon and fluorine only. These chemicals (predominantly perfluoromethane [CF₄] and perfluoroethane [C₂F₆]) were introduced as alternatives, along with HFCs, to the ozone-depleting substances. In addition, PFCs are emitted as by-products of industrial processes and are also used in manufacturing. PFCs do not harm the stratospheric ozone layer, but they have a high global warming potential.
- “ **Sulfur Hexafluoride** (SF₆) is a colorless gas soluble in alcohol and ether, slightly soluble in water. SF₆ is a strong GHG used primarily in electrical transmission and distribution systems as an insulator.

² Water vapor (H₂O) is the strongest GHG and the most variable in its phases (vapor, cloud droplets, ice crystals). However, water vapor is not considered a pollutant.

TABLE 4.6-1 GREENHOUSE GASES AND THEIR RELATIVE GLOBAL WARMING POTENTIAL COMPARED TO CO₂

GHGs	Atmospheric Lifetime (Years)	Global Warming Potential Relative to CO ₂ ^a
Carbon Dioxide (CO ₂)	50 to 200	1
Methane (CH ₄) ^b	12 (± 3)	21
Nitrous Oxide (N ₂ O)	120	310

^a Based on 100-Year Time Horizon of the Global Warming Potential (GWP) of the air pollutant relative to CO₂. Intergovernmental Panel on Climate Change (IPCC). 2001. Third Assessment Report: Climate Change 2001. New York: Cambridge University Press.

^b The methane GWP includes the direct effects and those indirect effects due to the production of tropospheric ozone and stratospheric water vapor. The indirect effect due to the production of CO₂ is not included.

- “ *Hydrochlorofluorocarbons (HCFCs)* contain hydrogen, fluorine, chlorine, and carbon atoms. Although ozone-depleting substances, they are less potent at destroying stratospheric ozone than CFCs. They have been introduced as temporary replacements for CFCs and are also GHGs.
- “ *Hydrofluorocarbons (HFCs)* contain only hydrogen, fluorine, and carbon atoms. They were introduced as alternatives to ozone-depleting substances to serve many industrial, commercial, and personal needs. HFCs are emitted as by-products of industrial processes and are also used in manufacturing. They do not significantly deplete the stratospheric ozone layer, but they are strong GHGs.^{3,4,5}

2. California’s Greenhouse Gas Sources and Relative Contribution

California is the second largest emitter of GHG in the United States, only surpassed by Texas, and the tenth largest GHG emitter in the world.⁶ However, California also has over 12 million more people than the state of Texas. Because of more stringent air emission regulations, in 2001 California ranked fourth lowest

³ United States Environmental Protection Agency (USEPA), 2012. Greenhouse Gas Emissions. <http://www.epa.gov/climatechange/emissions/index.html>.

⁴ Intergovernmental Panel on Climate Change (IPCC), 2001. Third Assessment Report: Climate Change 2001. New York: Cambridge University Press.

⁵ Intergovernmental Panel on Climate Change (IPCC), 2007. Fourth Assessment Report: Climate Change 2007. New York: Cambridge University Press.

⁶ California Energy Commission (CEC), 2005. Climate Change Emissions Estimates from Bemis, Gerry and Jennifer Allen, Inventory of California Greenhouse Gas Emissions and Sinks: 1990 to 2002 Update. California Energy Commission Staff Paper CEC-600-2005-025. Sacramento, California.

in carbon emissions per capita and fifth lowest among states in CO₂ emissions from fossil fuel consumption per unit of Gross State Product (total economic output of goods and services).⁷

CARB's latest update to the statewide GHG emissions inventory was conducted in 2012 for year 2009 emissions.⁸ In 2009, California produced 457 million metric tons of CO₂-equivalent (MMTCO₂e) GHG emissions. California's transportation sector is the single largest generator of GHG emissions, producing 37.9 percent of the State's total emissions. Electricity consumption is the second largest source, comprising 22.7 percent. Industrial activities are California's third largest source of GHG emissions, comprising 17.8 percent of the state's total emissions. Other major sectors of GHG emissions include commercial and residential, recycling and waste, high global warming potential GHGs, agriculture, and forestry.^{9,10}

3. Human Influence on GHG Emissions

For approximately 1,000 years before the Industrial Revolution, the amount of GHGs in the atmosphere remained relatively constant. During the 20th century, however, scientists observed a rapid change in the climate change pollutants that are attributable to human activities. The amount of CO₂ has increased by more than 35 percent since preindustrial times and has increased at an average rate of 1.4 parts per million (ppm) per year since 1960, mainly due to combustion of fossil fuels and deforestation.¹¹ These recent changes in atmospheric pollutants far exceed the extremes of the ice ages, and the global mean temperature is warming at a rate that cannot be explained by natural causes alone. Human activities are directly altering the chemical composition of the atmosphere through the buildup of atmospheric pollutants.¹²

⁷ California Energy Commission (CEC), 2006. Inventory of California Greenhouse Gas Emissions and Sinks 1990 to 2004. Report CEC-600-2006-013-SF.

⁸ Methodology for determining the statewide GHG inventory is not the same as the methodology used to determine statewide GHG emissions under Assembly Bill 32 (AB 32) (2006).

⁹ CO₂-equivalence is used to show the relative potential that different GHGs have to retain infrared radiation in the atmosphere and contribute to the greenhouse effect. The global warming potential of a GHG is also dependent on the lifetime, or persistence, of the gas molecule in the atmosphere.

¹⁰ California Air Resources Board (CARB), 2012l. California Greenhouse Gas Inventory for 2000–2009. By Category as Defined by the Scoping Plan.

¹¹ Intergovernmental Panel on Climate Change (IPCC), 2007. Fourth Assessment Report: Climate Change 2007. New York: Cambridge University Press.

¹² California Climate Action Team (CAT), 2006. Climate Action Team Report to Governor Schwarzenegger and the Legislature.

Climate-change scenarios are affected by varying degrees of uncertainty. IPCC's 2007 IPCC Fourth Assessment Report projects that the global mean temperature increase from 1990 to 2100, under different climate-change scenarios, will range from 1.4 to 5.8 degrees Celsius (°C) (2.5 to 10.4 degrees Fahrenheit (°F)). In the past, gradual changes in the earth's temperature changed the distribution of species, availability of water, etc. However, human activities are accelerating this process so that environmental impacts associated with GHGs no longer occur in a geologic timeframe but within a human lifetime.¹³

4. Potential Climate Change Impacts for California

Like the variability in the projections of the expected increase in global surface temperatures, the environmental consequences of gradual changes in the Earth's temperature are also hard to predict. In California and western North America, observations of the climate have shown: 1) a trend toward warmer winter and spring temperatures, 2) a smaller fraction of precipitation is falling as snow, 3) a decrease in the amount of spring snow accumulation in the lower and middle elevation mountain zones, 4) an advance snowmelt of 5 to 30 days earlier in the springs, and 5) a similar shift (5 to 30 days earlier) in the timing of spring flower blooms.¹⁴ According to the California Climate Action Team (CAT), even if actions could be taken to immediately curtail GHG emissions, the potency of emissions that have already built up, their long atmospheric lifetimes (see Table 4.6-1), and the inertia of the Earth's climate system could produce as much as 0.6°C (1.1°F) of additional warming. Consequently, some impacts from climate change are now considered unavoidable. GHG emission risks to California are shown in Table 4.6-2 and include public health impacts, water resources impacts, agricultural impacts, coastal sea level impacts, forest and biological resource impacts, and energy impacts. Specific GHG emission impacts that could affect the Plan Components include health impacts from a reduction in air quality, water resources impacts from a reduction in water supply, and increased energy demand.

¹³ Intergovernmental Panel on Climate Change (IPCC), 2007. Fourth Assessment Report: Climate Change 2007. New York: Cambridge University Press.

¹⁴ California Climate Action Team (CAT), 2006. Climate Action Team Report to Governor Schwarzenegger and the Legislature.

TABLE 4.6-2 SUMMARY OF GHG EMISSION RISKS TO CALIFORNIA

Impact Category	Potential Risk
Public Health Impacts	Poor air quality made worse More severe heat
Water Resources Impacts	Decreasing Sierra Nevada snow pack Challenges in securing adequate water supply Potential reduction in hydropower Loss of winter recreation
Agricultural Impacts	Increasing temperature Increasing threats from pests and pathogens Expanded ranges of agricultural weeds Declining productivity Irregular blooms and harvests
Coastal Sea Level Impacts	Accelerated sea level rise Increasing coastal floods Shrinking beaches Worsened impacts on infrastructure
Forest and Biological Resource Impacts	Increased risk and severity of wildfires Lengthening of the wildfire season Movement of forest areas Conversion of forest to grassland Declining forest productivity Increasing threats from pest and pathogens Shifting vegetation and species distribution Altered timing of migration and mating habits Loss of sensitive or slow-moving species
Energy Demand Impacts	Potential reduction in hydropower Increased energy demand

Sources: California Energy Commission (CEC), 2006. Our Changing Climate, Assessing the Risks to California, 2006 Biennial Report, California Climate Change Center, CEC-500-2006-077; California Energy Commission (CEC), 2008. The Future Is Now, An Update on Climate Change Science, Impacts, and Response Options for California, CEC-500-2008-0077.

B. Regulatory Framework

1. Federal Laws and Regulations

The U.S. Environmental Protection Agency (EPA) announced on December 7, 2009, that GHG emissions threaten the public health and welfare of the American people and that GHG emissions from on-road vehicles contribute to that threat. The U.S. EPA's final findings respond to the 2007 U.S. Supreme Court decision that GHG emissions fit within the Clean Air Act definition of air pollutants. The findings do not in and of themselves impose any emission reduction requirements, but allow the EPA to finalize the GHG standards proposed in 2009 for new light-duty vehicles as part of the joint rulemaking with the Department of Transportation.¹⁵

The U.S. EPA's endangerment finding covers emissions of six key GHGs—CO₂, CH₄, N₂O, hydrofluorocarbons, perfluorocarbons, and SF₆—that have been the subject of scrutiny and intense analysis for decades by scientists in the U.S. and around the world (the first three are applicable to the Plan Components).

In response to the endangerment finding, the U.S. EPA issued the Mandatory Reporting of GHG Rule that requires substantial emitters of GHG emissions (large stationary sources, etc.) to report GHG emissions data. Facilities that emit 25,000 metric tons (MTCO₂e) or more per year are required to submit an annual report.

2. State Laws and Regulations

a. AB 32, the Global Warming Solutions Act

Current State of California guidance and goals for reductions in GHG emissions are generally embodied in AB 32, the Global Warming Solutions Act, and Executive Order S-03-05.

AB 32 was passed by the California state legislature on August 31, 2006, to place the state on a course toward reducing its contribution of GHG emissions. AB 32 follows the 2020 tier of emissions reduction targets established in Executive Order S-3-05, signed June 1, 2005. Executive Order S-03-05 set the following GHG reduction targets for the State:

¹⁵ United States Environmental Protection Agency (EPA), 2009. EPA: Greenhouse Gases Threaten Public Health and the Environment. Science overwhelmingly shows greenhouse gas concentrations at unprecedented levels due to human activity. December. <http://yosemite.epa.gov/opa/admpress.nsf/7ebdf4d0b217978b852573590040443a/08d11a451131bca585257685005bf2521OpenDocument>, accessed on September 27, 2012.

- “ 2000 levels by 2010
- “ 1990 levels by 2020
- “ 80 percent below 1990 levels by 2050

AB 32 directed CARB to adopt discrete early action measures to reduce GHG emissions and outline additional reduction measures to meet the 2020 target. Based on the GHG emissions inventory conducted for the Scoping Plan by CARB, GHG emissions in California by 2020 are anticipated to be approximately 596 MMTCO_{2e}. In December 2007, CARB approved a 2020 emissions limit of 427 MMTCO_{2e} (471 million tons) for the State. The 2020 target requires a total emissions reduction of 169 MMTCO_{2e}, 28.5 percent from the projected emissions of the business-as-usual (BAU) scenario for the year 2020 (i.e. 28.5 percent of 596 MMTCO_{2e}).^{16,17}

Since release of the 2008 Scoping Plan, CARB has updated the statewide GHG emissions inventory to reflect GHG emissions in light of the economic downturn and measures not previously considered within the 2008 Scoping Plan baseline inventory. The updated forecast predicts emissions to be 507 MMTCO_{2e} by 2020. The new inventory identifies that an estimated 80 MMTCO_{2e} of reductions are necessary to achieve the statewide emissions reduction of AB 32 by 2020, 15.7 percent of the projected emissions compared to BAU in year 2020 (i.e. 15.7 percent of 507 MMTCO_{2e}).¹⁸

In order to effectively implement the emissions cap, AB 32 directed CARB to establish a mandatory reporting system to track and monitor GHG emissions levels for large stationary sources that generate more than 25,000 MTCO_{2e} per year, prepare a plan demonstrating how the 2020 deadline can be met, and develop appropriate regulations and programs to implement the plan by 2012. The Climate Action Registry Reporting Online Tool was established through the Climate Action Registry to track GHG emissions. The final Scoping Plan was adopted by CARB on December 11, 2008. Key elements of CARB’s GHG reduction plan that may be applicable to the Plan Components include:

¹⁶ California Air Resources Board (CARB), 2008. Climate Change Scoping Plan, a Framework for Change.

¹⁷ CARB defines BAU in its Scoping Plan as emissions levels that would occur if California continued to grow and add new GHG emissions but did not adopt any measures to reduce emissions. Projections for each emission-generating sector were compiled and used to estimate emissions for 2020 based on 2002–2004 emissions intensities. Under CARB’s definition of BAU, new growth is assumed to have the same carbon intensities as was typical from 2002 through 2004.

¹⁸ California Air Resources Board (CARB), 2012. Status of Scoping Plan Recommended Measures. http://www.arb.ca.gov/cc/scopingplan/status_of_scoping_plan_measures.pdf.

- “ Expanding and strengthening existing energy efficiency programs as well as building and appliance standards (adopted and cycle updates in progress);
- “ Achieving a mix of 33 percent for energy generation from renewable sources (anticipated by 2020);
- “ A California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system for large stationary sources (adopted 2011);
- “ Establishing targets for transportation-related GHG emissions for regions throughout California, and pursuing policies and incentives to achieve those targets (several Sustainable Communities Strategies have been adopted);
- “ Adopting and implementing measures pursuant to State laws and policies, including California’s clean car standards (amendments to the Pavley Standards adopted 2009; Advanced Clean Car standard adopted 2012), goods movement measures, and the Low Carbon Fuel Standard (LCFS)(adopted 2009);¹⁹
- “ Creating target fees, including a public goods charge on water use, fees on high global warming potential gases, and a fee to fund the administrative costs of the state’s long-term commitment to AB 32 implementation (in progress).

While local government operations were not accounted for in achieving the 2020 emissions reduction, CARB estimates that land use changes implemented by local governments that integrate jobs, housing, and services result in a reduction of 5 MMTCO₂e, which is approximately 3 percent of the 2020 GHG emissions reduction goal. In recognition of the critical role local governments play in the successful implementation of AB 32, CARB is recommending GHG reduction goals of 15 percent of today’s levels by 2020 to ensure that municipal and community-wide emissions match the State’s reduction target.²⁰ Pursuant to the Scoping Plan Appendix C, “The Role of Local Government,” and Table C, local governments are encouraged to

¹⁹ On December 29, 2011, the U.S. District Court for the Eastern District of California issued several rulings in the federal lawsuits challenging the LCFS. One of the court’s rulings preliminarily enjoins the CARB from enforcing the regulation during the pendency of the litigation. In January 2012, CARB appealed the decision and on April 23, 2012, the Ninth Circuit Court granted CARB’s motion for a stay of the injunction while it continues to consider CARB’s appeal of the lower court’s decision.

²⁰ While the Scoping Plan references a goal for local governments to reduce community GHG emissions by 15 percent from current (interpreted as 2008) levels by 2020, the Scoping Plan does not rely on local GHG reduction targets established by local governments to meet the State’s GHG reduction target of AB 32. Table 5.6-3 lists the recommended reduction measures, which do not include additional reductions from local measures.

take a number of potential actions to reduce local GHG emissions, which include shifts in land use patterns to emphasize compact, low-impact growth over development in greenfields, resulting in fewer VMT.²¹

Since the Scoping Plan was adopted, CARB implemented and continues to implement reduction measures. The legislature has also passed legislation implementing the reduction measures. For example, the cap-and-trade regulations became effective January 2, 2012, and the compliance obligation for GHG emissions begins on January 1, 2013. The legislature also passed Senate Bill X1-2 (SBX1-2) in 2011, increasing the amount of electricity generated from eligible renewable energy resources to at least 33 percent per year by December 31, 2020.

b. Energy Conservation Standards

Energy conservation standards for new residential and non-residential buildings were adopted by the California Energy Resources Conservation and Development Commission in June 1977 and most recently revised in 2008 (Title 24, Part 6, of the California Code of Regulations [CCR]).²² Title 24 requires the design of building shells and building components to conserve energy. The standards are updated periodically to allow for consideration and possible incorporation of new energy efficiency technologies and methods. On May 31, 2012, the CEC adopted the 2013 Building and Energy Efficiency Standards, which go into effect on January 1, 2014. Buildings that are constructed in accordance with the 2013 Building and Energy Efficiency Standards are 25 percent (residential) to 30 percent (non-residential) more energy efficient than the 2008 standards as a result of better windows, insulation, lighting, ventilation systems, and other features that reduce energy consumption in homes and businesses.

The 2006 Appliance Efficiency Regulations (Title 20, CCR Sections 1601 through 1608) were adopted by the California Energy Commission on October 11, 2006, and approved by the California Office of Administrative Law on December 14, 2006. The regulations include standards for both federally regulated appliances and non-federally regulated appliances. While these regulations are now often viewed as “business-as-usual,” they exceed the standards imposed by all other states and they reduce GHG emissions by reducing energy demand.

On July 17, 2008, the California Building Standards Commission adopted the nation’s first green building standards. The California Green Building Standards Code (proposed Part 11, Title 24) was adopted as part

²¹ California Air Resources Board (CARB), 2008. *Climate Change Scoping Plan, a Framework for Change*.

²² Although new building energy efficiency standards were adopted in April 2008, these standards did not go into effect until 2009.

of the California Building Standards Code (Title 24, California Code of Regulations). The green building standards that became mandatory in the 2010 edition of the code established voluntary standards on planning and design for sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and internal air contaminants. The mandatory provisions of the California Green Building Code Standards became effective January 1, 2011.

c. Renewable Power Requirements

A major component of California's Renewable Energy Program is the renewable portfolio standard (RPS), established under Senate Bills 1078 (Sher) and 107 (Simitian). Under the RPS, certain retail sellers of electricity were required to increase the amount of renewable energy each year by at least 1 percent in order to reach at least 20 percent by December 30, 2010. CARB has now approved an even higher goal of 33 percent by 2020. In 2011, the state legislature adopted this higher standard in SBX1-2. Renewable sources of electricity include wind, small hydropower, solar, geothermal, biomass, and biogas. The increase in renewable sources for electricity production will decrease indirect GHG emissions from development projects because electricity production from renewable sources is generally considered carbon neutral.

d. Vehicle Emission Standards/Improved Fuel Economy

California vehicle GHG emission standards were enacted under AB 1493 (Pavley I) and the Low Carbon Fuel Standards. Pavley I is a clean-car standard that reduces GHG emissions from new passenger vehicles (light-duty auto to medium-duty vehicles) from 2009 through 2016 and is anticipated to reduce GHG emissions from new passenger vehicles by 30 percent in 2016. California implements the Pavley I standards through a waiver granted to California by the EPA.²³ In 2012, the EPA issued a Final Rulemaking that sets even more stringent fuel economy and GHG emissions standards for model year 2017 through 2025 light-duty vehicles. The LCFS requires a reduction of 2.5 percent in the carbon intensity of California's transportation fuels by 2015 and a reduction of at least 10 percent by 2020.

3. Regulation of GHG Emissions on a Regional Level

In 2008, Senate Bill 375 (SB 375), the Sustainable Communities and Climate Protection Act, was adopted to connect the GHG emissions reductions targets established in the Scoping Plan for the transportation sector to local land use decisions that affect travel behavior. Its intent is to reduce GHG emissions from light-duty trucks and automobiles (excludes emissions associated with goods movement) by aligning regional long-range transportation plans, investments, and housing allocations to local land use planning to reduce VMT

²³ California's Pavley I fuel economy and GHG emissions standards for light-duty vehicle standards are more efficient than those adopted by the EPA in 2010 for model years 2012 through 2016.

and vehicle trips. Specifically, SB 375 required CARB to establish GHG emissions reduction targets for each of the 17 regions in California managed by a metropolitan planning organization (MPO). MTC is the MPO for the nine-county San Francisco Bay Area region. MTC's targets are a 7 percent per capita reduction from 2005 by 2020, and 15 percent per capita reduction from 2005 by 2035.²⁴

a. Plan Bay Area, Strategy for a Sustainable Region

MTC's Draft Plan Bay Area is the Bay Area region's Regional Transportation Plan (RTP)/Sustainable Community Strategy (SCS). The Draft Plan Bay Area was released on March 21, 2013 and is anticipated to be adopted by June 2013. The SCS sets forth a development pattern for the region, which, when integrated with the transportation network and other transportation measures and policies, would reduce GHG emissions from transportation (excluding goods movement) beyond the per capita reduction targets identified by CARB. According to Plan Bay Area, the Plan meets a 16 percent per capita reduction of GHG emissions by 2035 and a 10 percent per capita reduction by 2020 from 2005 conditions.

In 2008, MTC and ABAG initiated a regional effort (FOCUS) to link local planned development with regional land use and transportation planning objectives. Through this initiative, local governments identified Priority Development Areas (PDAs) and Priority Conservation Areas (PCAs). PDAs and PCAs form the implementing framework for Plan Bay Area.

- “ PDAs are transit-oriented, infill development opportunity areas within existing communities that are expected to host the majority of future development.
- “ PCAs are regionally significant open spaces for which there exists broad consensus for long-term protection but nearer-term development pressure.

Overall, well over two-thirds of all regional growth by 2040 is allocated within PDAs. PDAs are expected to accommodate 80 percent (or over 525,570 units) of new housing and 66 percent (or 744,230) of new jobs.²⁵

²⁴ California Air Resources Board (CARB), 2010. *Staff Report Proposed Regional Greenhouse Gas Emission Reduction Targets for Automobiles and Light Trucks Pursuant to Senate Bill 375*. August.

²⁵ Metropolitan Transportation Commission (MTC) and Association of Bay Area Governments (ABAG). 2013, March. Draft Plan Bay Area, Strategy for a Sustainable Region.

The following potential PDA in Menlo Park identified in Plan Bay Area:

- El Camino Real Corridor and Downtown PDA.²⁶

Per the One Bay Area Grant (OBAG) requirements, Congestion Management Agencies (CMAs) will develop a PDA Investment and Growth Strategy for their respective counties; this will be used to guide future transportation investments that are supportive of PDA-focused development.

4. Local Regulations and Policies

The City maintains several environmental programs under the City's Public Works Department. The City's environmental programs promote sustainable environmental practices and policies Citywide and within City-owned facilities and open space areas. The City has an approved Climate Action Plan (CAP) to reduce municipal and community GHG emissions. The most recent CAP is the City's 2011 CAP Assessment Report, which is described in more detail below.

The City's Public Works Department is also responsible for developing a more functional and efficient roadway network for the effective movement of people and goods. The division promotes the use of public transit, ride sharing, bicycles, and walking as commuting alternatives to single-occupant automobiles. The City operates a trip reduction program and was the first City on the Peninsula to establish a shuttle program. The City manages two Caltrain shuttles bus routes, the Willow and Marsh shuttles, which operate during the AM and PM peak hours taking passengers from Caltrain to their workplaces, schools, shopping, or appointments. According to C/CAG's Congestion Management Program (CMP), the Willow and Marsh bus routes carried 51,000 passengers in 2010. The City also manages a Midday shuttle service, a community service route open to the general public but focusing on the senior community. In 2010, the midday shuttle carried 29,000 passengers. For residents who do not live within an easy walking distance of a SamTrans stop or the Midday shuttle service stop, Menlo Park offers a twice weekly shopper's shuttle service that picks up passengers at their homes and provides rides to specific shopping areas.²⁷

²⁶ Association of Bay Area Governments, 2012, *Jobs-Housing Connection Strategy: Visions for Priority Development Areas*, http://www.onebayarea.org/pdf/JHCS/PDA_Narratives.pdf, pages 36 and 37, accessed on October 29, 2012.

²⁷ City/County Association of Governments of San Mateo (C/CAG), 2011. Final San Mateo County Congestion Management Program (CMP), http://www.ccag.ca.gov/pdf/Studies/Final%202011%20CMP_Nov11.pdf.

a. City of Menlo Park Climate Action Plan²⁸

The City has prepared and updated its community-wide GHG emissions inventory several times since the release of the City's *2005 Greenhouse Gas Emissions Analysis*, which was prepared by the City with assistance from ICLEI in 2007. In 2009, the City prepared and approved the City's *Climate Change Action Plan*. The 2009 CAP included GHG emissions inventories and strategies to reduce GHG emissions within the City. The latest update to the City's Climate Change Action Plan was conducted in 2011, *Climate Action Plan Assessment Report*. The 2011 CAP replaces the strategies identified within the 2009 Report. The 2011 *Climate Action Plan Assessment Report* recommends implementing the community GHG reduction strategies under the categories of energy efficiency, transportation, and other.²⁹

C. Existing Conditions

In 2012, the EA Study Area had 36,740 people and 33,960 employees. The existing, 2012, community-wide GHG emissions inventory generated by land uses within the City is summarized in Table 4.6-3.

D. Standards of Significance

1. CEQA Appendix G Thresholds

According to the CEQA Appendix G thresholds, the Plan Components would have a significant GHG emissions impact if it would:

1. Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.
2. Conflict with an applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of GHGs.

²⁸ City of Menlo Park, 2011. *Climate Action Plan Assessment Report*, http://www.menlopark.org/departments/env/Menlo_CAP_Assessment_Report_2010_12_14_draft_final_final6.pdf, accessed on September 27, 2012.

²⁹ City of Menlo Park, 2011. *Climate Action Plan Assessment Report*, http://www.menlopark.org/departments/env/Menlo_CAP_Assessment_Report_2010_12_14_draft_final_final6.pdf, accessed on September 27, 2012.

TABLE 4.6-3 2012 COMMUNITY-WIDE GHG EMISSIONS INVENTORY FOR THE EA STUDY AREA

Pollutant	2012, Existing Community-Wide Emissions (MTCO _{2e} /Year)	
	MTCO _{2e}	Percent
Transportation ^a	331,010	55%
Energy – Residential ^b	72,293	12%
Energy – Non-Residential ^b	177,349	29%
Waste ^c	6,808	1%
Water/Wastewater ^d	3,187	1%
Other – Off-Road Equipment ^e	16,606	3%
Total Community Emissions	607,253	100%
MTCO _{2e} /Service Population (SP) ^f	8.6	NA
Marsh Road Landfill	28,350	NA
Total Community Emissions with Marsh Road Landfill	635,603	NA
MTCO _{2e} /Service Population (SP) with Marsh Road Landfill	9.0	NA

Notes: The Community GHG Total excludes waste-in-place emissions from the closed Marsh Road Landfill. While they are included in the City's Climate Action Plan, the Marsh Road Landfill emissions are not associated with the existing or future land uses in the City of Menlo Park (but past disposal from within and outside of the City), and are therefore excluded for the purpose of this environmental assessment (e.g. not associated with the Plan Components' land uses). The City's Community GHG Inventory with emissions from the Marsh Hill Landfill are provided for informational purposes only. Emissions may not total to 100% due to rounding.

^a Transportation. VMT is based on data provided by TJKM using the C/CAG model run by VTA and modeled using EMFAC2011 and 2012 emission rates.^{30,31} The VMT provided by VTA is adjusted based on the Population and Employment used in the C/CAG model compared to the population and employment estimated identified within the EA Study Area for 2012, assuming the same VMT per capita. Adjusted daily VMT multiplied by 347 days/year to account for reduced traffic on weekends and holidays. This assumption is consistent with the California Air Resources Board's (CARB) methodology within the Climate Change Scoping Plan Measure Documentation Supplement.

³⁰ TJKM Transportation Consultants, January 14, 2013, Administrative Draft Report, Traffic Study of updated Housing Element in the City of Menlo Park.

³¹ California Air Resources Board (CARB), 2011. EMFAC2011.

TABLE 4.6-3 2012 COMMUNITY-WIDE GHG EMISSIONS INVENTORY FOR THE EA STUDY AREA (CONT.)

Notes (Continued):

^b Energy. Based on three-year average (2010-2008) of energy use provided by PG&E.³² The non-residential sector includes City facilities, direct access customers, county facilities, and other district facilities within the City boundaries. PG&E energy based on PG&E's carbon intensity. Direct access energy based on the eGrid carbon intensity.

^c Water/Wastewater. Includes fugitive emissions from wastewater processing and energy associated with water/wastewater treatment and conveyance. Water use is estimated based on demand rates included in the WSA for the Housing Element Update and target per capita SBx7-7 for MPMWD of 210 gpcd. Assumes wastewater is 45 percent of total water use.

^d Waste. Based on the WARM2012 and waste generation identified for Menlo Park by CalRecycle. Waste generation emissions are based on waste commitment method. Assumes 75 percent of fugitive GHG emissions are captured within the landfill's Landfill Gas Capture System with a landfill gas capture efficiency of 75 percent. The Landfill gas capture efficiency is based on the CARB's Local Government Operations Protocol, Version 1.1.

^e Other – Off-road Emissions. Generated using OFFROAD2007. Landscaping and light commercial equipment and estimated based on population (Landscaping) and employment (Light Commercial Equipment) for Menlo Park as a percentage of San Mateo County.^{33,34} Excludes BAAQMD permitted sources. Does not include emissions from wood-burning fireplaces.

^d Construction equipment use estimated based on housing permit data for Menlo Park from the ABAG.^{35,36} Daily off-road construction emissions multiplied by 347 days/year to account for reduced/limited construction activity on weekends and holidays. Excludes fugitive emissions from construction sites.

^f Based on a service population of 70,700 people (36,740 residents and 33,960 employees).

³² Pacific Gas & Electric Company (PG&E), 2012. Communitywide GHG Inventory Report for Menlo Park 2005 to 2010. Provided by John Joseph.

³³ California Air Resources Board (CARB), 2007. OFFROAD2007 Computer Model, Version 2.0.1.2.

³⁴ Association of Bay Area Governments (ABAG), 2009. Subregional Study Area Population, Housing, Employment Forecasts.

³⁵ California Air Resources Board (CARB), 2007. OFFROAD2007 Computer Model, Version 2.0.1.2.

³⁶ Association of Bay Area Governments (ABAG), 2010. San Francisco Bay Area Housing Data. http://www.abag.ca.gov/pdfs/2009_Housing_Data.pdf.

2. BAAQMD Plan-Level Thresholds³⁷

The BAAQMD adopted CEQA Guidelines in June 2010, which were revised in May 2011.³⁸ The Guidelines include methodology and thresholds for Plan-Level and Project-Level GHG analyses. The Plan Components qualify as a Plan-Level project under BAAQMD's criteria.

a. General Plan-Level GHG Criteria

BAAQMD Guidelines include methodology and thresholds for GHG impacts for General Plan analyses that are consistent with the GHG reduction goals of AB 32. As such, the impact of a project is deemed less than significant if it:

- Complies with a qualified GHG emissions reduction strategy, or
- Results in emissions less than 6.6 MTCO_{2e} per service population, per year, where service population is the total number of employees and residents within the town.³⁹

³⁷ These Guidelines were revised again in 2012 after a Court ruling. On March 5, 2012, the court issued a ruling in *California Building Industry Association v. Bay Area Air Quality Management District* (Superior Court Case No. RG10548693). Pursuant to the ruling, the court found that the adoption of the BAAQMD's CEQA Guidelines is a "project" requiring CEQA review. No CEQA review was conducted for the CEQA Guidelines prior to their adoption. Therefore, the court set aside adoption of the BAAQMD CEQA Guidelines for determining the significance of air quality and greenhouse gas emissions. The court also ordered BAAQMD to take no further action to disseminate those standards before performing CEQA review related to issuing the standards. While adoption of the thresholds was set aside until an environmental evaluation is conducted, the BAAQMD's GHG significance criteria, as outlined in their CEQA Guidelines, are supported by extensive studies and analysis (see <http://www.baaqmd.gov/Divisions/Planning-and-Research/CEQA-GUIDELINES/Tools-and-Methodology.aspx>). Accordingly, pursuant to its discretion under CEQA Guidelines section 15064 (b) ("lead agencies may exercise their discretion on what criteria to use"), and the recent holding in *Citizen for Responsible Equitable Environmental Development v. City of Chula Vista* (2011) 197 Cal.App.4th 327, 335-336, ("[t]he determination of whether a project may have a significant effect on the environment calls for careful judgment on the part of the public agency involved, based to the extent possible on scientific and factual data."), the City has decided to apply the BAAQMD CEQA thresholds to the Plan Components.

³⁸ Bay Area Air Quality Management District (BAAQMD), 2011. California Environmental Quality Act Air Quality Guidelines, Appendix C: Sample Air Quality Setting.

³⁹ The efficiency target is based on the AB 32 goal and therefore is the 2020 target for the City. Based on the long-term GHG reduction target for 2050 extrapolated from Executive Order S-03-05, the 2035 target would be 4.0 MTCO_{2e} per service population for the City.

i. Consistency with a Qualified GHG Reduction Plan

BAAQMD, in accordance with the updated CEQA Guidelines, allows cities to tier off plans to mitigate the effects of GHG emissions on a city/town-level, consistent with AB 32 goals. An AB 32 consistency determination is considered equivalent to a qualified GHG reduction strategy, so long as it achieves one of the following GHG emissions reduction goals within its jurisdiction:

- Reduce emissions to 1990 GHG emission levels by 2020
- Reduce emissions 15 percent below 2008 or earlier emission levels by 2020
- Meet the plan efficiency threshold of 6.6 MTCO_{2e} per service population (SP) per year

The City of Menlo Park has prepared a Climate Action Plan. However, it is not considered a “qualified” GHG reduction plan for the purpose of this analysis. Pursuant to the CEQA Guidelines Section 15185.5, *Tiering and Streamlining the Analysis of Greenhouse Gas Emissions*, at a minimum a plan for the reduction of GHG emissions would need to include:

- a) *An inventory of GHG emissions from both existing and projected over a specified time period.* The City’s CAP includes an inventory for existing and 2020 conditions. However, the emissions inventory excludes emissions from water and wastewater use because the City’s Municipal Water District only serves one third of the community’s population. Data would be needed from Cal Water and West Bay Sanitary District in order to complete the inventory, and would delay the City’s annual reporting process. In addition, it would be difficult for the City to create policies and/or programs that would impact water users belonging to a private water company, which would negatively affect monitoring reduction efforts from actions taken by the City.
- b) *A target level, based on substantial evidence, below which the contribution to GHG emissions from activities covered by the plan would not be cumulatively considerable.* The City’s CAP includes various potential reduction targets to provide the groundwork for identifying a GHG reduction target for the City but does not commit the City to one target.
- c) *Identify and analyze the GHG emissions resulting from specific actions or categories within the geographic area.* As identified above, The City’s CAP does not include indirect emissions from water and wastewater use, which are a required part of the inventory under BAAQMD’s Guidelines.
- d) *Specify measures or a group of measures, including performance standards, that substantial evidence demonstrates, if implemented on a project-by-project basis, would collectively achieve the specified emissions level.* The City’s CAP includes a list of GHG reduction measures. However, individual and/or groups of measures have not been quantified that show reductions from the BAU scenario. In addition, a GHG reduction target for Menlo Park has not been identified.

e) *Be adopted in a public process following environmental review.* This was not conducted for the current CAP.

ii. Plan-Level GHG Significance Threshold

For general plan level analyses, BAAQMD CEQA Guidelines recommend that GHG emissions from direct and indirect community-wide emission sources be quantified for the baseline year, the year 2020, and the projected year of buildout. Direct sources of emissions include on-site combustion of energy such as natural gas used for heating and cooking, emissions from industrial processes, and fuel combustion from mobile sources. Indirect emissions are emissions produced off-site from energy production and water conveyance due to a project's energy use and water consumption. Biogenic CO₂ emissions are not included in the quantification of a project's GHG emissions because biogenic CO₂ is derived from living biomass (e.g. organic matter present in wood, paper, vegetable oils, animal fat, food, animal, and yard waste) as opposed to fossil fuels. Total emissions are then compared to the following targets:

- 2020 GHG target of 6.6 MTCO_{2e} per service population, per year
- 2035 GHG target of 4.0 MTCO_{2e} per service population, per year⁴⁰

iii. Project-Level GHG Significance Threshold

In the absence of an applicable qualified GHG reduction strategy, BAAQMD has adopted screening criteria and significance criteria for development projects that would be applicable for the Plan Components. If a project exceeds the GHG screening-level sizes (in BAAQMD's CEQA Guidelines), the Project would be required to conduct a full GHG analysis using the following BAAQMD's significance criteria:

- 1,100 MTCO_{2e} per year
- 4.6 MTCO_{2e} per service population⁴¹

BAAQMD does not have thresholds of significance for construction-related GHG emissions.

3. Methodology

The City's community-wide GHG emissions inventory for the Plan Components follows BAAQMD's GHG Plan Level Guidance⁴² and includes the following sectors:

⁴⁰ The efficiency target is based on the AB 32 goal and therefore is the 2020 target for the City. Based on the long-term GHG reduction target for 2050 extrapolated from Executive Order S-03-05, the 2035 target would be 4.0 MTCO_{2e} per service population for the City.

⁴¹ BAAQMD defines service population as residents and employees generated by the project.

Transportation: Transportation emissions forecasts were modeled using CARB's EMFAC2011.⁴³ Model runs were based on daily per capita VMT data provided by TJKM using the C/CAG model run by VTA using 2012, 2020, and 2035 emission rates.⁴⁴ Modeling was conducted for both a BAU scenario, which does not include GHG emissions reduction from the Pavley Fuel Efficiency Standard and LCFS and for the Adjusted BAU (ABAU) scenario, which includes these statewide regulations that were adopted for the purpose of reducing GHG emissions. Fleet mix for the City was also based on the passenger vehicle and truck VMT provided by TJKM using the C/CAG model run by VTA. The VMT provided in the model includes the full trip length for land uses in the City (origin-destination approach). The date was adjusted for per capita VMT identified in the model compared to the service population (population and employment) identified within the EA Study Area and does not include a 50 percent reduction in VMT for external-internal/internal-external trips. Adjusted daily VMT was multiplied by 347 days per year to account for reduced traffic on weekends and holidays to account for annual emissions. This assumption is consistent with CARB's methodology within the Climate Change Scoping Plan Measure Documentation Supplement.⁴⁵

Residential: Purchased electricity and natural gas use for residential land uses in the City were modeled using ICLEI's Clean Air and Climate Protection (CACP) software.⁴⁶ For energy use, ICLEI's CACP software identifies CO₂ emissions from energy sources. Off-model adjustments were made to the CACP output to account for methane and nitrous oxide emissions from these sources.⁴⁷ Residential energy use was provided by PG&E.⁴⁸ Per BAAQMD's Guidelines, residential natural gas and electricity use are based on a three-year average (2010, 2009, and 2008) to account for fluctuation in annual energy

⁴² Bay Area Air Quality Management District (BAAQMD), 2012. GHG Plan Level Guidance. <http://www.baaqmd.gov/~ /media/Files/Planning%20and%20Research/CEQA/GHG%20Quantification%20Guidance%20May%202012.ashx?la=en>

⁴³ California Air Resources Board (CARB), 2011. EMFAC2011.

⁴⁴ TJKM Transportation Consultants, 2013. Administrative Draft Report, Traffic Study of updated Housing Element in the City of Menlo Park.

⁴⁵ California Air Resources Board (CARB), 2008. Climate Change Proposed Scoping Plan, a Framework for Change.

⁴⁶ ICLEI – Local Governments for Sustainability (ICLEI), 2009. Clean Air and Climate Protection (CACP) Software, Version 3.0.

⁴⁷ California Air Resources Board (CARB), 2010. Local Government Operations Protocol (LGOP), Version 1.1.

⁴⁸ Pacific Gas & Electric Company (PG&E), 2012. Communitywide GHG Inventory Report for Menlo Park 2005 to 2010. Provided by John Joseph.

use as a result of natural variations in climate in the City.⁴⁹ Forecasts are adjusted for increases in population in the City. The carbon intensity of PG&E's purchased electricity is also adjusted off-model to account for the average carbon intensity of their electricity supply (2010, 2009, and 2008). The ABAU scenario for residential electricity use includes a reduction in carbon intensity of PG&E's energy supply identified by PG&E, which includes 33% Renewable Portfolio Standard (RPS), Cap-and-Trade, and other regulatory reductions for High GWP gases such as reductions of SF₆.⁵⁰

Non-Residential: PG&E. Purchased electricity and natural gas use for non-residential land uses in the City were modeled using ICLEI's CACP software. For energy use, ICLEI's CACP software identifies CO₂ emissions from energy sources. Off-model adjustments were made to the CACP output to account for methane and nitrous oxide emissions from these sources. Non-residential energy use was provided by PG&E and includes direct access energy.⁵¹ Per BAAQMD's Guidelines, non-residential natural gas and electricity use are based on a three-year average (2010, 2009, and 2008) to account for fluctuation in annual energy use as a result of natural variations in climate in the City.⁵² The carbon intensity of PG&E's purchased electricity is also adjusted off-model to account for the average carbon intensity of their electricity supply (2010, 2009, and 2008). The carbon intensity of direct access electricity is also adjusted off-model to account for the average carbon intensity of their electricity supply (2010, 2009, and 2008). Forecasts are adjusted for increases in employment in the City. The ABAU scenario for non-residential electricity use includes a reduction in carbon intensity of PG&E's energy supply identified by PG&E, which includes 33 percent RPS, Cap-and-Trade, and other regulatory reductions for High GWP gases such as reductions of SF₆.⁵³ The ABAU scenario for direct access electricity use

⁴⁹ Bay Area Air Quality Management District (BAAQMD), 2012. GHG Plan Level Guidance. <http://www.baaqmd.gov/~ /media/Files/Planning%20and%20Research/CEQA/GHG%20Quantification%20Guidance%20May%202012.ashx?la=en>.

⁵⁰ Pacific Gas & Electric Company (PG&E), 2011. Greenhouse Gas Emission Factors Info Sheet. http://www.pge.com/includes/docs/pdfs/shared/environment/calculator/pge_ghg_emission_factor_info_sheet.pdf.

⁵¹ Pacific Gas & Electric Company (PG&E), 2012. Communitywide GHG Inventory Report for Menlo Park 2005 to 2010. Provided by John Joseph.

⁵² Bay Area Air Quality Management District (BAAQMD), 2012. GHG Plan Level Guidance. <http://www.baaqmd.gov/~ /media/Files/Planning%20and%20Research/CEQA/GHG%20Quantification%20Guidance%20May%202012.ashx?la=en>.

⁵³ Pacific Gas & Electric Company (PG&E), 2011. Greenhouse Gas Emission Factors Info Sheet. http://www.pge.com/includes/docs/pdfs/shared/environment/calculator/pge_ghg_emission_factor_info_sheet.pdf

includes a reduction in carbon intensity of grid energy supply to account for a 33 percent RPS for grid electricity.

Water/Wastewater. The CACP software does not estimate emissions from water conveyance, treatment, distribution, and wastewater. GHG emissions from water and wastewater include indirect GHG emissions from the embodied energy of water and wastewater. Total water generation in the City is based on the 2010 residential and non-residential demand calculations in the Water Supply Assessment (WSA) (see Appendix D), which includes water use in the MPMWD and the Bear Gulch District of the California Water Company. Forecasts are adjusted for increases in population and employment and are based on the target per capita SBx7-7 for MPMWD of 210 gallons per capita per day (gpcd), which is calculated for only on the City's residential population. Consequently, the per capita rate in the WSA is adjusted for the percent of the allocation for residential and non-residential, which is calculated to be 130.2 gpcd per resident and 79.8 gpcd per employee. Wastewater is assumed to be 45 percent of total water use, which is based on information provided by the City from the wastewater treatment plant in the 2005 CAP.⁵⁴ Energy use from water use and wastewater treatment is estimated using energy rates identified by the CEC⁵⁵ and PG&E's carbon intensity of energy.⁵⁶ In addition to the indirect emissions associated with the embodied energy of water use and wastewater treatment, wastewater treatment also results in fugitive GHG emissions from wastewater processing. Fugitive emissions from wastewater treatment in the City were calculated using the emission factor's in CARB's Local Government Operations Protocol (LGOP), Version 1.1. Forecasts are adjusted for increases in population and employment in the City.

Waste Disposal. While ICLEI's CACP software includes the US EPA WARM model, since the 2009 CACP software was released, the WARM model was updated in February 2012 (WARM, version 12). Consequently, modeling of waste disposed of by residents and employees in the City is based on the waste commitment method using WARM, version 12, based on waste disposal (municipal solid waste

⁵⁴ City of Menlo Park, 2007. *2005 Greenhouse Gas Emissions Analysis*.

⁵⁵ California Energy Commission (CEC), 2006. December. *Refining Estimates of Water-Related Energy Use in California*. CEC-500-2006-118. Prepared by Navigant Consulting, Inc. Based on the electricity use for Northern California.

⁵⁶ Pacific Gas & Electric Company (PG&E), 2011. *Greenhouse Gas Emission Factors Info Sheet*. http://www.pge.com/includes/docs/pdfs/shared/environment/calculator/pge_ghg_emission_factor_info_sheet.pdf.

and alternative daily cover) and waste characterization data from CalRecycle.^{57,58} Because the landfill gas captured is not under the jurisdiction of Menlo Park, the landfill gas emissions from the capture system are not included in Menlo Park's inventory. Only fugitive sources of GHG emissions from landfill are included. Modeling assumes a 75 percent reduction in fugitive GHG emissions from the landfill's Landfill Gas Capture System. The Landfill gas capture efficiency is based on CARB's LGOP, Version 1.1. Forecasts are adjusted for increases in population and employment in the City.

Other – Off-Road Equipment. OFFROAD2007 was used to estimate GHG emissions from landscaping equipment, light commercial equipment, and construction equipment in the City.⁵⁹ OFFROAD2007 is a database of equipment use and associated emissions for each county compiled by CARB. Annual emissions were compiled using OFFROAD2007 for the County of San Mateo for year 2012. In order to proportion the percentage of emissions attributable to the City of Menlo Park, landscaping and light commercial equipment is estimated based on population (landscaping) and employment (light commercial equipment) for Menlo Park as a percentage of San Mateo County, while construction equipment use estimated based on housing permit data for Menlo Park from ABAG.^{60,61} Daily off-road construction emissions multiplied by 347 days per year to account for reduced/limited construction activity on weekends and holidays.⁶² Forecasts are adjusted for increases in population and employment in the City.

Marsh Road Landfill. The March Road Landfill is located within the corporate boundaries of Menlo Park but ceased operations in 1984. CO₂ emissions generated from waste-in-place (WIP) disposal at the

⁵⁷ California Department of Resources Recycling and Recovery (CalRecycle), 2009. California 2008 Statewide Waste Characterization Study.

⁵⁸ California Department of Resources Recycling and Recovery (CalRecycle), Disposal Reporting System, 2008. Menlo Park Jurisdiction Disposal By Facility with Reported Alternative Daily Cover (ADC) and Alternative Intermediate Cover (AIC). <http://www.calrecycle.ca.gov/LGCentral/Reports/DRS/Destination/JurDspFa.aspx>, accessed 2013.

⁵⁹ California Air Resources Board (CARB), 2007. OFFROAD2007 Computer Model, Version 2.0.1.2.

⁶⁰ Association of Bay Area Governments (ABAG), 2009. Subregional Study Area Population, Housing, Employment Forecasts.

⁶¹ Association of Bay Area Governments (ABAG), 2010. San Francisco Bay Area Housing Data. http://www.abag.ca.gov/pdfs/2009_Housing_Data.pdf.

⁶² California Air Resources Board (CARB), 2008. Climate Change Proposed Scoping Plan, a Framework for Change, Measure Documentation Supplement.

Marsh Hill Landfill are biogenic in nature and not included. Methane emissions from WIP are identified in the 2005 CAP. Landfill gas in 2005 was based on a landfill gas capture rate of 65.20 percent and 5 million metric tons of WIP. Per the 2005 CAP, in 2020 there will be less waste in place (4.7 million metric tons) and emissions would decrease 6 percent from baseline.⁶³ The methane rate was revised in the 2011 update to the CAP based on data available from Fortistar (operator). An approximation of total methane for 2005 and 2008 is based on the Bayfront Park Landfill Emissions Table on page 41 of the CAP Assessment Report. 2012 methane emissions are assumed to be the same as 2008, and 2020 and 2035 are forecasted based on the anticipated 6 percent decrease in WIP from 2008. Methane emissions are multiplied by its GWP.⁶⁴

Life cycle emissions are not included in this analysis because not enough information is available for the proposed project, and therefore life cycle GHG emissions would be speculative.⁶⁵

E. Impact Discussion

1. GHG Emissions (Appendix G Threshold 1)

The General Plan is a regulatory document that sets forth the framework for future growth and development. A General Plan does not directly result in development in and of itself. Before any development can occur in the City, all such development is required to be analyzed for conformance with the General Plan, zoning requirements, and other applicable local and state requirements; comply with the requirements of CEQA; and obtain all necessary clearances and permits.

⁶³ City of Menlo Park, 2007. *2005 Greenhouse Gas Emissions Analysis*.

⁶⁴ City of Menlo Park, 2011. *Climate Action Plan Assessment Report*, http://www.menlopark.org/departments/env/Menlo_CAP_Assessment_Report_2010_12_14_draft_final_final6.pdf, accessed on September 27, 2012.

⁶⁵ Life cycle emissions include indirect emissions associated with materials manufacture. However, these indirect emissions involve numerous parties, each of which is responsible for GHG emissions of their particular activity. The California Resources Agency, in adopting the CEQA Guidelines Amendments on GHG emissions found that lifecycle analyses was not warranted for project-specific CEQA analysis in most situations, for a variety of reasons, including lack of control over some sources, and the possibility of double-counting emissions (see Final Statement of Reasons for Regulatory Action, December 2009). Because the amount of materials consumed during the operation or construction of the proposed project is not known, the origin of the raw materials purchased is not known, and manufacturing information for those raw materials are also not known, calculation of life cycle emissions would be speculative. A life-cycle analysis is not warranted.

Development under the Plan Components would contribute to global climate change through direct and indirect emissions of GHG from transportation sources, energy (natural gas and purchased energy), water/wastewater use, waste generation, and other off-road equipment (e.g. landscape equipment, construction activities).

a. Community-wide GHG Emissions – 2020 AB 32 Target Year

BAAQMD has adopted a 2020 per capita GHG threshold for operation-related GHG emissions of 6.6 MTCO_{2e} per service population per year (MTCO_{2e}/Service Population/Year) for General Plans. The community-wide GHG BAU and Adjusted BAU (ABAU) emissions inventory for the City compared to existing conditions is included in Table 4.6-4. The ABAU inventory includes reductions from federal and state measures identified in CARB’s Scoping Plan, including the Pavley fuel efficiency standards, LCFS for fuel use (transportation and off-road), and a reduction in carbon intensity from electricity use (see the discussion of the inventory methodology). For 2020, the Scoping Plan measures account for a reduction of 153,260 MTCO_{2e} compared to BAU.

As shown in this table, community-wide GHG emissions in the EA Study Area at 2020 would meet the 6.6 MTCO_{2e} threshold, which is consistent with the GHG reduction target of AB 32. Impacts would be *less than significant* for short-term growth anticipated under the Plan Components.

b. Community-wide GHG Emissions – General Plan Horizon Year

BAAQMD has not adopted a 2035 per capita GHG threshold for operation-related GHG emissions. However, a 2035 efficiency target was derived for the Plan Components based on the long-term GHG reduction target for 2050 extrapolated from Executive Order S-03-05. The 2035 target would be 4.0 MTCO_{2e} per service population for the City. The community-wide GHG emissions inventory for the City compared to existing conditions is included in Table 4.6-5.

As shown in this table, in year 2035 community-wide GHG emissions would not achieve the proposed per capita efficiency threshold based on the long-term targets of Executive Order S-03-05. Therefore, GHG emissions are considered to be substantial enough to result in a *significant* impact relative to GHG emissions.

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TABLE 4.6-4 2020 COMMUNITY-WIDE GHG EMISSIONS INVENTORY FOR THE EA STUDY AREA

Pollutant	2020 Operational Emissions (MTCO _{2e} /Year)			
	2012 MTCO _{2e}	2020 BAU MTCO _{2e}	2020 ABAU MTCO _{2e}	Change from 2012 MTCO _{2e}
Transportation ^a	331,010	350,582	260,539	-70,471
Energy - Residential ^b	72,293	77,330	64,148	-8,145
Energy - Non-Residential ^b	177,349	186,503	139,754	-37,595
Waste ^c	6,808	7,242	7,242	434
Water/Wastewater ^d	3,187	3,411	1,883	-1,304
Other - Off-road Equipment ^e	16,606	17,585	15,826	-708
Total Community Emissions	607,253	642,652	489,392	-117,861
MTCO_{2e}/Service Population (SP)^f	8.3	8.5	6.5	NA
2020 Per Capita Threshold	NA	6.6 MTCO _{2e} /SP	6.6 MTCO _{2e} /SP	NA
Exceeds 2020 Per Capita Threshold	NA	Yes	No	NA
Marsh Road Landfill	28,350	26,649	26,649	-1,701
Total Community Emissions with Marsh Road Landfill	635,603	669,301	516,041	-119,562
MTCO _{2e} /SP with Marsh Road Landfill	9.0	8.9	6.9	NA

Notes: The Community GHG Total excludes waste-in-place emissions from the closed Marsh Road Landfill. While it is included in the City's Climate Action Plan, the Marsh Road Landfill emissions are not associated with the existing or future land uses in the City of Menlo Park (but past disposal from within and outside of the City), and are therefore excluded for the purpose of this environmental assessment (e.g. not associated with the Plan Components' land uses). The City's Community GHG Inventory with emissions from the Marsh Hill Landfill are provided for informational purposes only.

Emissions forecast based on changes in population (residential energy), employment (non-residential energy), or service population (city energy, waste, water/wastewater, transportation) Adjusted BAU includes reductions identified in the Scoping Plan associated with Transportation (Pavley+ LCFS), Energy & Water/Wastewater (improvements in the carbon intensity of electricity identified by PG&E), and Other (LCFS). The current inventory does not account for reductions in building energy use from Title 24 cycle updates. Emissions may not total to 100% due to rounding.

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TABLE 4.6-4 2020 COMMUNITY-WIDE GHG EMISSIONS INVENTORY FOR THE EA STUDY AREA (CONT.)

Notes (Continued):

^a Transportation. VMT is based on data provided by TJKM using the C/CAG model run by VTA and modeled using EMFAC2011 and 2020 emission rates.^{66,67} The VMT provided by VTA is adjusted based on the Population and Employment used in the C/CAG model compared to the population and employment estimated identified within the EA Study Area for 2020. Adjusted Daily VMT is multiplied by 347 days/year to account for reduced traffic on weekends and holidays. This assumption is consistent with the California Air Resources Board's (CARB) methodology within the Climate Change Scoping Plan Measure Documentation Supplement.

^b Energy. Based on a three-year average (2010 to 2008) of energy use provided by PG&E.⁶⁸ The non-residential sector includes direct access customers, county facilities, and other district facilities within the City boundaries. PG&E energy based on PG&E's carbon intensity. Direct access energy based on the eGrid carbon intensity.

^c Water/Wastewater. Includes fugitive emissions from wastewater processing and energy associated with water/wastewater treatment and conveyance. Water use is estimated based on demand rates included in the Water Supply Assessment for the Housing Element Update and assumes wastewater is 45 percent of total water use.

^d Waste. Based on the WARM2012 and waste generation identified for Menlo Park by CalRecycle. Waste generation emissions are based on waste commitment method.

^e Other – Off-Road Emissions. Generated using OFFROAD2007. Landscaping and light commercial equipment and estimated based on population (Landscaping) and employment (Light Commercial Equipment) for Menlo Park as a percentage of San Mateo County.^{69,70} Excludes BAAQMD permitted sources. Does not include emissions from wood-burning fireplaces.

^e Construction equipment use estimated based on housing permit data for Menlo Park from the ABAG.^{71,72} Daily off-road construction emissions multiplied by 347 days/year to account for reduced/limited construction activity on weekends and holidays. Excludes fugitive emissions from construction sites.

^f Based on a service population of 75,211 people (39,300 residents and 35,911 employees).

⁶⁶ TJKM Transportation Consultants, 2013. Administrative Draft Report, Traffic Study of updated Housing Element in the City of Menlo Park.

⁶⁷ California Air Resources Board (CARB), 2011. EMFAC2011.

⁶⁸ Pacific Gas & Electric Company (PG&E), 2012. Communitywide GHG Inventory Report for Menlo Park 2005 to 2010. Provided by John Joseph.

⁶⁹ California Air Resources Board (CARB), 2007. OFFROAD2007 Computer Model, Version 2.0.1.2.

⁷⁰ Association of Bay Area Governments (ABAG), 2009. Subregional Study Area Population, Housing, Employment Forecasts.

⁷¹ California Air Resources Board (CARB), 2007. OFFROAD2007 Computer Model, Version 2.0.1.2.

⁷² Association of Bay Area Governments (ABAG), 2010. San Francisco Bay Area Housing Data. http://www.abag.ca.gov/pdfs/2009_Housing_Data.pdf.

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TABLE 4.6-5 2035 COMMUNITY-WIDE GHG EMISSIONS INVENTORY FOR THE EA STUDY AREA

Pollutant	2035 Operational Emissions (MTCO _{2e} /Year)			Change from 2012 MTCO _{2e}
	2012 MTCO _{2e}	2035 BAU MTCO _{2e}	2035 ABAU MTCO _{2e}	
Transportation ^a	331,010	366,934	240,082	-90,918
Energy - Residential ^b	72,293	85,397	70,840	-1,453
Energy - Non-Residential ^b	177,349	205,506	153,994	23,355
Waste ^c	6,808	7,989	7,989	1,181
Water/Wastewater ^d	3,187	3,790	2,092	-1,095
Other - Off-road Equipment ^e	16,606	19,382	17,443	837
Total Community Emissions	607,253	688,998	492,451	-114,803
MTCO_{2e}/Service Population (SP)^f	8.6	8.3	5.9	NA
2035 Per Capita Threshold	NA	4.0 MTCO _{2e} /SP	4.0 MTCO _{2e} /SP	NA
Exceeds 2035 Per Capita Threshold	NA	Yes	Yes	NA
Marsh Road Landfill	28,350	26,649	26,649	-1,701
Total Community Emissions with Marsh Road Landfill	635,603	715,647	519,100	-116,504
MTCO _{2e} /SP with Marsh Road Landfill	8.9	8.5	6.1	NA

Notes: The Community GHG Total excludes waste-in-place emissions from the closed Marsh Road Landfill. While it is included in the City's Climate Action Plan, the Marsh Road Landfill emissions are not associated with the existing or future land uses in the City of Menlo Park (but past disposal from within and outside of the City), and are therefore excluded for the purpose of this environmental assessment (e.g. not associated with the Plan Components' land uses). The City's Community GHG Inventory with emissions from the Marsh Hill Landfill are provided for informational purposes only.

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AND ZONING ORDINANCE AMENDMENTS ENVIRONMENTAL ASSESSMENT
GREENHOUSE GAS EMISSIONS

TABLE 4.6-5 2035 COMMUNITY-WIDE GHG EMISSIONS INVENTORY FOR THE EA STUDY AREA (CONT.)

Notes (Continued):

Emissions forecast based on changes in population (residential energy), employment (non-residential energy), or service population (city energy, waste, water/wastewater, transportation).

Adjusted BAU includes reductions identified in the Scoping Plan associated with Transportation (Pavley+ LCFS), Energy & Water/Wastewater (improvements in the carbon intensity of electricity identified by PG&E), and Other (LCFS). The current inventory does not account for reductions in building energy use from Title 24 cycle updates.

Emissions may not total to 100% due to rounding.

^a Transportation. VMT is based on data provided by TJKM using the C/CAG model run by VTA and modeled using EMFAC2011 and 2035 emission rates.^{73, 74} The VMT provided by VTA is adjusted based on the Population and Employment used in the C/CAG model compared to the population and employment estimated identified within the EA Study Area for 2035. Adjusted Daily VMT is multiplied by 347 days/year to account for reduced traffic on weekends and holidays. This assumption is consistent with the California Air Resources Board's (CARB) methodology within the Climate Change Scoping Plan Measure Documentation Supplement.

^b Energy. Based on a three-year average (2010 to 2008) of energy use provided by PG&E.⁷⁵ The non-residential sector includes direct access customers, county facilities, and other district facilities within the City boundaries. PG&E energy based on PG&E's carbon intensity. Direct access energy based on the eGrid carbon intensity.

^c Water/Wastewater. Includes fugitive emissions from wastewater processing and energy associated with water/wastewater treatment and conveyance. Water use is estimated based on demand rates included in the Water Supply Assessment for the Housing Element Update and assumes wastewater is 45 percent of total water use.

^d Waste. Based on the WARM2012 and waste generation identified for Menlo Park by CalRecycle. Waste generation emissions are based on waste commitment method.

^e Other – Off-Road Emissions. Generated using OFFROAD2007. Landscaping and light commercial equipment and estimated based on population (Landscaping) and employment (Light Commercial Equipment) for Menlo Park as a percentage of San Mateo County.^{76, 77} Excludes BAAQMD permitted sources. Does not include emissions from wood-burning fireplaces. ^d Construction equipment use estimated based on housing permit data for Menlo Park from the Association of Bay Area Governments (ABAG).^{78, 79} Daily off-road construction emissions multiplied by 347 days/year to account for reduced/limited construction activity on weekends and holidays. Excludes fugitive emissions from construction sites.

^f Based on a service population of 82,970 people (43,400 residents and 39,570 employees).

⁷³ TJKM Transportation Consultants, 2013. Administrative Draft Report, Traffic Study of updated Housing Element in the City of Menlo Park.

⁷⁴ California Air Resources Board (CARB), 2011. EMFAC2011.

⁷⁵ Pacific Gas & Electric Company (PG&E), 2012. Communitywide GHG Inventory Report for Menlo Park 2005 to 2010. Provided by John Joseph.

⁷⁶ California Air Resources Board (CARB), 2007. OFFROAD2007 Computer Model, Version 2.0.1.2.

⁷⁷ Association of Bay Area Governments (ABAG), 2009. Subregional Study Area Population, Housing, Employment Forecasts.

⁷⁸ California Air Resources Board (CARB), 2007. OFFROAD2007 Computer Model, Version 2.0.1.2.

⁷⁹ Association of Bay Area Governments (ABAG), 2010. San Francisco Bay Area Housing Data. http://www.abag.ca.gov/pdfs/2009_Housing_Data.pdf.

c. Future Residential Development

BAAQMD has adopted a 2020 per capita GHG threshold for operation-related GHG emissions of 4.6 MTCO_{2e}/Service Population/Year for Project-Level analyses. While the potential future residential development associated with the five housing sites is part overall Plan Components, the community-wide GHG emissions inventory for the future housing is provided separately in Table 4.6-6 and compared to BAAQMD's Project-Level thresholds. This is based on the assumption that the buildout at maximum density shown in Table 3-2 in Chapter 3, Project Description, would occur, which is not foreseen under the Plan Components, but rather represents the most conservative scenario.

As shown in this table, GHG emissions generated by the future residential development has the potential to result in a substantial increase in GHG emission because they would not achieve the proposed per capita efficiency threshold (Project Level). Therefore, GHG emissions are considered to be substantial enough to result in a *significant* impact relative to GHG emissions.

2. Consistency with GHG Reduction Plans (Appendix G Threshold 2)

a. Statewide and Regional GHG Reduction Plans

In accordance with AB 32, CARB developed the Scoping Plan to outline the State's strategy to achieve 1990 level emissions by year 2020. To estimate the reductions necessary, CARB projected statewide 2020 BAU GHG emissions (i.e. GHG emissions in the absence of statewide emission reduction measures). CARB identified that the State as a whole would be required to reduce GHG emissions by 28.5 percent from year 2020 BAU to achieve the targets of AB 32.⁸⁰ The revised BAU 2020 forecast shows that the state would have to reduce GHG emissions by 21.6 percent from BAU without Pavley and the 33 percent RPS or 15.7 percent from the adjusted baseline (i.e. with Pavley and 33 percent RPS).⁸¹

⁸⁰ California Air Resources Board (CARB), 2008. Climate Change Scoping Plan, a Framework for Change.

⁸¹ California Air Resources Board (CARB), 2012. Status of Scoping Plan Recommended Measures. http://www.arb.ca.gov/cc/scopingplan/status_of_scoping_plan_measures.pdf.

TABLE 4.6-6 PLAN COMPONENTS CRITERIA AIR POLLUTANT EMISSIONS INVENTORY

Pollutant	2020 Operational Emissions	
	2020 BAU MTCO _{2e}	2020 ABAU MTCO _{2e}
Transportation ^a	16,495	12,259
Energy ^b	6,613	5,486
Water/Wastewater ^c	152	84
Waste ^d	324	324
Area Sources (Landscaping) ^e	65	58
Total	23,650	18,211
Total without Waste ^f	23,326	17,887
Service Population	3,361	3,361
MTCO _{2e} /Service Population (SP)	6.9	5.3
MTCO _{2e} /Service Population (SP) without Waste ^f	6.9	5.3
Project-Level Threshold	4.6 MTCO _{2e} /SP	4.6 MTCO _{2e} /SP
Exceeds Per Capita Threshold	Yes	Yes

Notes: 2020 Emission Rates. Estimate derived from the Community-wide GHG Inventory for the EA Study Area.

^a Transportation. VMT/Person is based on data provided by TJKM using the C/CAG model run by VTA and modeled using EM-FAC2011 and 2020 emission rates.^{82,83} Adjusted Daily VMT multiplied by 347 days/year to account for reduced traffic on weekends and holidays. This assumption is consistent with the CARB's methodology within the Climate Change Scoping Plan Measure Documentation Supplement.

^b Energy. Based on PG&E energy/person.⁸⁴

^c Water/Wastewater. Based on per capita (includes employees + residents) water/wastewater use for Menlo Park.

^d Waste. WARM2012 and CalRecycle. Based on per capita disposal rates.

^e Area Sources. Generated using OFFROAD2007 and estimated based on population (Landscaping) for Menlo Park as a percentage of San Mateo County.^{85,86}

^f Waste emissions are not included in the per capita emissions computation. BAAQMD did not include solid waste emissions when developing the per capita significance thresholds.

⁸² TJKM Transportation Consultants, 2013. Administrative Draft Report, Traffic Study of updated Housing Element in the City of Menlo Park

⁸³ California Air Resources Board (CARB), 2011. EMFAC2011.

⁸⁴ Pacific Gas & Electric Company (PG&E), 2012. Communitywide GHG Inventory Report for Menlo Park 2005 to 2010. Provided by John Joseph

⁸⁵ California Air Resources Board (CARB), 2007. OFFROAD2007 Computer Model, Version 2.0.1.2.

⁸⁶ Association of Bay Area Governments (ABAG), 2009. Subregional Study Area Population, Housing, Employment Forecasts.

MTC's Draft Plan Bay Area includes the El Camino Real Corridor and Downtown PDA in the City of Menlo Park. MTC anticipates a 36 percent increase in employment growth by 2040 within this PDA. MTC's plan identifies development of new mixed-use projects along El Camino Real close to transit. Growth accommodated by the Plan Components would be consistent with land use concept plan for Menlo Park identified in the Draft Plan Bay Area.

Statewide strategies to reduce GHG emissions include the Low Carbon Fuel Standard, California Appliance Energy Efficiency regulations; California Building Standards (i.e. CALGreen and the 2008 Building and Energy Efficiency Standards); California Renewable Energy Portfolio standard (33 percent RPS); changes in the corporate average fuel economy standards (e.g. Pavley I and Pavley II); and other measures that would ensure the State is on target to achieve the GHG emissions reduction goals of AB 32. Statewide GHG emissions reduction measures that are being implemented over the next seven years would reduce the City's GHG emissions. As shown in Table 4.6-4, the City would achieve the 2020 target of AB 32 for cities within the San Francisco Bay Area Air Basin (SFBAAB). New residential and non-residential construction in the City would achieve the current building and energy efficiency standards. The new buildings would be constructed in conformance with CALGreen, which requires high-efficiency water fixtures for indoor plumbing and water efficient irrigation systems. Therefore, impacts would be *less than significant*.

b. Local GHG Reduction Plans

The City of Menlo Park has prepared and updated its community-wide GHG emissions inventory several times since the release of the City's 2005 *Greenhouse Gas Emissions Analysis*, which was prepared by the City with assistance from ICLEI in 2007. The latest update to the City's Climate Change Action Plan was conducted in 2011, *Climate Action Plan Assessment Report*.⁸⁷ The policies identified in the 2011, *Climate Action Plan Assessment Report* represent the City's actions to achieve the GHG reduction targets of AB 32.

The Plan Components would include the following current and amended General Plan policies and programs. Consequently, with implementation and adoption of the Plan Components, impacts related to consistency with the City's CAP would be *less than significant*.

⁸⁷ City of Menlo Park, 2011. *Climate Action Plan Assessment Report*, http://www.menlopark.org/departments/env/Menlo_CAP_Assessment_Report_2010_12_14_draft_final_final6.pdf, accessed on September 27, 2012.

i. Amended General Plan Safety Element: Sea Level Rise

a) Sea Level Rise

- “ Policy S-1.28: Sea Level Rise. Consider sea level rise in siting new facilities or residences within potentially affected areas.

ii. Current General Plan Land Use and Circulation Element

a) Energy and Water

- “ 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-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.
- “ Policy I-A-3: Quality design and usable open space shall be encouraged in the design of all new residential developments.
- “ Policy I-H-2: Use of water-conserving plumbing fixtures in all new public and private development shall be required.
- “ Policy I-H-4: The efforts of the Bay Area Water Users Association to secure adequate water supplies for the Peninsula shall be supported to the extent that these efforts are in conformance with other City policies.
- “ Policy I-H-7: Use of reclaimed water for landscaping and any other feasible uses shall be encouraged.

iii. Amended General Plan Open Space and Conservation Element

a) Energy and Water

- “ Goal OSC-4: Promote Sustainability and Climate Action Planning. Promote a sustainable energy supply and implement City's Climate Action Plan to reduce greenhouse gas emissions and improve the sustainability of actions by City government, residents, and businesses in Menlo Park. This includes promoting land use patterns that reduce the number and length of motor vehicle trips, and promotion of recycling, reduction and reuse programs.

- “ Policy OSC-4.2: Sustainable Building. Promote and/or establish environmentally sustainable building practices or standards in new development that would conserve water and energy, prevent stormwater pollution, reduce landfilled waste, and reduce fossil fuel consumption from transportation and energy activities.
- “ Policy OSC-4.3: Renewable Energy. Promote the installation of renewable energy technology, such as, on residences and businesses through education, social marketing methods, establishing standards and/or providing incentives.
- “ Policy OSC-2.7: Conservation of Resources at City Facilities. Reduce consumption of water, energy, landfilled waste, and fossil fuels in the construction, operations and maintenance of City owned and/or operated facilities.
- “ Policy OSC-4.9: Climate Action Planning. Undertake annual review and updates, as needed, to the City’s Climate Action Plan (CAP).

iv. Current General Plan Land Use and Circulation Element

a) Transit (Rail and Bus Service)

- “ 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.
- “ Policy II-B-4: The capacity and attractiveness of the commuter railroad service should be increased and rights-of-ways for future transit service should be protected.
- “ Policy II-B-5: The City shall work with appropriate agencies to agree on long-term peninsula transit service that reflects Menlo Park’s desires and is not disruptive to the city.
- “ Policy II-B-6: The City shall support extension of CalTrain to the Market Street area in San Francisco.

b) Pedestrian and Bicycle Facilities

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

- “ Goal II-D: The City shall promote the safe use of bicycles as a commute alternative and for recreation.
 - “ Policy II-D-2: The City shall, within available funding, work to complete a system of bikeways within Menlo Park.
 - “ Policy II-D-3: The design of streets within Menlo Park shall consider the impact of street cross section, intersection geometries, 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.
 - “ Policy II-D-5: The City shall encourage transit providers within San Mateo County to provide improved bicycle access to transit including secure storage at transit stations and on-board storage where feasible.
 - “ Goal II-E: To promote walking as a commute alternative and for short trips.
 - “ Policy II-E-1: The City shall require all new development to incorporate safe and attractive pedestrian facilities on-site.
 - “ Policy II-E-2: The City shall endeavor to maintain safe sidewalks and walkways where existing within the public right of way.
 - “ Policy II-E-3: Appropriate traffic control shall be provided for pedestrians at intersections.
 - “ Policy II-E-4: 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-5: The City shall 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.
- v. *Amended General Plan Open Space and Conservation Element*
- a) *Commute Trip Reduction Programs*
 - “ Policy OSC-1.1: Landscaping and Plazas. Include landscaping and plazas on public and private lands, and well-designed pedestrian and bicycle facilities in areas of intensive non-vehicular activity. Require landscaping for shade, surface runoff, or to obscure parked cars in extensive parking areas.
 - “ Policy OSC-2.6: Pedestrian and Bicycle Paths. Develop pedestrian and bicycle paths consistent with the recommendations of local and regional trail and bicycle route projects, including the Bay Trail.

vi. Current General Plan Land Use and Circulation Element

a) Commute Trip Reduction Programs

- “ Policy II-C-1: The City shall work with all Menlo Park employers to encourage employees to use alternatives to the single occupant automobile in their commute to work.
- “ Policy II-C-5: The City shall identify potential funding sources, including the Bay Area Air Quality Management District, to supplement City and private monies to support transportation demand management activities of the City and local employers.
- “ Policy II-C-6: The City shall, to the degree feasible, assist Menlo Park employers in meeting the Average Vehicle Ridership (AVR) targets established by the Bay Area Air Quality Management District.
- “ Policy II-C-7: The commuter shuttle service between the industrial work centers and the Downtown Transportation Center should be maintained and improved, within fiscal constraints. The City shall encourage SamTrans and other agencies to provide funding to support shuttle services.

vii. Amended General Plan Open Space and Conservation Element

a) Land Use and Transportation

- “ Policy OSC-4.1: Sustainable Approach to Land Use Planning to Reduce Resource Consumption. Encourage, to the extent feasible, (1) a balance and match between jobs and housing, (2) higher density residential and mixed-use development to be located adjacent to commercial centers and transit corridors, and (3) retail and office areas to be located within walking and biking distance of transit or existing and proposed residential developments.
- “ Goal OSC-4: Promote Sustainability and Climate Action Planning. Promote a sustainable energy supply and implement City’s Climate Action Plan to reduce greenhouse gas emissions and improve the sustainability of actions by City government, residents, and businesses in Menlo Park. This includes promoting land use patterns that reduce the number and length of motor vehicle trips, and promotion of recycling, reduction and reuse programs.

viii. Current General Plan Land Use and Circulation Element

a) Land Use and Transportation

- “ Policy I-I-1: The City shall cooperate with the appropriate agencies to help assure a coordinated land use pattern in Menlo Park and the surrounding area.

- “ 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.
- “ Policy II-C-4: The City shall coordinate its transportation demand management efforts with other agencies providing similar services within San Mateo County.

b) School Programs

- “ Policy II-C-3 states the City will consider working with the school districts to encourage alternatives to single occupancy vehicle use, such as carpools and vanpools, for trips being generated by local schools.
- “ Policy II-E-6 states that the City shall prepare a safe school route program to enhance the safety of school children who walk to school.
- “ Program II-11 states that the City shall continue to develop a comprehensive safe school route program that documents current conditions, identifies design and standards deficiencies, and proposes an action plan detailing steps to implement the program.

ix. Amended General Plan Open Space and Conservation Element

a) Waste

- “ Goal OSC-4: Promote Sustainability and Climate Action Planning. Promote a sustainable energy supply and implement City's Climate Action Plan to reduce greenhouse gas emissions and improve the sustainability of actions by City government, residents, and businesses in Menlo Park. This includes promoting land use patterns that reduce the number and length of motor vehicle trips, and promotion of recycling, reduction and reuse programs.
- “ Policy OSC-4.7: Waste Management Collaboration. Continue to support and participate in efforts such as the South Bayside Waste Management Authority, which provides waste reduction, recycling, and solid waste programs and solutions.
- “ Policy OSC-4.6: Waste Reduction Target. Strive to meet the California State Integrated Waste Management Board per person target of waste generation per person per day through their source reduction, reuse, and recycling programs.

x. *Current General Plan Land Use and Circulation Element*

a) Waste

- “ Policy I-H-1 states that the community design should help conserve resources and minimize waste.

3. Cumulative Impacts

As described above, GHG emissions related to the ongoing activities in the EA Study Area and the Plan Components are not confined to a particular air basin but are dispersed worldwide. The global increase in GHG emissions that has occurred and will occur in the future is the result of the actions and choices of individuals, businesses, local governments, states, and nations. Therefore, the analysis in Section E.1, Impact Discussion, addresses cumulative impacts.

F. Impacts and Mitigation Measures

Impact GHG-1: Ongoing activities in the City would conflict with Executive Order S-03-05’s goal to reduce GHG emissions by 80 percent below 1990 levels by 2050. The majority of the reductions needed to reach the 2050 target will likely come from State measures (e.g. additional vehicle emissions standards), but the City does not have authority over such measures. The State has not identified plans to reduce emissions beyond 2020. As stated above, implementation of the Plan Components would reduce community-wide GHG emissions and all feasible measures have been included. No additional mitigating policies are available, and the impact is considered *significant and unavoidable*.

Impact GHG-2: The future residential development would conflict with Executive Order S-03-05’s goal to reduce GHG emissions by 80 percent below 1990 levels by 2050. The Plan Components do not consist of one or more actual development projects involving the physical construction of dwelling units, but rather provides policies and implementing programs under which new housing development would be allowed. Accordingly, new residential development in the EA Study Area, it would be subject to the policies identified in the General Plan, which would reduce community-wide GHG emissions. However, as with the community-wide GHG emissions discussed under Impact GHG-1, no additional mitigating policies are available and the impact is considered *significant and unavoidable*.

4.7 HAZARDS AND HAZARDOUS MATERIALS

This chapter discusses existing conditions in the EA Study Area and potential impacts of future development that could occur by adopting and implementing the proposed Housing Element Update, General Plan Consistency Update, and associated Zoning Ordinances amendments, together referred to as the “Plan Components,” related to hazardous materials, airport hazards, emergency response plans, and wildland fires.

A. Regulatory Framework

This section summarizes key State and local regulations and programs related to hazardous materials.

1. Federal Laws and Regulations

The following federal agencies oversee hazards and hazardous materials concerns.

a. Environmental Protection Agency

The United States Environmental Protection Agency’s (U.S. EPA) laws and regulations ensure the safe production, handling, disposal, and transportation of hazardous materials.

b. United States Department of Transportation

Transportation of chemicals and hazardous materials are governed by the United States Department of Transportation (DOT), which stipulates the types of containers, labeling, and other restrictions to be used in the movement of such material on interstate highways.

c. Occupational Safety and Health Administration

The Occupational Safety and Health Administration (OSHA) oversees administration the Occupational Safety and Health Act, which requires: specific training for hazardous materials handlers; provision of information to employees who may be exposed to hazardous materials; and acquisition of material safety data sheets (MSDS) from materials manufacturers. Material safety data sheets describe the risks, as well as proper handling and procedures related to particular hazardous materials. Employee training must include response and remediation procedures for hazardous materials releases and exposures.

2. State Laws and Regulations

a. California Health and Safety Code and Code of Regulations

California Health and Safety Code Chapter 6.95 and 19 California Code of Regulations (CCR) Section 2729 set out the minimum requirements for business emergency plans and chemical inventory reporting. These regulations require businesses to provide emergency response plans and procedures, training program in-

formation, and a hazardous material chemical inventory disclosing hazardous materials stored, used, or handled on site. A business which uses hazardous materials or a mixture containing hazardous materials must establish and implement a business plan if the hazardous material is handled in certain quantities.

b. California Environmental Protection Agency

One of the primary agencies that regulates hazardous materials is the California Environmental Protection Agency (CalEPA), which is authorized by the EPA to enforce and implement federal hazardous materials laws and regulations. The Department of Toxic Substance Control (DTSC), a department of the CalEPA, protects California and Californians from exposure to hazardous waste, primarily under the authority of the federal Resource Conservation Recovery Act (RCRA) of 1976 and the California Health and Safety Code.¹ DTSC requirements include the need for written programs and response plans, such as Hazardous Materials Business Plans (HMBPs). DTSC programs include dealing with aftermath clean-ups of improper hazardous waste management, evaluation of samples taken from sites, enforcement of regulations regarding use, storage and disposal of hazardous materials, and encouragement of pollution prevention.

c. California Division of Occupational Safety and Health

Like OSHA at the federal level, the California Division of Occupational Safety and Health (CalOSHA) is the responsible state-level agency for ensuring workplace safety. The CalOSHA assumes primary responsibility for the adoption and enforcement of standards regarding workplace safety and safety practices. In the event that a site is contaminated, a Site Safety Plan must be crafted and implemented to protect the safety of workers. Site Safety Plans establish policies, practices, and procedures to prevent the exposure of workers and members of the public to hazardous materials originating from the contaminated site or building.

d. California Building Code

The State of California provides a minimum standard for building design through the 2010 California Building Code (CBC), which is located in Part 2 of Title 24 of the California Code of Regulations (CCR). The 2010 CBC is based on the 1997 Uniform Building Code, but has been modified for California conditions. It is generally adopted on a jurisdiction-by-jurisdiction basis, subject to further modification based on local conditions. Commercial and residential buildings are plan-checked by local city and county building officials for compliance with the CBC. Typical fire safety requirements of the CBC include: the installation of sprinklers in all high-rise buildings; the establishment of fire resistance standards for fire doors, building ma-

¹ Department of Toxic Substances Control, website, http://www.dtsc.ca.gov/InformationResources/DTSC_Overview.cfm#Overview_of_DTSC, accessed on September 25, 2012.

terials, and particular types of construction; and the clearance of debris and vegetation within a prescribed distance from occupied structures in wildfire hazard areas.

e. California Fire Code (2010)

The CCR, Title 24, also known as the California Building Standards Code, contains the California Fire Code (CFC), included as Part 9 of that title. Updated every three years, the CFC includes provisions and standards for emergency planning and preparedness, fire service features, fire protection systems, hazardous materials, fire flow requirements, and fire hydrant locations and distribution.

f. California Department of Transportation

The California Department of Transportation (Caltrans) manages more than 50,000 miles of California's highway and freeway lanes, provides inter-city rail services, permits more than 400 public-use airports and special-use hospital heliports and works with local agencies. Caltrans is also the first responder for hazardous material spills and releases that occur on those highway and freeway lanes and inter-city rail services.

g. State Water Resources Control Board

The State Water Resources Control Board (SWRCB), through its regional boards, regulates discharge of potentially hazardous materials to waterways and aquifers and administers basin plans for groundwater resources in various regions of the State. The SWRCB provides oversight for sites at which the quality of groundwater or surface waters is threatened, and has the authority to require investigations and remedial actions. The San Francisco Bay Regional Quality Water Quality Control Board is the regional board that has jurisdiction within the EA Study Area.

3. Materials-Specific Programs and Regulations

a. Asbestos-Containing Materials (ACM) Regulations

State-level agencies, in conjunction with the U.S. EPA and OSHA, regulate removal, abatement, and transport procedures for asbestos-containing materials. Releases of asbestos from industrial, demolition, or construction activities are prohibited by these regulations and medical evaluation and monitoring is required for employees performing activities that could expose them to asbestos. Additionally, the regulations include warnings that must be heeded and practices that must be followed to reduce the risk for asbestos emissions and exposure. Finally, federal, State, and local agencies must be notified prior to the onset of demolition or construction activities with the potential to release asbestos.

b. Polychlorinated Biphenyls (PCBs)

The U.S. EPA prohibited the use of PCBs in the majority new electrical equipment starting in 1979, and initiated a phase-out for much of the existing PCB-containing equipment. The inclusion of PCBs in electrical equipment and the handling of those PCBs are regulated by the provisions of the Toxic Substances Control Act, 15 U.S.C. Section 2601 et seq. (TSCA). Relevant regulations include labeling and periodic inspection requirements for certain types of PCB-containing equipment and outline highly specific safety procedures for their disposal. The State of California likewise regulates PCB-laden electrical equipment and materials contaminated above a certain threshold as hazardous waste; these regulations require that such materials be treated, transported, and disposed accordingly. At lower concentrations for non-liquids, regional water quality control boards may exercise discretion over the classification of such wastes.

c. Lead-based Paint (LBP)

Cal OSHA's Lead in Construction Standard is contained in Title 8, Section 1532.1 of the California Code of Regulations. The regulations address all of the following areas: permissible exposure limits (PELs); exposure assessment; compliance methods; respiratory protection; protective clothing and equipment; housekeeping; medical surveillance; medical removal protection (MRP); employee information, training, and certification; signage; record keeping; monitoring; and agency notification.

4. Local Regulations and Policies

a. Menlo Park Emergency Operation Plan

The City of Menlo Park adopted an Emergency Operation Plan (EOP) in 2011. The City developed the EOP to better prepare for responses to emergency situations that could result from natural disasters and technological incidents. To prepare for these emergencies, the City estimated the potential risks associated with earthquakes, flooding, wildland fire, and other disasters. Based on this evaluation, the various preparation strategies were developed. These strategies are addressed in Volume 2 of the EOP as follows: Chapter 1 introduces the City's Emergency Management System and four emergency management phases, as well as required activities and responsible parties for each phase; Chapter 2 describes regulatory frameworks and relevant legal authorities; Chapter 3 provides a threat assessment including estimated potential risks associated with various natural and man-made disasters; and Chapter 4 provides a recovery plan, including damage assessments and disaster assistance programs.

i. Menlo Park Fire District Fire Prevention Code

The Menlo Park Fire Protection District (MPFPD) has adopted a Fire Prevention Code to regulate permit processes, emergency access, hazardous material handling, and fire protection systems, including automatic

sprinkler systems, fire extinguishers, and fire alarms. The Fire District adopted the 2006 edition of the IFC by reference and incorporated it into the District Fire Prevention Code, pursuant to the Fire Protection District Act of 1987 in 2007.² Additionally, under Ordinance 35-2012, the Fire District adopted the 2010 CFC by reference, amended the District Fire Prevention Code, and updated its Fee Schedule on July 17, 2012.³ Section 903 of the District Fire Prevention Code requires automatic sprinkler systems in new buildings if the new building has a total floor area of 5,000 square feet or more, if the building is four or more stories in height, or if the building has a height of 40 feet or more. The automatic sprinkler systems are also required in existing buildings where the cost of the improvements made to the building exceeds 50 percent of the assessed valuation of the structure. New construction or improvements are subject to the Fire District's plan review and approval.

b. Airport Land Use Compatibility Plans

The EA Study Area is located approximately 2 miles from Palo Alto Airport, but no portions of the City are within the airport land use compatibility zones established by the Palo Alto Airport Comprehensive Land Use Plan.⁴ Furthermore, the EA Study Area is located more than 2 miles from the San Carlos Airport to the north and Moffett Federal Airfield to the south.⁵

c. Applications Involving Hazardous Materials

The City of Menlo Park has a process for reviewing the use of hazardous materials by a business.⁶ The City coordinates its review process with the Menlo Park Fire Protection District (MPFPD), the County of San Mateo Environmental Health Services Division, applicable sanitary districts, and the City of Menlo Park Building Division.

² Menlo Park Fire Protection District, *Ordinance 30 & District Standards*, September 5, 2007, <http://www.menlofire.org/fireprevention/forms/Ordinance%2030.pdf>, accessed September 27, 2012.

³ Menlo Park Fire Protection District, *Ordinance 30 & District Standards*, September 5, 2007, <http://www.menlofire.org/fireprevention/forms/Ordinance%2035-2012.pdf>, accessed September 27, 2012.

⁴ Santa Clara County Airport Land Use Commission, 2008. Palo Alto Airport Comprehensive Land Use Plan, page 3-15, <http://www.sccgov.org/sites/planning/Plans%20-%20Programs/Airport%20Land-Use%20Commission/Documents/PAO-adopted-11-19-08-CLUP.pdf>, accessed on September 6, 2012.

⁵ City/County Governments Association of San Mateo County, 2004. Revised Airport Influence Area Boundary, <http://www.ccag.ca.gov/pdf/documents/archive/sc%20airport%20influence%20a%26b.pdf>, accessed August 23, 2012.

⁶ City of Menlo Park – Community Development Department, Planning Division, *Hazardous Materials Applications Guidelines*, updated January 2011.

The City requires approval of a use permit for the use of hazardous materials. All applicants must contact the MPFPD and describe the type and amount of hazardous materials they will have on-site at the start of their operations. The MPFPD has established threshold levels based on the CFC permit quantities threshold. The MPFPD uses their established threshold to define the maximum amount of hazardous materials that would be allowed before a use permit is required.

A “finding” included with Planning Commission approvals for a use permit will state that the City Building Official, MPFPD, San Mateo County Environmental Health, and any applicable sanitary districts have reviewed the application and that any conditions recommended by these entities are included in the approval. These conditions will be explicitly stated in the approval.

The MPFPD's visits to users could reveal situations where the type or volume of materials has changed enough to warrant rehearing of a Planning Commission approval.⁷ Inspections by the County Environmental Health Department could reveal similar situations. The applicant is responsible for dealing directly with the County Environmental Health Department if there are any revisions to the Hazardous Materials Business Plan (HMBP) and notifying the City of any changes from its approved use permit.

d. County of San Mateo Health Services Agency

i. *County of San Mateo Environmental Health Division*

The County's Environmental Health Division provides services to ensure a safe and healthy environment in San Mateo County through education, monitoring, and enforcement of regulatory programs and services for the community. Their services include restaurant and housing inspection, household hazardous waste and medical waste disposal, water protection and water quality monitoring, pollution prevention, and other regulatory activities and services. The County's Health Division conducts inspections, surveillances, or monitoring, or other purposes to protect the present and future public health and safety and the environment as provided in Chapter 6.5 and 6.8 of the California Health and Safety Code and Chapter 4 of Division 7 of the Water Code.

ii. *Local Oversight Program (LOP)*

The County of San Mateo Health Services Agency has been contracted by the State as the LOP Agency with jurisdiction within the EA Study Area. The objective of the LOP Agency is to identify and oversee the investigation and remediation of UST petroleum release sites within its jurisdiction. Pursuant to Health

⁷ City of Menlo Park – Community Development Department, Planning Division, *Hazardous Materials Applications Guidelines*, updated January 2011.

and Safety Code Section 25297.1, work performed by the LOP Agency shall be consistent with cleanup standards specified by the SWRCB. Corrective action shall comply with all applicable waste discharge requirements, state policies for water quality control, State and Regional Water Board water quality control plans, Health and Safety Code Chapters 6.7, and Chapters 16 of Title 23, California Code of Regulations.

B. Existing Conditions

1. Wildland Fires

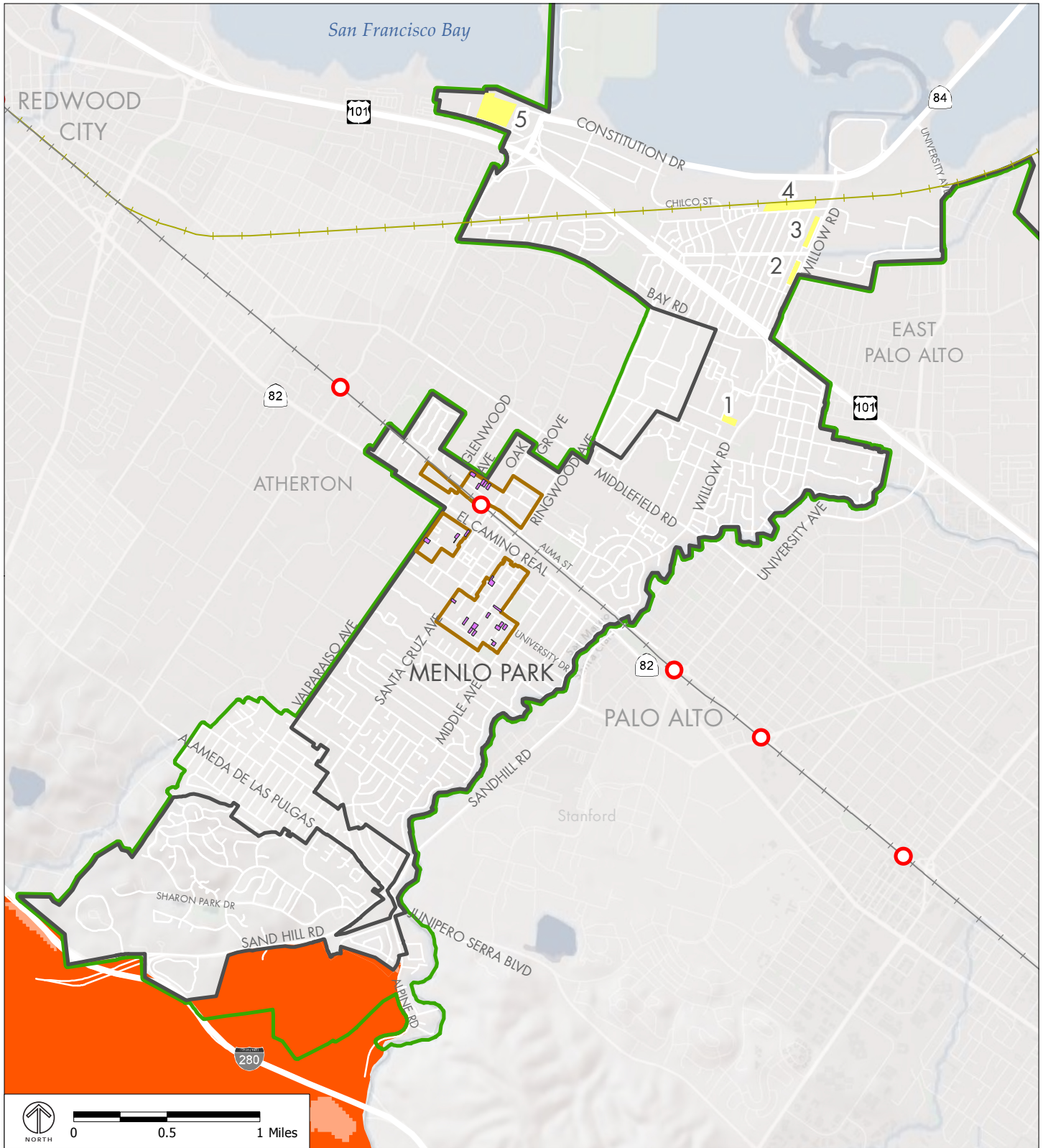
The severity of the wildfire hazard is determined by the relationship between three factors: fuel classification, topography, and critical fire weather frequency. The California Department of Forestry and Fire Protection (CAL FIRE) defines Fire Hazard Severity Zones for areas within the state; fire hazard is defined as a “measure of the likelihood of an area burning and how it burns,” with a zone being an area characterized by a particular level of fire hazard. CAL FIRE Fire Hazard Severity Zone maps indicate areas for which the State of California has fiscal responsibility for wildland fire protection services as the State Responsibility Area, and areas for which local jurisdictions have fiscal responsibility as the Local Responsibility Area.

As shown on Figure 4.7-1, the EA Study Area does not contain areas of moderate, high, or very high Fire Hazard Severity for the Local Responsibility Area,⁸ nor any areas of moderate, high, or very high Fire Hazard Severity for the State Responsibility Area.⁹

CAL FIRE describes “wildland/urban interface” as the condition where highly flammable native vegetation meets high-value structures, such as homes. In most cases, there is not a clearly defined boundary or interface between the structures and vegetation that present the hazard. Historically, homes in these ill-defined wildland/urban intermix boundary areas were particularly vulnerable to wildfires because they were built with a reliance on fire department response for protection rather than fire resistance, survivability, and self-protection. However, in the recent past, there has developed a greater appreciation for the need to regulate development in these hazardous areas as a result of a number of serious wildland fire conflagrations throughout the state.

⁸ California Department of Forestry and Fire Protection, 2007, http://frap.cdf.ca.gov/webdata/maps/san_mateo/fhszl_map.41.pdf, accessed October 31, 2012.

⁹ California Department of Forestry and Fire Protection, 2007, http://frap.cdf.ca.gov/webdata/maps/san_mateo/fhszs_map.41.pdf, accessed February 8, 2013.



Source: City of Menlo Park; The Planning Center | DC&E, 2013; ESRI 2010; FHA 2002; CA Department of Forestry and Fire Protection, 2007

Fire Hazard Severity Zones (State Responsibility Area)		Potential Sites to be Studied for Rezoning to Higher Density	City Limits
Moderate	Lots with Additional Housing Unit Potential	Infill Areas around Downtown	Sphere of Influence
High			
Very High			

FIGURE 4.7-1

WILDLAND FIRE HAZARDS

2. Hazardous Material

The term “hazardous material” is defined in different ways for different regulatory programs. The California Health and Safety Code Section 25501 definition of a hazardous material is: “any material that, because of its quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment.”

Once a hazardous material is released, it moves from the source to a point of contact with the community or environment through an exposure pathway. To reach that point of contact, the exposure pathway must have:

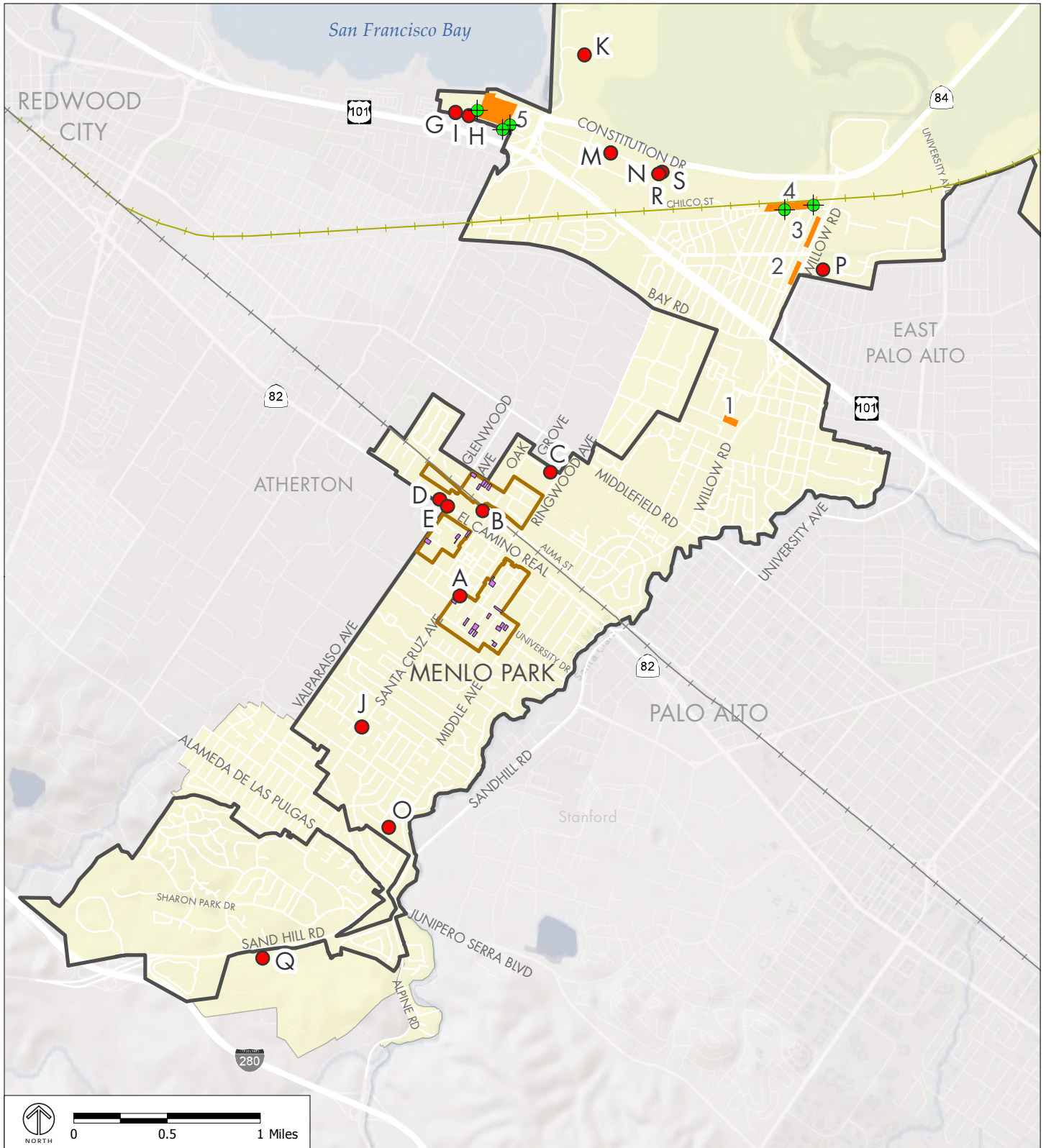
1. A contamination source or point of release.
2. A transport mechanism from the source to the air, surface water, groundwater, or soil.
3. A contact point where people are exposed to contaminated air, surface water, groundwater or soil.
4. A route of entry into the body. Routes of entry include ingestion (eating or drinking), inhalation (breathing), and absorption (skin contact).

If any of the above requirements for an exposure pathway are not present, the pathway is incomplete and no exposure or risk is possible. In some cases, although a pathway is complete, the likelihood that exposure will occur is very small.

The DTSC divides hazardous material sites into three categories: clean-up sites, permitted sites, and other sites. Sites listed within these three categories can be at various stages of evaluation or clean up, from the beginning to the end of the process.

As shown on Figure 4.7-2, the DTSC has identified locations sites in EA Study Area that have been known or suspected to contain hazardous materials.¹⁰ Table 4.7-1 lists the sites along with their current status of evaluation or remediation.

¹⁰ Department of Toxic Substances Control, EnviroStor, [http://www.envirostor.dtsc.ca.gov/public/mapfull.asp?global_id= &x= 119&y= 37&z= 18&ms= 640,480&mt= m&findaddress= True&city= menlo%20park&zip= &county= &federal_superfund= true&state_response= true&voluntary_cleanup= true&school_cleanup= true&ca_site= true&tiered_permit= true&evaluation= true&military_evaluation= true&school_investigation= true&operating= true&post_closure= true&non_operating= true](http://www.envirostor.dtsc.ca.gov/public/mapfull.asp?global_id=&x=119&y=37&z=18&ms=640,480&mt=m&findaddress=True&city=menlo%20park&zip=&county=&federal_superfund=true&state_response=true&voluntary_cleanup=true&school_cleanup=true&ca_site=true&tiered_permit=true&evaluation=true&military_evaluation=true&school_investigation=true&operating=true&post_closure=true&non_operating=true), accessed October 31, 2012.



Source: City of Menlo Park; The Planning Center | DC&E, 2013; ESRI 2010; FHA 2002; Department of Toxic Substances Control, EnviroStor.









-  LUFT Locations
-  Hazardous Materials Locations
-  Dumbarton Rail Corridor
-  Lots with Additional Housing Unit Potential
-  Infill Areas around Downtown
-  Potential Sites to be Studied for Rezoning to Higher Density
-  City Limits
-  Sphere of Influence

FIGURE 4.7-2

HAZARDOUS MATERIALS LOCATIONS

CITY OF MENLO PARK
 HOUSING ELEMENT UPDATE, GENERAL PLAN CONSISTENCY UPDATE,
 AND ZONING ORDINANCE AMENDMENTS ENVIRONMENTAL ASSESSMENT
 HAZARDS AND HAZARDOUS MATERIALS

TABLE 4.7.1 HAZARDOUS MATERIALS SITES IN EA STUDY AREA

Site	Site Name	Address	Type	Status
	No Name	1258 El Camino Real	Voluntary Cleanup	No Further Action
A	Camp Fremont	No Street Address	State Response	Inactive; Needs Evaluation
B	Derry Lane Mixed Use Development	Derry Lane	State Response	Inactive; Needs Evaluation
C	Dibble General Hospital/Stanford Research Institute	333 Ravenswood Avenue	Military Evaluation	Inactive; Needs Evaluation
D	Former Menlo Park Pet Hospital	1450 El Camino Real	Evaluation	Active
E	Former Atherton Village Cleaners	1438 El Camino Real	Evaluation	Active
F	Former Peninsula Sportsmen's Club	East of University Avenue	Voluntary Cleanup	Referred to SWRCB
G	General Circuits Inc.	3585 Haven Avenue	Corrective Action	Inactive; Needs Evaluation
H	General Circuits	3549 Haven Avenue	Corrective Action	RCRA
I	General Circuits Inc.	3549 Haven Avenue	Non-Operating	Referred to EPA
J	Hillview Middle School	1100 Elder Avenue	School Cleanup	Certified
K	Menlo Park Sanitation/Bedwell Bayfront Park	1700 Marsh Road Extension	Evaluation	No Further Action
L	Menlo Park West Campus	312-314 Construction Drive	Voluntary Cleanup	Active
M	Menlo Tech	188 Constitution Drive	Voluntary Cleanup	Inactive; Needs Evaluation
N	Menlo Tech, Inc.	188 Constitution Drive	Tiered Permit	Inactive; Needs Evaluation
O	Oak Knoll Elementary School	1895 Oak Knoll Lane	School Investigation	No Action Required
P	Sanford Metal Processing Company	980 O'Brien Drive	Tiered Permit	Refer; Other Agency
Q	Stanford Linear Accelerator CTR*	2575 Sand Hill Road	Tiered Permit	Refer; Other Agency
R	Tyco Electronics Corporation	300 Constitution Drive	Corrective Action	Certified
S	Tyco Electronics Corporation	300 Constitution Drive	Non-Operating	None Listed

Note: The Beltramo Property at 1452 and 1460 El Camino Real is currently listed with the DTSC as being "Inactive; Needs Evaluation;" however, the City has identified that this site is currently undergoing corrective action to clean up the site and the site is being developed.

*Located in the EA Study Area, but not within the City limits.

Source: Department of Toxic Substances Control, EnviroStor website at <http://www.envirostor.dtsc.ca.gov>, accessed February 5, 2013. City of Menlo Park Staff, February 05, 2013.

A total of 20 sites are listed under the Cleanup Sites category. Of these, approximately half are under Corrective Action, State Response, or Voluntary Cleanup. Voluntary Cleanup is overseen by the Statewide Cleanup Operation Division. Of the remaining sites, three are under evaluation, and another three are under Tiered Permits. The list includes one inactive military site which is listed as needing evaluation. The list also includes two school sites, overseen by the Schools Division, are listed as “certified” or “no action required.” Finally, two sites are listed as non-operating. There are no listed Federal Superfund sites in the EA Study Area. A single site is listed under the category of Permitted, non-operating sites.

In addition, several Leaking Underground Fuel Tanks (LUFTs) are scattered throughout the city, concentrated along El Camino Real and in downtown Menlo Park. LUFTs are a common source of soil and groundwater contamination. A wide variety of industries have historically used underground storage tanks for gasoline, diesel, waste oils, solvents, and other chemicals. Prior to regulation in the 1980s, these underground tanks were typically not monitored or provided with secondary containment. If a tank leaked, the contents could migrate to the soil and groundwater.

Several locations that are listed under the Spills, Leaks, Investigation, and Cleanups (SLIC) Program, which investigates and regulates non-permitted discharges, also have been identified within the EA Study Area. These are found mostly in the downtown area and the northeastern portion of the EA Study Area.

As shown in Table 4.7-2, the potential housing Site 5 (Haven Avenue) has been identified as a location that is known or suspected to contain hazardous materials. In addition to the addresses provided in Table 4.7-1, 3645 Haven Avenue currently has a Covenant to Restrict Use of Property¹¹ (Covenant) between the owner of record and the San Mateo County Environmental Health Services Division. As described in the Covenant, the purpose of the Covenant is to protect the present and future public health and safety, and to ensure the location is used in such a manner as to avoid potential harm to persons or property that may result from hazardous substances which may have been deposited on the location by the previous occupant CT International Sales Company. Chemicals including total petroleum hydrocarbons, quantified in the diesel range and the motor oil range, have been detected in the soil in and under portions of the location. A closure report dated October 4, 2004 and remediation activities were completed at the location in accordance with the County’s Health Division approved work plan dated February 10, 2004. The risk of public exposure if any to the contaminants has been minimized by the removal of readily accessible soil containing petroleum hydrocarbons above the San Francisco Bay Regional Water Quality Control Board’s industrial land

¹¹ Covenant to Restrict Use of Property for 3645 Haven Avenue, February 15, 2005.

use environmental screening levels. The County's Health Division has indicated its belief that if the contaminated soils should become disturbed by the construction of and occupation by residential facilities or daycare uses, exposure could take place through dermal contact, ingestion or inhalation of dusts and particulates from on-site soil and that such exposure in the form of dermal contact and ingestion of dusts and particulates from on-site soil could be detrimental to human health.

C. Standards of Significance

The Plan Components would have a significant impact with regard of hazardous materials if it would:

1. Create a significant hazard to the public or the environment through the routine transport, use or disposal of hazardous materials.
2. 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.
3. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances or waste within ¼-mile of an existing or proposed school.
4. Be located on a site which is included on a list of hazardous material sites compiled pursuant to Government Code Section 65962.5 and, as a result, create a significant hazard to the public or the environment.
5. For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area.
6. For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area.
7. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.
8. Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

D. Impact Discussion

1. Create a significant hazard to the public or the environment through the routine transport, use or disposal of hazardous materials.

Potentially hazardous building materials (i.e. ACM, lead-based paint, PCBs, mercury) may be encountered during the demolition of existing structures. The removal of these materials (if present) by contractors licensed to remove and handle these materials in accordance with existing federal, State, and local regulations would insure that risks associated with the transport, storage, use, and disposal of such materials would be *less than significant*.

Common cleaning substances, building maintenance products, paints and solvents, and similar items would likely be stored, and used, at the future residential development that could occur under the Plan Components. These potentially hazardous materials, however, would not be of a type or occur in sufficient quantities to pose a significant hazard to public health and safety or the environment. Consequently, associated impacts from implementation of the Plan Components would be *less than significant*.

2. 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.

As described in section D.1 above, the storage and use of common cleaning substances, building maintenance products, paints and solvents in the potential development planned for under the Plan Components could likely occur; however, these potentially hazardous substances would not be of a type or occur in sufficient quantities on-site to pose a significant hazard to public health and safety or the environment.

The following current, modified and new General Plan policies and programs would ensure risks associated with hazardous materials in Menlo Park would be minimized.

a. Amended General Plan Safety Element

- “ Policy S-1.16: Hazardous Materials Regulations. Review and strengthen, if necessary, regulations for the structural design and/or uses involving hazardous materials to minimize risk to local populations. Enforce compliance with current State and local requirements for the manufacturing, use, storage, transportation and disposal of hazardous materials, and the designation of appropriate truck routes in Menlo Park.

- “ Policy S1.3: Hazard Data and Standards. Integrate hazard data (geotechnical, flood, fire, etc.) and risk evaluations into the development review process and maintain, develop and adopt up-to-date standards to reduce the level of risk from natural and human-caused hazards for all land use.
- “ Policy S1.5: New Habitable Structures. Require that all new habitable structures to incorporate adequate hazard mitigation measures to reduce identified risks from natural and human-caused hazards.
- “ Goal S1: Assure a Safe Community. Minimize risk to life and damage to the environment and property from natural and human-caused hazards, and assure community emergency preparedness and a high level of public safety services and facilities.
- “ Policy S1.19: Disposal of Existing Hazardous Materials on Sites Planned for Housing. Require that sites planned for housing be cleared of hazardous materials (paint, solvents, chlorine, etc.) and the hazardous materials disposed in compliance with State and Federal laws.
- “ Policy S1.18: Potential Hazardous Materials Conditions Investigation. Require developers to conduct an investigation of soils, groundwater and buildings affected by hazardous-material potentially released from prior land uses in areas historically used for commercial or industrial uses, and to identify and implement mitigation measures to avoid adversely affecting the environment or the health and safety of residents or new uses.
- “ Policy S1.17: Potential Exposure of New Residential Development to Hazardous Materials. Minimize risk associated with hazardous materials by assessing exposure to hazardous materials of new residential development and sensitive populations near existing industrial and manufacturing areas. Minimize risk associated with hazardous materials.
- “ Program S1.A: Link the City’s Housing and Safety Elements. Continue to review and revise the Safety Element, as necessary, concurrently with updates to the General Plan Housing Element whenever substantial new data or evidence related to prevention of natural and human hazards become available.
- “ Program S1.J: Require Health and Safety Plan for Hazardous Materials. Require the preparation of health and safety plans to be used to protect the general public and all workers in construction areas from potentially hazardous materials. The plan shall describe the practices and procedures to protect worker health in the event of an accidental release of hazardous materials or if previously undiscovered hazardous materials are encountered during construction. The plan shall include items such as spill prevention, cleanup, and evacuation procedures. The plan will help protect the public and workers by providing procedures and contingencies that will help reduce the exposure to hazardous materials.

Compliance existing federal, State, and local regulations and implementation of the General Plan goals, policies and programs listed above would ensure that the risk of accidents and spills are minimized to the maximum extent practicable. Consequently, overall, associated hazardous materials impacts would be *less than significant*.

3. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances or waste within ¼-mile of an existing or proposed school.

The Plan Components include General Plan goals, policies and programs to bring the General Plan into consistency with applicable State planning requirements. Under the Plan Components, land use changes would occur to allow for additional housing in the EA Study Area. While opportunity housing Site 1 is within ¼-mile of Menlo Oaks/Willow Oaks Elementary and Site 4 is within ¼-mile of Belle Haven Elementary, as described above, the future housing that could occur would not involve the storage, handling, or disposal of hazardous materials that would pose a significant risk to the public. Therefore, there would be *no impact* related to hazardous emissions or hazardous material handling within ¼-mile of a school.

4. Be located on a site which is included on a list of hazardous material sites compiled pursuant to Government Code Section 65962.5 and, as a result, create a significant hazard to the public or the environment.

As described above and as shown on Figure 4.7-2, on the basis of the and records searches of the Envirostor database, it was determined that none of the potential housing sites are at locations listed under the SLIC program, and two of the potential housing sites are identified on one or more lists of hazardous materials sites as locations of former LUFTs. These are housing Site 4 at 755 and 831 Hamilton Avenue East, and Site 5 at 3605, 3700, and 3705 Haven Avenue. The other three potential housing sites and the proposed infill areas were determined not to be on any list of hazardous materials sites. Furthermore, it is assumed that any second unit that could be permitted under the Plan Components would occur on sites where existing residential uses currently exist, and therefore would not be located on a site with hazardous materials.

One of the potential housing sites, Site 5, identified with a former LUFT (Shooter Landscaping at 3605 Haven Avenue) was determined to have released gasoline to soil and groundwater. Although the case was closed in 2002, the San Mateo County LOP Agency required notification of any proposed development as a condition of closure because residual contamination remained in soil and groundwater. Therefore, the LOP Agency staff cannot consider supporting development of this parcel of land without first receiving (1) a document describing the proposed land use, location and depth of the proposed buildings and utilities, and the depth of soil excavation near the parcel and (2) a waste management plan describing how soil and groundwa-

ter will be managed (e.g. screened for potential hydrocarbon contamination, segregated, stored, samples, and disposed) and the mitigation, notification, and sampling measures that will be implemented if contamination is encountered during soil grading and excavation. In addition, although appropriate remediation of hazardous materials has occurred on potential housing Site 5 as of October 4, 2004, according to the Covenant to Restrict Use of Property¹² (Covenant) between the owner of record and the San Mateo County Environmental Health Services Division if the contaminated soils should become disturbed by the construction of and occupation by residential facilities or daycare uses, exposure could take place through dermal contact, ingestion or inhalation of dusts and particulates from on-site soil and that such exposure in the form of dermal contact and ingestion of dusts and particulates from on-site soil could be detrimental to human health.

The other potential housing sites identified with LUFTs, Site 4 (755 and 831 Hamilton Avenue East) was determined to be a site where soil only was affected. This site has since been investigated and closed (January 1997) with no further action required under the direct oversight of the San Mateo County LOP Agency and the SWRCB. As such, continued compliance with applicable federal, State, and local regulations, and implementation of new General Plan Policy listed in Section D2.a would ensure that associated impacts are reduced to the maximum extent practicable. Therefore, any potential future development that could occur under the Plan Components would not create a significant hazard to the public or the environment by virtue of being identified as a hazardous materials site and impacts related to existing hazardous material sites would be *less than significant*.

The potential future development on housing Sites 1 through 4, the infill sites around downtown and the second units that could occur under the Plan Components would not create a significant hazard to the public or the environment by virtue of being identified as a hazardous materials site. Therefore, impacts related to existing hazardous materials at these sites would be *less than significant*. However, with regards to housing Site 5, without remediation on the site for residential uses that meets the County's requirements, impacts related to existing hazardous materials at this housing site would be *significant*.

¹² Covenant to Restrict Use of Property for 3645 Haven Avenue, February 15, 2005.

5. For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area.

The EA Study Area is located approximately two miles from Palo Alto Airport, but no portions of the city are within the airport safety zones established by the Palo Alto Airport Comprehensive Land Use Plan.¹³ The EA Study Area is more than two miles from the San Francisco International and San Carlos Airports to the north and Moffett Federal Airlifted to the south. Given the distances from the nearest public use airports, the EA Study Area would not be subject to any airport safety hazards. The Plan Components would also not have an adverse effect on aviation safety or flight patterns. Thus, there would be *no impact* related to public airport hazards.

6. For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area.

There are no private airstrips in the vicinity of the locations where future residential development could occur under the Plan Components. Thus, there would be *no impact* related to private airstrip hazards.

7. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

The Plan Components include current, modified and new General Plan policies to bring the General Plan into consistency with applicable State planning requirements. The Plan Components do not include potential land use changes that would impair or physically interfere with the ability to implement the City's EOP or the City's Disaster Preparedness Manual. Implementation of the following current, modified and new General Plan policies and programs would ensure that new development in the EA Study Area would not conflict with emergency operations in the EA Study Area.

a. Amended General Plan Safety Element

- “ Policy S-1.38: Emergency Vehicle Access. Require that all private roads be designed to allow access for emergency vehicles as a prerequisite to the granting of permits and approvals for construction.

¹³ Santa Clara County Airport Land Use Commission, 2008, Palo Alto Airport Comprehensive Land Use Plan, Figure 7, <http://www.sccgov.org/sites/planning/Plans%20-%20Programs/Airport%20Land-Use%20Commission/Documents/PAO-adopted-11-19-08-CLUP.pdf>, accessed on September 6, 2012.

- “ Policy S1.11: Visibility and Access to Address Safety Concerns. Require that residential development be designed to permit maximum visibility and access to law enforcement and fire control vehicles consistent with privacy and other design considerations.
- “ Policy S1.5: New Habitable Structures. Require that all new habitable structures to incorporate adequate hazard mitigation measures to reduce identified risks from natural and human-caused hazards.
- “ Policy S1.29: Fire Equipment and Personnel Access. Require adequate access and clearance, to the maximum extent practical, for fire equipment, fire suppression personnel, and evacuation for high occupancy structures in coordination with the Menlo Park Fire Protection District.
- “ Goal S-1: Assure a Safe Community. Minimize risk to life and damage to the environment and property from natural and human-caused hazards, and assure community emergency preparedness and a high level of public safety services and facilities.
- “ Program S1.A: Link the City’s Housing and Safety Elements. Continue to review and revise the Safety Element, as necessary, concurrently with updates to the General Plan Housing Element whenever substantial new data or evidence related to prevention of natural and human hazards become available.
- “ Policy S1.30: Coordination with the Menlo Park Fire District. Encourage City-Fire District coordination in the planning process and require all development applications to be reviewed and approved by the Menlo Park Fire Protection District prior to project approval.

Therefore, implementation of the listed policies and programs, and compliance with the provisions of the 2010 CFC and the 2010 CBC would ensure that adoption of the Plan Components would result in a *less-than-significant* impact with respect to interference with an adopted emergency response plan or emergency evacuation plan.

8. Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

The EA Study Area is located in a highly urbanized area and is not surrounded by woodlands or vegetation that would provide fuel load for wildfires. As shown on Figure 4.7-1, the EA Study Area is not designated as having high, very high, or extreme fire threat, as determined by CAL FIRE’s Wildlife Urban Interface Fire Threat data. All housing sites are currently developed, containing limited amount vegetation, and are neither located on or directly adjacent to forested areas that could contribute to hazardous fire conditions

All development in the EA Study Area would be constructed pursuant to the CBC, CFC and the MPFPD Code. In addition, the MPFPD conducts a weed-abatement program throughout its jurisdiction to minimize fire risk on empty or unmaintained parcels. As noted above in Section D.7, amended General Plan goals and policies would reduce the risk of loss, injury, or death resulting from wildland fire and impacts would be *less than significant*.

Fire hazard related impacts are discussed further in Chapter 4-12, Public Services and Recreation, of this EA.

9. Cumulative Impacts

As discussed previously, development allowed by the Plan Components would not result in significant impacts from the increased use of hazardous household materials and would not increase exposure to potential hazards associated with wildland fires and aircraft operation. The Plan Components would not interfere with implementation of emergency response plans. In addition, potential project-level impacts associated with hazards and hazardous materials would be further reduced through compliance with existing, modified and new General Plan policies and programs, and other local, regional, State, and federal regulations. Since impacts associated with hazardous materials, wildland fire, and airport hazards are, by their nature, focus on specific sites or areas, the *less-than-significant* impacts within the EA Study Area would not contribute to a cumulative increase in hazards in the immediate vicinity of the EA Study Area or throughout the region. Therefore, the potential for cumulative impacts associated with safety and hazards would be *less than significant*.

E. Impacts and Mitigation Measures

Impact HAZ-1: Potential housing Site 5 (Haven Avenue) is site with known exposure to hazardous materials in the past and at the time of writing this EA has restrictions related to hazardous waste remediation under the authority of the San Mateo County.

Mitigation Measure HAZ-1: Prior to issuing building permits for residential development on potential housing Site 5 (Haven Avenue) the applicant shall assess exposure to hazardous materials through the preparation of a focused Phase 1 Environmental Site Assessment (ESA). The ESA shall include an initial screening level analysis followed by a detailed, quantitative human risk assessment analysis, if necessary, per the approval of the San Mateo County Environmental Health Services Division. The applicant shall also prepare and implement a Soil Management Plan and companion Sampling and Analysis Plan during and following soil excavation and compaction activities. As part of the Soil Management

Plan, the applicant shall retain an experienced, independent environmental monitor to observe all significant earth-moving activities. The monitor shall observe the operations, remaining watchful for stained or discolored soil that could represent residual contamination. The monitor shall also be empowered to alert the City and regulatory agencies, when appropriate, and provide direction to the grading contractor.

Significance After Mitigation: Implementation of Mitigation Measure HAZ-1 would ensure that impacts related to exposing sensitive receptors to hazardous waste materials on potential housing Site 5 (Haven Avenue) would be *less than significant*.

CITY OF MENLO PARK
HOUSING ELEMENT UPDATE, GENERAL PLAN CONSISTENCY UPDATE,
AND ZONING ORDINANCE AMENDMENTS ENVIRONMENTAL ASSESSMENT
HAZARDS AND HAZARDOUS MATERIALS

4.8 HYDROLOGY AND WATER QUALITY

This chapter describes the existing character of the Environmental Assessment (EA) Study Area related to hydrology and water quality. This chapter provides an evaluation of the potential environmental consequences of future development that could occur by adopting and implementing the proposed Housing Element Update, General Plan Consistency Update, and associated Zoning Ordinances amendments, together referred to as the “Plan Components.” A summary of the relevant regulatory setting and existing conditions is followed by a discussion of Plan Components and cumulative impacts.

A. Regulatory Framework

This section summarizes key federal, State, and local regulations and programs related to water quality in the EA Study Area.

1. Federal Laws and Regulations

a. Federal Emergency Management Agency

The Federal Emergency Management Agency (FEMA) administers the National Flood Insurance Program (NFIP) to provide subsidized flood insurance to communities that comply with FEMA regulations limiting development in floodplains.¹ FEMA also issues Flood Insurance Rate Maps (FIRMs) that identify which land areas are subject to flooding. These maps provide flood information and identify flood hazard zones in the community. The design standard for flood protection is established by FEMA. FEMA’s minimum level of flood protection for new development is the 100-year flood event, also described as a flood that has a 1-in-100 chance of occurring in any given year.

Additionally, FEMA has developed requirements and procedures for evaluating earthen levee systems and mapping the areas affected by those systems.² Levee systems are evaluated for their ability to provide protection from 100-year flood events and the results of this evaluation are documented in the FEMA Levee Inventory System (FLIS). Levee systems must meet minimum freeboard standards and must be maintained according to an officially adopted maintenance plan. Other FEMA levee system evaluation criteria include structural design and interior drainage.

¹ Federal Emergency Management Agency’s Library, *National Flood Insurance Program Description*, <http://www.fema.gov/library/resultSearchTitle.do;jsessionid=DD174A565E1F55952F9B72CE7EC2818C.Worker2Library>, accessed on September 28, 2012.

² Federal Emergency Management Agency (FEMA), 2003. *Guidelines and Specifications for Flood Hazard Mapping Partners*, <http://www.fema.gov/library/viewRecord.do?id=2206>, accessed on September 26, 2012.

b. Clean Water Act

The United States (U.S.) Environmental Protection Agency (EPA) is the lead federal agency responsible for water quality management. The Clean Water Act (CWA, codified at 33 U.S.C. Sections 1251-1376) of 1972 is the primary federal law that governs and authorizes water quality control activities by the EPA, as well as the states. Various elements of the CWA address water quality, discussed below. Wetland protection elements, including permits to dredge or fill wetlands, are administered by the US Army Corps of Engineers under Section 404 of the CWA.

Under Section 401 of the CWA, an applicant for a Section 404 permit to discharge dredged or fill material into waters of the United States must first obtain a certificate from the appropriate State agency stating that the fill is consistent with the State's water quality standards and criteria. In California, the authority to either grant water quality certification or waive the requirement is delegated by the State Water Resources Control Board (SWRCB) to its nine Regional Water Quality Control Boards (RWQCBs).

Under federal law, the EPA has published water quality regulations under Volume 40 of the Code of Federal Regulations (40 CFR). Section 303 of the CWA requires states to adopt water quality standards for all surface waters of the United States. As defined by the CWA, water quality standards consist of two elements: (1) designated beneficial uses of the water body in question, and (2) criteria that protect the designated uses. Section 304(a) requires the EPA to publish advisory water quality criteria that accurately reflect the latest scientific knowledge on the kind and extent of all effects on health and welfare that may be expected from the presence of pollutants in water. Where multiple uses exist, water quality standards must protect the most sensitive use. In California, the EPA has designated the SWRCB and its RWQCBs with authority to identify beneficial uses and adopt applicable water quality objectives.

c. National Pollutant Discharge Elimination System

The National Pollutant Discharge Elimination System (NPDES) permit program was established by the CWA to regulate municipal and industrial discharges to surface waters of the U.S. from their separate municipal storm sewer systems (MS4s). Federal NPDES permit regulations have been established for broad categories of discharges, including point-source municipal waste discharges and nonpoint-source stormwater runoff. NPDES permits generally identify effluent and receiving water limits on allowable concentrations and/or mass emissions of pollutants contained in the discharge; prohibitions on discharges not specifically allowed under the permit; and provisions that describe required actions by the discharger, including industrial pretreatment, pollution prevention, self-monitoring, and other activities.

2. State Laws and Regulations

a. Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (Porter-Cologne Act, codified in Division 7 of the California Water Code) of 1969 is California's statutory authority for the protection of water quality. Under the Act, the State must adopt water quality policies, plans, and objectives that protect the State's waters for the use and enjoyment of the people. Such "waters of the State" include streams, groundwater, isolated wetlands, and other bodies of water that are not under federal jurisdiction as "waters of the United States," (under the Clean Water Act). These waters include those which are not tributary to navigable waterways. The Act sets forth the obligations of the SWRCB and RWQCBs to adopt and periodically update water quality control plans (Basin Plans). Basin Plans are the regional water quality control plans required by both the CWA and Porter-Cologne Act in which beneficial uses, water quality objectives, and implementation programs are established for each of the nine regions in California.

This Act also requires waste dischargers to notify the RWQCBs of their activities through the filing of Reports of Waste Discharge (RWD) and authorizes the SWRCB and RWQCBs to issue and enforce waste discharge requirements (WDRs), NPDES permits, Section 401 water quality certifications, or other approvals.³

b. State Water Resources Control Board

In California, the SWRCB has broad authority over water quality control issues for the State. The SWRCB is responsible for developing statewide water quality policy and exercises the powers delegated to the State by the federal government under the CWA. Other State agencies with jurisdiction over water quality regulation in California include the California Department of Health Services (DHS) for drinking water regulations, the California Department of Pesticide Regulation, the California Department of Fish and Wildlife (CDFW), and the Office of Environmental Health and Hazard Assessment.

Regional authority for planning, permitting, and enforcement is delegated to the nine RWQCBs. The regional boards are required to formulate and adopt water quality control plans for all areas in the region and establish water quality objectives in the plans. The EA Study Area is within the jurisdiction of the San Francisco Bay RWQCB (Region 2).

³ Porter-Cologne Water Quality Act's website. http://ceres.ca.gov/wetlands/permitting/Porter_summary.html, accessed on September 28, 2012.

The San Francisco Bay RWQCB adopted a Water Quality Control Plan for the San Francisco Bay Basin (the Basin Plan) that designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the Basin Plan.⁴

c. California Fish and Game Code

The CDFW protects streams, water bodies, and riparian corridors through the streambed alteration agreement process under Section 1601 to 1606 of the California Fish and Game Code. The Fish and Game Code stipulates that it is “unlawful to substantially divert or obstruct the natural flow or substantially change the bed, channel or bank of any river, stream or lake” without notifying the CDFW, incorporating necessary mitigation and obtaining a streambed alteration agreement. CDFW’s jurisdiction extends to the top of banks and often includes the outer edge of riparian vegetation canopy cover.

d. State Water Resources Control Board Construction General Permit (99-08-DWQ)

Construction activities that disturb one or more acres of land that could impact hydrologic resources must comply with the requirements of the SWRCB Construction General Permit (99-08-DWQ). Under the terms of the permit, applicants must file Permit Registration Documents (PRDs) with the SWRCB prior to the start of construction. The PRDs include a Notice of Intent (NOI), risk assessment, site map, Storm Water Pollution Prevention Plan (SWPPP), annual fee, and a signed certification statement. The PRDs are now submitted electronically to the SWRCB via the SMARTS website. Applicants must also demonstrate conformance with applicable best management practices (BMPs) and prepare a SWPPP containing a site map that shows the construction site perimeter, existing and proposed buildings, lots, roadways, stormwater collection, and discharge points, general topography both before and after construction, and drainage patterns across the project site. An updated Construction General Permit (2009-0009-DWQ), adopted on September 2, 2009 and effective July 1, 2010, requires tighter stormwater pollution prevention controls, including the imposition of more minimum BMPs and the development and implementation of Rain Event Action Plans for certain sites.

⁴ San Francisco Bay RWQCB, 2007. *Water Quality Control Plan (Basin Plan) for the San Francisco Bay Basin*, http://www.swrcb.ca.gov/rwqcb2/basin_planning.shtml, accessed on September 28, 2012.

e. Water Conservation Act of 2009 (Senate Bill X7 7 (2009))⁵

New mandatory requirements, per state law (SB-X7 7), mandate the reduction of per capita water use and agricultural water use throughout the state by 20 percent by 2020.

f. State Updated Model Landscape Ordinance (Assembly Bill 1881 (2006))⁶

The updated Model Landscape Ordinance requires cities and counties to adopt landscape water conservation ordinances by January 31, 2010 or to adopt a different ordinance that is at least as effective in conserving water as the updated Model Ordinance (MO). The City adopted Ordinance No. 968, Water Efficient Landscaping Regulations, in 2010, and revised City Code 12.44, which is described below.

3. Local Regulations and Policies

a. San Francisco Bay Conservation and Development Commission

The California Coastal Commission carries out its mandate locally through the San Francisco Bay Area Conservation and Development Commission (BCDC). BCDC's jurisdiction on San Francisco Bay includes all sloughs, marshlands between mean high tide and 5 feet above mean sea level, tidelands, submerged lands, and land within 100 feet of the Bay shoreline. The precise boundary is determined by BCDC on request. For planning purposes, BCDC assumes that projects have a lifespan of at least 50 to 90 years.⁷

Since the issuance of the Governor's Executive Order S-13-08 on November 2008, BCDC has followed other Natural Resource Agencies in planning for two sea level rise scenarios: 16 inches by mid-century and 55 inches by the end of the century. In April 2009, BCDC published its report with maps indicating zones that could be flooded due to sea level rise and that were based on existing elevations.⁸ In May 2011, BCDC published a revised draft of its proposed amendments to its master planning document, the *Bay Plan*. This received considerable public review and environmental review, and was adopted on October 6, 2011.^{9,10} These amendments include revised findings and policies to adapt to the effects of sea level rise.

⁵ Department of Water Resources, Senate Bill SBX7-7 2009 Information, <http://www.water.ca.gov/wateruse/efficiency/sb7/>, accessed on September 28, 2012.

⁶ <http://www.water.ca.gov/wateruseefficiency/landscapeordinance/>, accessed on September 27, 2012.

⁷ BCDC, 2011. *San Francisco Bay Plan*. Available online at: http://www.bcdc.ca.gov/laws_plans/plans/sfbay_plan.shtml. Accessed September 25, 2012.

⁸ BCDC, 2009. *Living with a Rising Bay: Vulnerability and Adaptation in San Francisco Bay and on its Shoreline*.

⁹ BCDC, 2011. *Staff Report, Revised Preliminary Recommendation and Environmental Assessment for Proposed Bay Plan Amendment No. 1-08 Concerning Climate Change*. (For Commission consideration on September 1, 2011.)

Several findings describe migration of the tidal marsh inland as a consequence of the sea level rise and the recommended adaptation. Finding o. in the new section on Climate Change states:

“Approaches for ensuring public safety in developed vulnerable shoreline areas through adaptive management strategies include but are not limited to: (1) protecting existing and planned appropriate infill development; (2) accommodating flooding by building or renovating structures or infrastructure systems that are resilient or adaptable over time; (3) discouraging permanent new development when adaptive management strategies cannot protect public safety; (4) allowing only new uses that can be removed or phased out if adaptive management strategies are not available as inundation threats increase; and (5) over time and where feasible and appropriate, removing existing development where public safety cannot otherwise be ensured...”

b. San Mateo County Flood Control District

The San Mateo County Flood Control District is a Countywide Special District, created by State legislation, to provide a mechanism to finance flood control projects. The legislation requires that a flood control zone be formed over an entire watershed and a proposed funding source be determined before a flood control project is undertaken. Recent changes in the State Constitution require an election if a flood control zone is to be financed with property assessments or taxes. As part of the program, the National Flood Insurance Program defines floodplain and floodway boundaries that are shown on FIRMs.

c. San Mateo Countywide Stormwater Pollution Prevention Program

The San Mateo Countywide Stormwater Pollution Prevention Program (STOPPP) involves a consortium of the 20 incorporated cities within San Mateo County. Many of STOPPP's activities are coordinated through the City/County Association of Governments of San Mateo County. This partnership also relies on each of the municipalities to implement local stormwater pollution prevention and control activities for its own local storm drain systems. The STOPPP Stormwater Management Plan (SWMP) describes measures for the prevention and control of stormwater pollution during the approximately 6-year period from April 2004 through June 2010. The SWMP serves as part of the basis of STOPPP's third NPDES municipal stormwater permit to be reissued by the Water Board. The NPDES permit system requires the SWMP to include performance standards for the following five different stormwater management

¹⁰ BCDC, 2011. Resolution No. 11-08. Adoption of Bay Plan Amendment No. 1-08 Adding New Climate Change Findings and Policies to the Bay Plan; And Revising the Bay Plan Tidal Marsh and Tidal Flats; Safety of Fills; Protection of the Shoreline; and Public Access Findings and Policies. Adopted October 6, 2011. Online at: http://www.bcdc.ca.gov/proposed_bay_plan/10-01Resolution.pdf.

components: Municipal Maintenance, Industrial and Illicit Discharge Controls, Public Information and Participation, New Development and Construction Controls, and Watershed Assessment and Monitoring.

The SWMP, in conjunction with the reissued permit adopted by the Water Board, is designed to enable STOPPP to meet the requirements of the Clean Water Act. In addition to obtaining coverage under the State NPDES General Permit for construction activities, the potential development would also be subject to coverage under the STOPPP NPDES municipal stormwater permit, applicable to post-construction operations. The stormwater pollution prevention plan required of the potential future development would have to be consistent with the SWMP.

d. San Francisquito Creek Joint Powers Authority

The JPA is a governmental organization with a board of directors made up of the elected officials of the Cities of Palo Alto, Menlo Park, East Palo Alto, San Mateo County, and the Santa Clara Valley Water District. The agency was formed in 1999 with the objective of protecting properties along San Francisquito Creek from 100-year floods, stabilizing creek banks, as well as enhancing the natural habitat.¹¹ The JPA and United States Army Corps of Engineers (USACE) are planning for large-scale, comprehensive flood risk reduction. The JPA is responsible for planning, designing, and implementing projects, which include increasing channel capacity through dredging, reducing flood risk by building levees and floodwalls, as well as through reconnecting the creek to 14 acres of Baylands in Palo Alto city limits to serve as creek floodplain.¹² The JPA's projects are typically funded by local, state, and federal partners. Another finance mechanism is the San Mateo County Flood Control District, which implements Countywide Special District flood control projects for projects on San Francisquito Creek.

e. City of Menlo Park General Plan

The City of Menlo Park General Plan includes goals, policies, and actions that apply broadly to hydrology and water quality issues potentially affected by the Plan Components. Relevant policies are identified later in this chapter under Section D (Impact Discussion).

¹¹ San Francisquito Creek Joint Powers Authority 2012. About. Accessed November 13, 2012 from <http://sfcjpa.org/web/about/agency-overview/>.

¹² San Francisquito Creek Joint Powers Authority 2012. SF Bay to Highway 101, <http://sfcjpa.org/web/projects/active/s.f.-bay-to-highway-101/>, Accessed 11, 13, 2012.

f. City of Menlo Park Municipal Code Chapter 7.38, Water Conservation¹³

This chapter contains regulations and restrictions on water use in order to conserve water resources and eliminate wasteful water uses. Section 7.38.030 contains specific requirements, such as repairing broken plumbing, sprinkler, or irrigation systems, recycling water that was used for cooling, and prohibiting the use of a hose without a positive shut-off valve for washing cars, building structures, or hard-surface areas.

g. City of Menlo Park Municipal Code Chapter 7.42, Stormwater Management Program¹⁴

Chapter 7.42 of the Municipal Code is intended to protect and enhance the water quality in Menlo Park. This chapter includes regulations and restrictions related to pollutants in stormwater discharges and non-stormwater discharges, including spills, and dumping or disposal of materials. To reduce pollutants in stormwater, the City requires that new development or redevelopment projects use BMPs.

h. City of Menlo Park Municipal Code Chapter 12.42, Flood Damage Prevention¹⁵

This chapter contains standards for any construction projects in areas of special flood hazard and coastal high hazard areas. The City designates special flood hazard areas based on the Flood Insurance Study (FIS), FIRMs, and Flood Boundary and Floodway Maps (FBFMs). In these areas, the City requires using flood-resistant construction materials and utility equipment as well as construction methods that minimize flood damage.

Any construction projects within the special flood hazard area must obtain a development permit reviewed by the floodplain administrator prior to construction. A permit application should include plans showing the location and elevation of the project, proposed elevation of the 1-percent chance storm Base Flood Elevation (BFE) in relationship to the lowest floor of all structures, and a description of any watercourse that could be altered as a result of potential development. Variances may be issued for the repair, rehabilitation, or restoration of historic structures, and listed in the National Register of Historic Places or the State Inventory of Historic places.

¹³ City of Menlo Park, Municipal Code Chapter 7.38, Water Conservation, <http://www.codepublishing.com/CA/menlopark/>, accessed on September 27, 2012.

¹⁴ City of Menlo Park, Municipal Code Chapter 7.42, Stormwater Management Program, <http://www.codepublishing.com/CA/menlopark/>, accessed on September 27, 2012.

¹⁵ City of Menlo Park, Municipal Code Chapter 12.42, Flood Damage Prevention, <http://www.codepublishing.com/CA/menlopark/>, accessed on September 27, 2012.

i. City of Menlo Park Municipal Code Chapter 12.44, Water Efficient Landscaping¹⁶

This chapter establishes water-efficient landscaping standards to conserve water use on irrigation. The provisions of this chapter apply to landscaping projects that include irrigated landscape areas exceeding 2,500 square feet when these projects are associated with new water service, subdivision improvements, grading and drainage improvements, a new construction subject to a building permit, or building additions or modifications subject to grading and drainage plan approval.

Prior to construction, the applicant must submit a landscape project application and applicable fees for review and approval. The application should include project information, water budget calculations (if the applicant uses a water budget approach rather than complying with turf area options), an outdoor water use efficiency checklist, and landscape and irrigation system design plans. The landscape and irrigation designs must be prepared and signed by a certified or authorized professional. After construction and prior to final approval of the project, the applicant must submit a landscape audit report. The City also requires the applicant maintain landscape irrigation facilities and comply with the landscape and irrigation maintenance schedule requirements.

B. Existing Conditions

1. Physical Environment

This section describes the physical environment that affects drainage systems in Menlo Park, including the topography, watershed and creek system, and climate conditions.

a. Topography

Menlo Park stretches from 326 feet above sea level in the foothills of Jasper Ridge (part of the Santa Cruz Mountains) in the east, through the flatlands in the center of the valley, to sea level at the marshes and mudflats of San Francisco Bay in the north-northeast. The City's center is relatively flat, with slopes of approximately 0.5 to 0.8 percent. The higher, hilly portion of the City is southwest of the street Alameda de las Pulgas. The lower, flatter portion of the City is northeast of Alameda de las Pulgas.

¹⁶ City of Menlo Park, Municipal Code Chapter 12.44, Water Efficient Landscaping, <http://www.codepublishing.com/CA/menlopark/>, accessed on September 27, 2012.

b. Watershed and Creek Systems

The City is located within the 50-square mile San Francisquito Creek watershed, which includes portions of both Santa Clara County and San Mateo County. The uppermost elevations of the watershed are west of Highway 35 (locally known as Skyline Boulevard), and its lowest points are in East Palo Alto where San Francisquito Creek empties into the San Francisco Bay. San Francisquito Creek forms the southern boundary of Menlo Park. The southernmost edge of the watershed is in the Los Trancos Regional Preserve near Palo Alto, and its northern most edge is Sweeny Ridge in the Golden Gate National Recreation Area.

Water flows west to east through natural creeks and streams and channelized waterways. In the undeveloped marshes, water flows through Flood Slough and Ravenswood Slough. In the urbanized portion of the EA Study Area, the main creek system is San Francisquito Creek. In general, the creek flows in a northeasterly direction, and ultimately drains into the San Francisco Bay. San Francisquito Creek flows through Menlo Park largely in its natural alignment, and it forms the southern boundary of the City limits. Riparian vegetation around the creek spans a 25- to 75-meter-wide space, depending on adjacent land use and topography, consisting primarily of willow, bay laurels, redwoods, alders, cottonwoods, dogwoods, valley oaks, and coast live oaks.¹⁷

c. Groundwater Aquifers

The City is situated above the Santa Clara Valley groundwater basin and San Mateo subbasin. The San Mateo subbasin is bounded by the Santa Cruz Mountains to the west-southwest, the Bay to the north-northeast, San Francisquito Creek to the south-southwest, and the Westside basin to the north-northwest. A relatively shallow water table aquifer overlies confined and semi-confined aquifers near the margins of the Bay, with most wells constructed to draw from the deeper portions. Recharge of the groundwater occurs through infiltration into streambeds and through percolation of rain on the valley floor. Well data from the California Department of Water Resources indicate that groundwater recharge in the EA Study Area increases from the hilly west to the flatter eastern portions of the City, and decreases with increasing depth.¹⁸

¹⁷ Stanford University Habitat Conservation Plan, San Francisquito Creek Watershed. Accessed November 7, 2012 from: <http://hcp.stanford.edu/sfcreek.html>

¹⁸ California Department of Water Resources, *California's Groundwater, Update 2003*, Bulletin 118, San Mateo Subbasin, February 27, 2004.

d. Climate

The EA Study Area experiences a coastal Mediterranean climate, which consists of long dry, relatively cool summers and wet, mild winters. The City receives approximately 15.5 inches of rain annually, primarily experienced from the five-month stretch between November and April.¹⁹

2. Water Quality

As previously discussed, the EA Study Area is within the San Francisquito Creek Watershed. More specifically, runoff from development within Menlo Park will eventually discharge to San Francisquito Creek, which ultimately discharges into South San Francisco Bay.

The beneficial uses of the surface water bodies in the EA Study Area have been designated in the Water Quality Control Plan for the San Francisco Bay Region (Basin Plan).²⁰ These potential and beneficial uses are summarized in Table 4.8-1.

TABLE 4.8-1 DESIGNATED BENEFICIAL USES OF WATER BODIES IN MENLO PARK

Water Body	Designated Beneficial Use
Surface Water	
South San Francisco Bay	COMM, EST, IND, MIGR, NAV, RARE, REC-1, REC-2, SHELL, SPWN, WILD
San Francisquito Creek	COLD, MIGR, SPWN, WARM, WILD, REC-1, REC-2
Groundwater	
Santa Clara Valley (San Mateo Subbasin)	MUN, PROC, IND, AGR (potential)

Source: San Francisco RWQCB, 2011. *Water Quality Control Plan for the San Francisco Bay Region.*

The potential and existing beneficial uses are as follows:

- “ AGR – Agricultural Supply
- “ COLD – Cold freshwater habitat

¹⁹ Western Regional Climate Center, Palo Alto, California Monthly Total Precipitation (inches) (046646), www.wrcc.dri.edu, accessed September 29, 2011.

²⁰ San Francisco Bay Area Regional Water Quality Control Board (RWQCB). *Water Quality Control Plan for San Francisco Bay Area*. Accessed January 14, 2013. http://www.waterboards.ca.gov/sanfranciscobay/basin_planning.shtml.

- “ COMM – Commercial and sport fishing
- “ EST – Estuarine habitat
- “ IND – Industrial service supply
- “ MIGR – Fish migration
- “ MUN – Municipal and domestic supply
- “ NAV – Navigation
- “ PROC – Industrial process supply
- “ RARE – Preservation of rare and endangered species
- “ REC-1 – Water contact recreation
- “ REC-2 – Non-contact water recreation
- “ SHELL – Shellfish harvesting
- “ SPWN – Fish spawning
- “ WARM – Warm freshwater habitat
- “ WILD – Wildlife habitat

In accordance with Section 303(d) of the Clean Water Act, the State must present USEPA with a list of impaired water bodies that do not meet water quality standards. Listed impaired water bodies within Menlo Park are presented in Table 4.8-2.

Once a water body has been placed on the 303(d) list of impaired waters, states are required to develop a Total Maximum Daily Load (TMDL) to address each pollutant causing impairment. A TMDL defines how much of a pollutant a water body can tolerate and still meet water quality standards. TMDLs have been approved by USEPA for diazinon in San Francisquito Creek and mercury and PCBs in South San Francisco Bay.

The Basin Plan also contains water quality criteria for groundwater. Menlo Park is within the San Mateo Plain Subbasin of the Santa Clara Valley Groundwater Basin. Groundwater in this subbasin is generally characterized as calcium magnesium calcium carbonate water and the mineral content is very “hard,” averaging 471 mg/l of calcium carbonate.²¹ Some wells have reported concentrations of nitrate-nitrogen that exceed USEPA maximum contaminant levels (MCLs).

²¹ California Department of Water Resources (DWR). *California's Groundwater Bulletin 118, Basins and Subbasins of the San Francisco Bay Hydrologic Region*. Accessed on January 13, 2013 at http://www.water.ca.gov/groundwater/bulletin118/san_francisco_bay.cfm.

TABLE 4.8-2 SECTION 303(D) LIST OF IMPAIRED WATER BODIES IN MENLO PARK

Water Body	Pollutant	Potential Source	Status of TMDL
San Francisquito Creek	Diazinon	Urban runoff/storm sewers	Approved (2007)
	Sedimentation/siltation	Nonpoint source	Planned (2013)
	Trash	Illegal dumping; urban runoff/storm sewers	Planned (2021)
South San Francisco Bay	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 and municipal point sources; resource extraction; atmospheric deposition; natural sources; nonpoint sources	Approved (2008)
	PCBs	Unknown nonpoint sources	Approved (2010)
	Selenium	Domestic use of groundwater	Planned (2019)

Source: State Water Resources Control Board. *2010 Integrated Report, Clean Water Act, Section 303(d) List*, Accessed on January 13, 2013, http://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2010.shtml.

Groundwater contamination can result from releases of hazardous materials from underground storage tanks or historical industrial activities. There are numerous RWQCB or Department of Toxic Substance Control (DTSC) hazardous waste cleanup sites within Menlo Park.²² However, it does not appear that any of the potential housing or infill sites are underlain by contaminated groundwater, as discussed in more detail in Chapter 4.6, Hazards and Hazardous Materials. If groundwater dewatering activities are required

²² State Water Resources Control Board (SWRCB). *Geotracker Database*. Accessed on January 13, 2013 at <http://geotracker.waterboards.ca.gov/>.

as part of the construction efforts, a more detailed assessment of the potential for contaminated groundwater to be present is warranted.

3. Flood Hazards Areas

FEMA prepares maps of the 100-year flood hazard area of U.S. communities. Areas within the 100-year flood hazard area are subject to 100-year flood, which means that in any given year, the risk of flooding in the designated area is 1 percent. Maps are also available for 500-year floods, which mean that in any given year, the risk of flooding in the designated area is 0.2 percent.

In some locations, FEMA also provides a measurement of base flood elevation for the 100-year flood, which is the minimum height of the flood waters during a 100-year event; base flood elevation is reported in feet above sea level. Depth of flooding is determined by subtracting the land's height above sea level from the base flood elevation. Areas within the 100-year flood hazard area that are financed by Federally-backed mortgages are subject to mandatory federal insurance requirements and building standards to reduce flood damage.

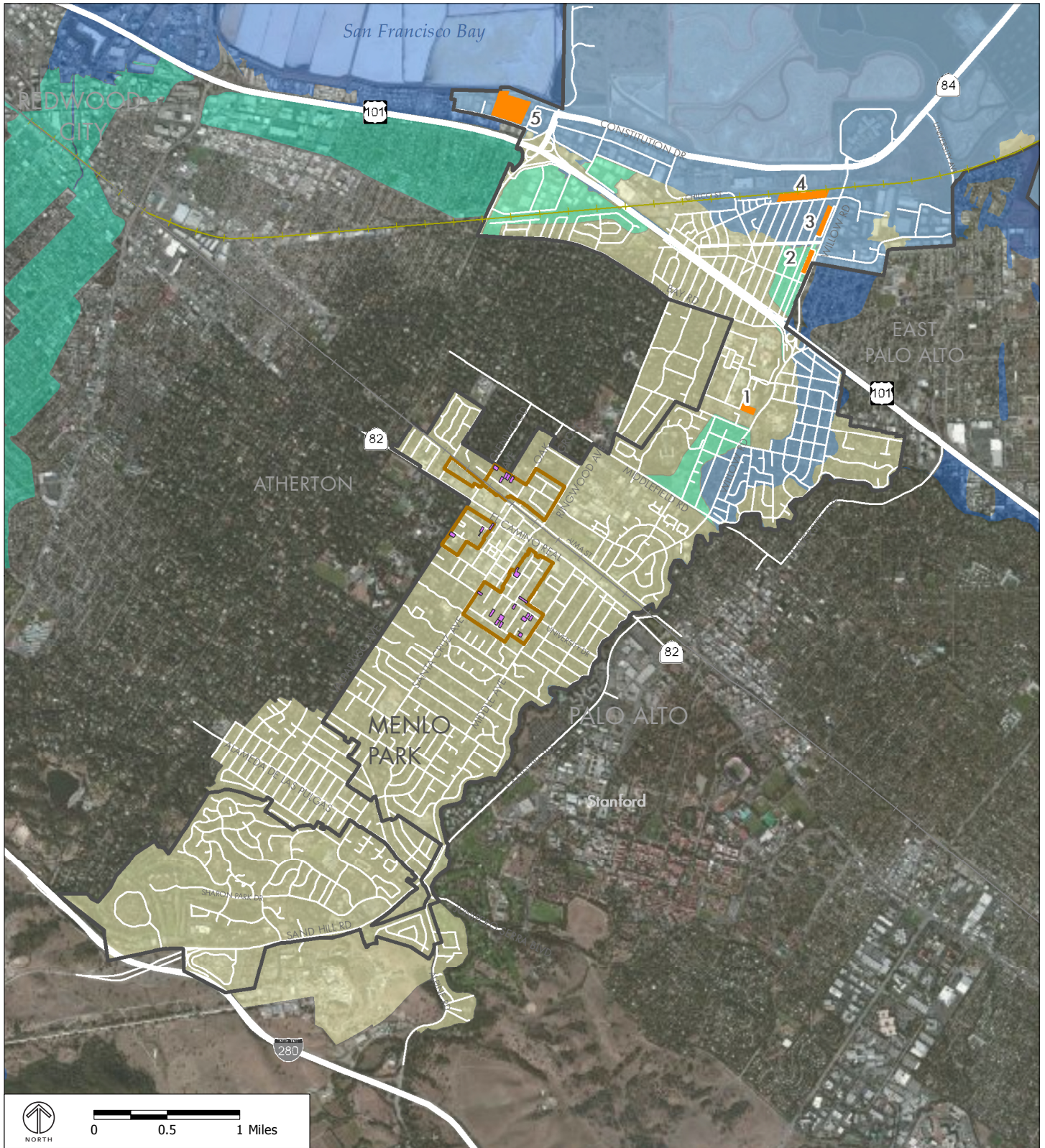
The northernmost portion of Menlo Park, including much of the area between Constitution Drive and Highway 101, is within the 100-year floodplain subject to tidal flooding from San Francisco Bay.²³ In addition, portions of Menlo Park between Middlefield Road and State Route 101 are within the 100-year floodplain due to overflow from San Francisquito Creek.²⁴

There also are three smaller areas of Menlo Park that are subject to 500-year flood hazards. These are areas 1) northwest of San Francisquito Creek between Middlefield Road and Elm Street to approximately 400 feet west of Santa Monica Avenue, 2) south of the State Route 101 and Marsh Road interchange to approximately 450 feet south of the rail line, and 3) the area bounded by Ivy Drive to the north, Willow Road to the east, State Route 101 to the south, and Sevier Avenues to the east.

A map of the locations within Menlo Park that are within the 100-year and 500-year floodplain is shown on Figure 4.8-1. Only three of the potential housing sites are within the Special Flood Hazard Area (SFHA)

²³ Federal Emergency Management Agency (FEMA). Various *FIRM Maps Including 06081C0306E to 06081C309E*. Accessed on January 16, 2013, <http://map1.msc.fema.gov/>.

²⁴ San Francisquito Creek Joint Powers Authority (SFCJPA). *San Francisquito Creek Floodplain Mapping – 100-year Fluvial Flood Inundation Map*. Accessed on January 16, 2013 at http://sfcjpa.ehclients.com/documents/Corps_of_Engineers_100-year_floodplain_map.pdf.



Source: City of Menlo Park; The Planning Center | DC&E 2012; ESRI 2010; FEMA October 2012.

FEMA Special Flood Hazard Areas

- 100 Year Floodplain
- 500 Year Floodplain
- Lots with Additional Housing Unit Potential
- Infill Areas around Downtown

- Potential Sites to be Studied for Rezoning to Higher Density
- City Limits
- Sphere of Influence

FIGURE 4.8-1

FEMA SPECIAL FLOOD HAZARD AREAS

100-year floodplain: housing Sites 3, 4 and 5. Housing Site 2 (MidPen's Gateway Apartments at the 1200 block of Willow Road) is within the 500-year floodplain. Site 1 (Veterans Affairs Campus) is not within a 100-year or 500-year floodplain.

The San Francisquito Creek Joint Powers Authority (SFCJPA) in conjunction with the U.S. Army Corps of Engineers and the Santa Clara Valley Water District, are implementing improvements to provide 100-year flood protection for flood-prone reaches of San Francisquito Creek both upstream and downstream from State Route 101.²⁵ The goal is to eliminate the need for more than 5,400 properties to contribute to the National Flood Insurance Program because of overflows from San Francisquito Creek and San Francisco Bay tides. The SFCJPA is also working with CalTrans to replace the State Route 101 crossing over the creek to improve traffic flow and also increase the creek's capacity to accommodate the 100-year storm event. The construction of this project is scheduled to begin in 2014.²⁶

The first portion of the San Francisquito Creek improvement project, which includes the section from San Francisco Bay to State Route 101, is scheduled to begin later this year; the Final EIR was completed in October 2012. The project will reduce flood risks along a flood-prone reach of the creek downstream of State Route 101 and will reduce flood risks from Bay tides and 50 years of future sea level rise. The following tasks will be completed:²⁷

- Widen the creek to convey a 100-year storm flow, coupled with a 100-year tide and 25 inches of sea level rise.
- Excavate sediment that has built up over several decades and replace it with a marsh plan.
- Remove an abandoned levee to allow high creek flows into the Palo Alto Baylands south of the creek, thus reinstating a natural connection to the Bay for the first time in over 75 years.
- Construct floodwalls aligned to CalTrans' State Route 101 bridge over the creek in the area confined by homes and businesses.

²⁵ San Francisquito Creek Joint Powers Authority. *Projects Overview*. Accessed January 17, 2013 at <http://sfcjpa.org/web/projects/projects-overview/>.

²⁶ San Francisquito Creek Joint Powers Authority. *Projects Overview*. Accessed January 17, 2013 at <http://sfcjpa.org/web/projects/projects-overview/>.

²⁷ San Francisquito Creek Joint Powers Authority. *Projects Overview*. Accessed January 17, 2013 at <http://sfcjpa.org/web/projects/projects-overview/>.

Cities and unincorporated communities in San Mateo County, including Menlo Park, generate runoff that flows into the Bayfront Canal via the Atherton Channel and the six other drainage basins. Historically, flooding has occurred in the neighborhoods near the Bayfront Canal and Atherton Channel, particularly during storms that coincide with high tides.²⁸ This includes the vicinity of potential housing Site 5 (Haven Avenue). As configured as of 2013, the Bayfront Canal and Atherton Channel do not have enough detention capacity to prevent flooding in low lying areas. In addition, during storms that coincide with high tides, the Canal and Channel cannot discharge sufficient stormwater flows to the Bay because of tide gate limitations.

The Bayfront Canal Flood Management and Habitat Restoration Project will route flood flows from the Bayfront Canal and Atherton Channel into two of the managed ponds of the Ravenswood Pond Complex and the South Bay Salt Ponds Restoration project, the largest tidal wetland restoration project on the West Coast. When complete, this project will restore 15,100 acres of industrial salt ponds to tidal wetlands and other habitats and help mitigate the flooding problem.²⁹ High flows from the proposed configuration of the Canal will bypass around the Flood Slough tide gate and be directed into ponds to simultaneously mitigate widespread flooding in the Atherton Channel neighborhood and facilitate the development of a seasonal wetlands habitat. The Bayfront Canal Flood Management and Habitat Restoration Project is projected to be under construction in 2016.³⁰

The City's storm drain system consists of 17 individual systems that serve 17 drainage areas, according to a study conducted in 2003 by BKF Engineers.³¹ The area north of Middlefield Road drains to the Bay through either the Belle Haven Storm Drain system or through the City of East Palo Alto storm drain lines. The area south of Middlefield Road drains to either Atherton Channel on the northwest or San Francisquito Creek on the southeast. Significant portions of the system are not capable of providing

²⁸ Bay Area Integrated Regional Water Management Plan, 2013. Bayfront Canal Flood Management and Habitat Restoration Project. Accessed March 25, 2013 at <http://bairwmp.org/projects/bayfront-canal-flood-management-and-habitat-restoration-project>.

²⁹ Bay Area Integrated Regional Water Management Plan, 2013. Bayfront Canal Flood Management and Habitat Restoration Project. Accessed March 25, 2013 at <http://bairwmp.org/projects/bayfront-canal-flood-management-and-habitat-restoration-project>.

³⁰ City of Redwood City, XX, Stormwater Flood Management Grant Proposal. Accessed March 25, 2013 at http://www.dwr.water.ca.gov/irwm/grants/docs/Archives/Prop1E/Submitted_Applications/P1E_Round1_SWFM/City%20of%20Redwood%20City/Att3_SWF_WorkPlan_1of1.pdf, page 3-10.

³¹ BKF Engineers, 2003. *City-Wide Storm Drainage Study*.

conveyance of a 10-year storm event.³² Common issues include undersized storm drain lines, bubble-up storm drain systems, and areas without storm drains. The City is currently conducting a study evaluating current deficiencies in the storm system design and limited flow capacity along Middlefield Road, and proposing alternatives to reduce flooding.³³

4. Sea Level Rise

California Executive Order S-13-2008 states that all state agencies planning construction projects in areas vulnerable to sea level rise must consider a range of sea level rise scenarios for the years 2050 and 2100 to assess project vulnerability and to the extent feasible, reduce expected risks to sea level rise.³⁴ The Governor of California's Delta Vision Blue Ribbon Task Force adopted a sea level rise of 55 inches by 2100 for planning purposes. However, the San Francisco BCDC in the latest amendment to the Bay Plan (October, 2011), added new climate change findings and policies and has revised the 2100 sea level rise from 55 inches to up to 69 inches.³⁵ The BCDC has jurisdiction to regulate new development within 100 feet inland from the Bay shoreline. The existing BCDC policy is to require all projects within their jurisdiction to be built above the highest estimated tide and wave run up levels for the life of the project.³⁶

Different scenarios and models used to predict sea level rise result in different estimates in the magnitude of sea level rise. Most shoreline damage from flooding will occur as a result of storm activity in combination with higher sea levels. The key factors that contribute to coastal flooding include high tides, storm surge, high waves, and high runoff rates from rivers and creeks.³⁷

³² BKF Engineers, 2003. *City-Wide Storm Drainage Study*.

³³ City of Menlo Park, Public Works Department. *Middlefield Road Storm Drain Study*. Accessed January 17, 2013 at <http://www.menlopark.org/departments/pwk/cip/>.

³⁴ State of California. *Executive Order S-13-08*. Accessed on January 17, 2013 at <http://gov.ca.gov/news.php?id=11036>.

³⁵ San Francisco Bay Conservation and Development Commission (BCDC). *Resolution No. 11-08: Adoption of Bay Plan Amendment Adding New Climate Change Findings and Policies to the Bay Plan*. Accessed on January 17, 2013 at http://www.bcdc.ca.gov/proposed_bay_plan/10-01Resolution.pdf.

³⁶ San Francisco BCDC, 2011. *Living with a Rising Bay: Vulnerability and Adaptation in San Francisco Bay and on its Shoreline*.

³⁷ San Francisco BCDC, 2011. *Living with a Rising Bay: Vulnerability and Adaptation in San Francisco Bay and on its Shoreline*.

The Association of Bay Area Governments (ABAG) has produced a sea level rise scenario map for long range planning.³⁸ Figure 4.8-2 shows the projected sea level rise for the City of Menlo Park. The map indicates that four of the housing sites (Sites 2, 3, 4 and 5) are within the area vulnerable to a projected sea level rise of 55 inches. The impacted area extends just south of Ivy Drive.

5. Dam Failure Inundation

Several reservoirs in the area present the remote risk of downstream inundation in the event of a dam failure as the result of an earthquake or other catastrophic event. The California Emergency Management Agency has directed dam operators to delineate areas likely to be inundated in the event of a catastrophic dam failure.³⁹ According to the ABAG online dam failure inundation maps, portions of Menlo Park are within the Searsville and Searsville/Felt dam inundation zones.⁴⁰ Figure 4.8-3 shows the dam inundation zones from these dams. A small portion of one of the infill areas around downtown are on the edge of the dam inundation zone; none of the potential housing sites are within the dam inundation zones.

6. Seiche, Tsunami, and Mudflows

A tsunami is a large tidal wave generated by an earthquake, landslide, or volcanic eruption. Seiches are waves that oscillate in enclosed water bodies, such as reservoirs, lakes, ponds, or semi-enclosed bodies of water such as San Francisco Bay. Seiches may be triggered by moderate or large submarine earthquakes, or sometimes by large onshore earthquakes.

According to the CalEMA tsunami inundation map for emergency planning, Redwood Point Quadrangle, only the most northern portion of Menlo Park that consists mainly of sloughs and undeveloped land is within the tsunami inundation zone.⁴¹ As shown on Figure 4.8-4, all of the potential housing sites and infill areas around downtown are outside of the tsunami inundation zone.

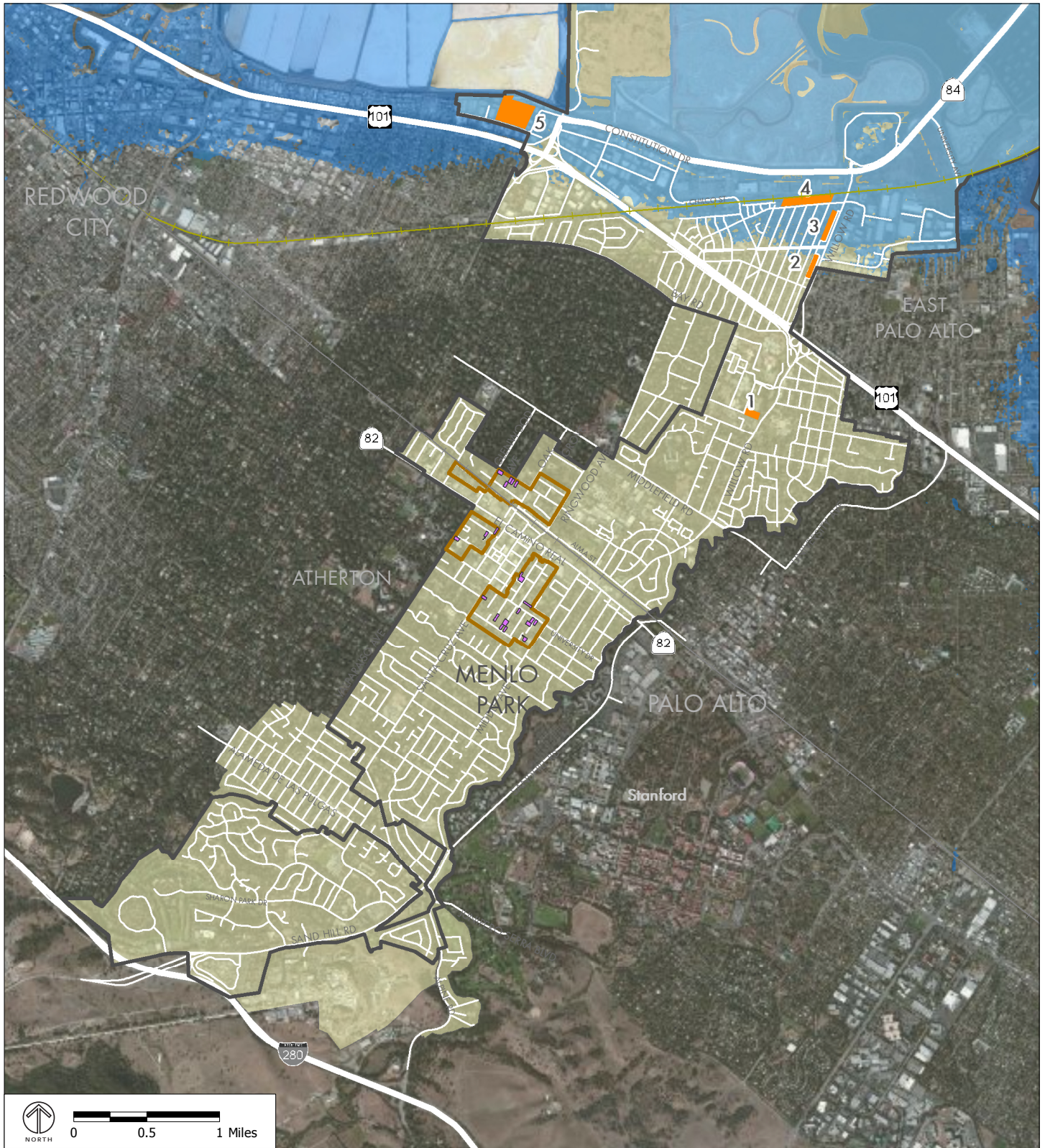
³⁸ Association of Bay Area Governments (ABAG). *Sea Level Rise Scenario Map for Long Range Planning*. Accessed for January 17, 2013 at <http://quake.abag.ca.gov/searise/>.

³⁹ California Emergency Management Agency (CalEMA). *Dam Inundation Mapping Regulations*. Accessed on January 17, 2013 at <http://www.calema.ca.gov/hazardmitigation/pages/dam-inundation-program.aspx>.

⁴⁰ Association of Bay Area Governments (ABAG). *Dam Failure Inundation Maps*. Accessed on January 17, 2013 at <http://quake.abag.ca.gov/dam-failure/>.

⁴¹ CalEMA, 2009. *Tsunami Inundation Map for Emergency Planning, State of California – County of San Mateo, Redwood Point Quadrangle, Palo Alto Quadrangle*.

CITY OF MENLO PARK
 HOUSING ELEMENT UPDATE, GENERAL PLAN CONSISTENCY UPDATE, AND
 ZONING AMENDMENTS
 HYDROLOGY AND WATER QUALITY

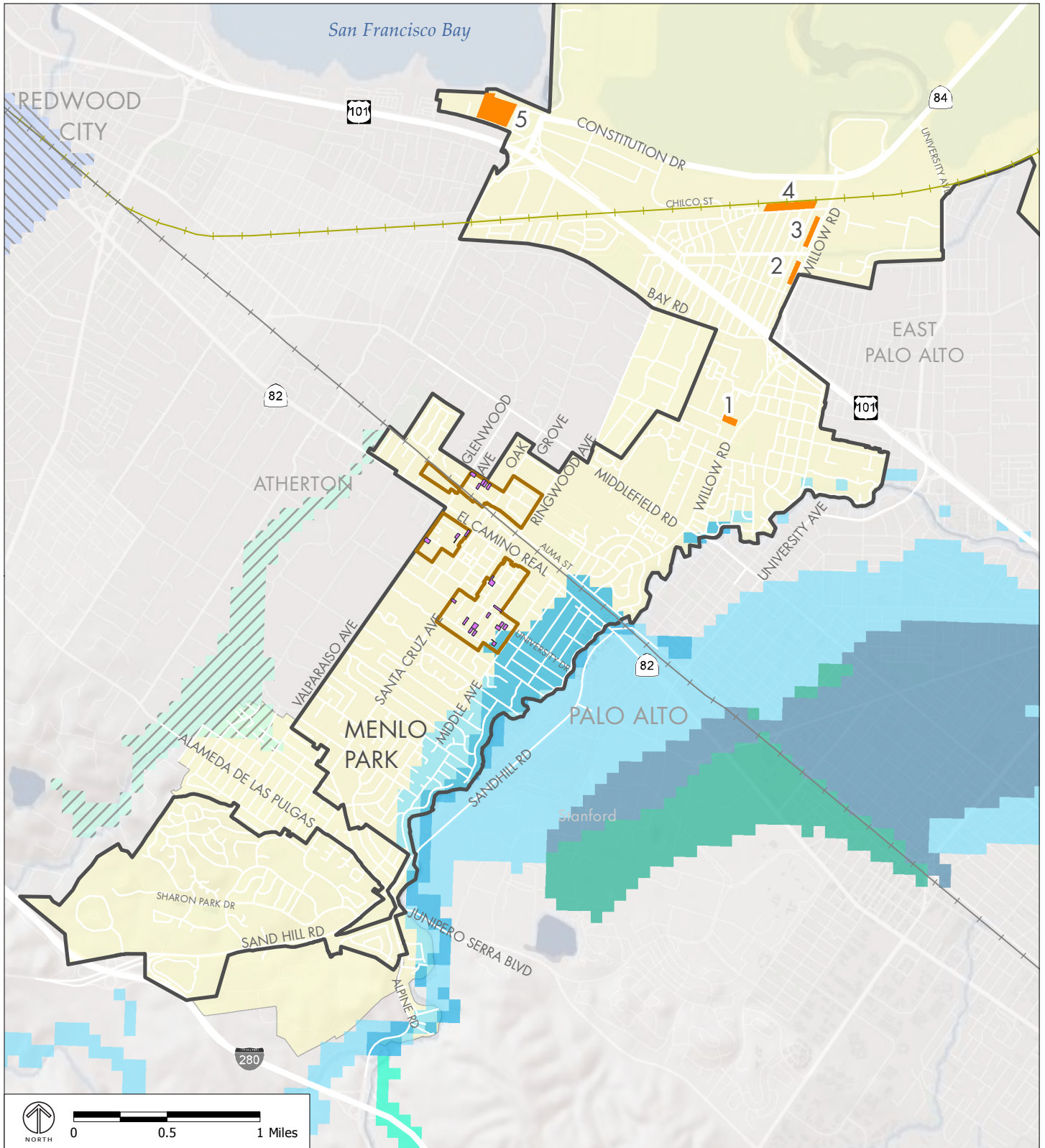


Source: City of Menlo Park; The Planning Center | DC&E 2012; ESRI 2010; USGS 2010.

- Area Potentially Exposed to an Approximate 55-inch Sea Level Rise
- Lots with Additional Housing Unit Potential
- Infill Areas around Downtown

- Potential Sites to be Studied for Rezoning to Higher Density
- City Limits
- Sphere of Influence

FIGURE 4.8-2
 SEA LEVEL RISE



Source: City of Menlo Park; The Planning Center | DC&E 2012; ESRI 2010; ABAG 1995.

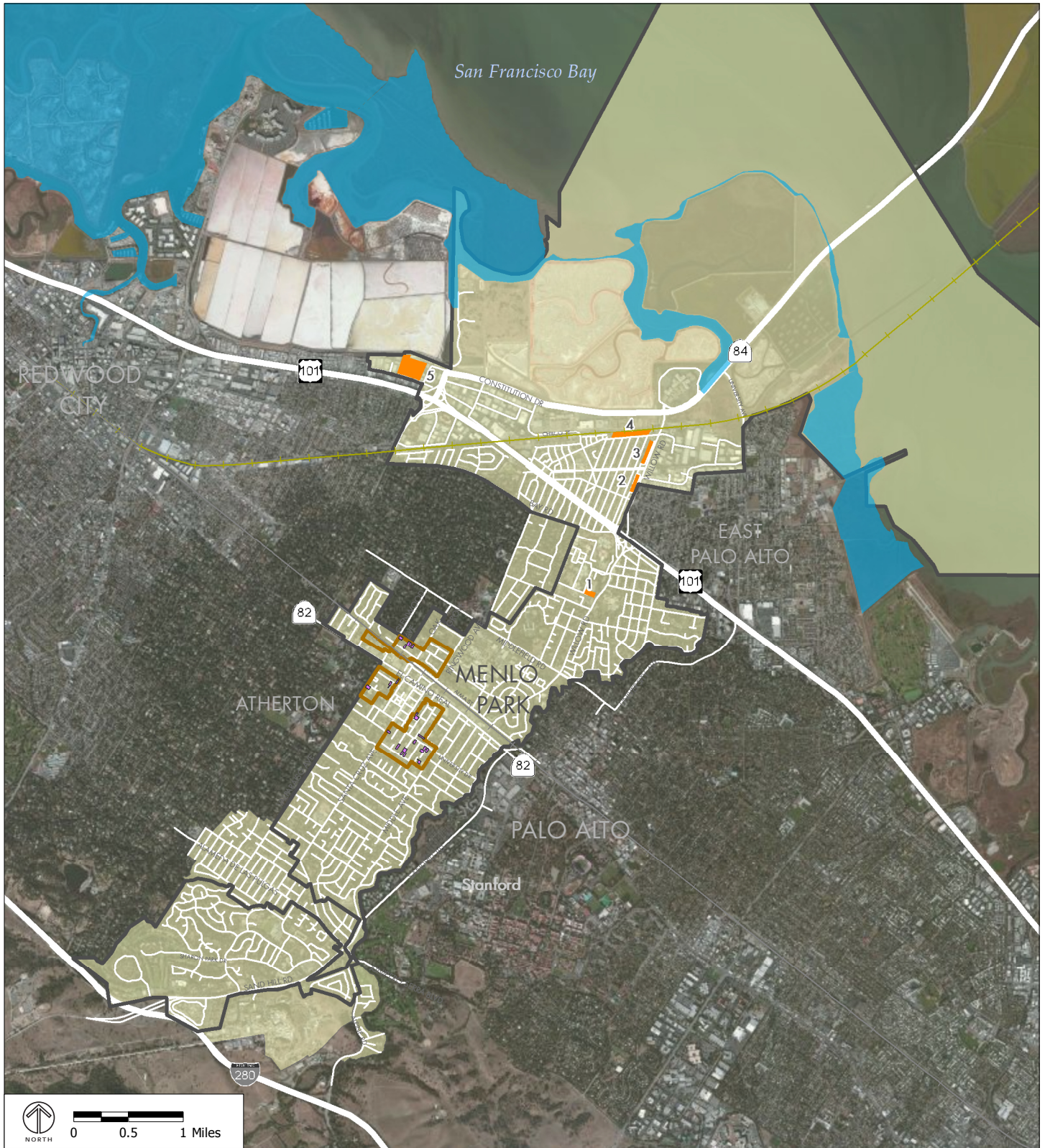
Dam Failure Inundation Areas

- BEAR GULCH
- FELT
- LAGUNITA
- LOWER EMERALD
- SEARSVILLE
- SEARSVILLE / FELT
- SEARSVILLE / LAGUNITA

- Lots with Additional Housing Unit Potential
- Potential Sites to be Studied for Rezoning to Higher Density
- Infill Areas around Downtown
- City Limits
- Sphere of Influence

FIGURE 4.8-3

DAM FAILURE INUNDATION ZONES



Source: City of Menlo Park; The Planning Center | DC&E 2012; ESRI 2010; CalEMA, CCGS, USC 2009.

- Tsunami Inundation Zone
- Potential Sites to be Studied for Rezoning to Higher Density
- Lots with Additional Housing Unit Potential
- City Limits
- Infill Areas around Downtown
- Sphere of Influence

FIGURE 4.8-4

TSUNAMI INUNDATION ZONE

Because there are no large bodies of water, such as reservoirs or lakes, within Menlo Park and only a very small portion of the City is within the tsunami inundation zone, there is no risk of seiches impacting the City or potential housing sites.

Mud and debris flows are mass movements of dirt and debris that occur after intense rainfall, earthquakes, and severe wildfires. The speed of a slide depends on the amount of precipitation, steepness of the slope, and alternate freezing and thawing of the ground. The majority of Menlo Park is relatively flat and the City is outside of the impacted zones for earthquake-induced landslides or rainfall-induced landslides.⁴² Therefore, there is no expectation of mudflows or debris slides to occur within Menlo Park or the potential housing/infill sites.

C. Standards of Significance

The Plan Components would have a significant impact with regard to hydrology if they would:

1. Violate any water quality standards or discharge requirements.
2. 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).
3. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the amount of surface runoff in a manner which would result in substantial erosion, siltation, or flooding on- or off-site.
4. 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.
5. Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map, or place within a 100-year flood hazard area structures which would impede or redirect flood flows.

⁴² Association of Bay Area Governments (ABAG). *Landslide Maps and Information: Earthquake Induced Landslides and Rainfall Induced Landslides*. Accessed on January 17, 2013 at <http://quake.abag.ca.gov/landslides/>.

6. Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of a levee or dam.
7. Expose people or structures to a significant risk of inundation by seiche, tsunami, or mudflow.

D. Impact Discussion

1. Violate any water quality standards or discharge requirements.

Development or redevelopment that is planned as part of the Plan Components could affect drainage patterns and increase the overall amount of impervious surfaces, thus creating changes to stormwater flows and water quality. Increasing the total area of impervious surfaces can result in a greater potential to introduce pollutants to receiving waters. Urban runoff can carry a variety of pollutants, such as oil and grease, metals, sediments, and pesticide residues from roadways, parking lots, rooftops, landscaped areas and deposit them into an adjacent waterway via the storm drain system. New construction could also result in the degradation of water quality with the clearing and grading of sites, releasing sediment, oil and greases, and other chemicals to nearby water bodies. However, future housing permitted by the Plan Components will be located on underutilized, infill sites, all of which have already been developed and currently have a high percentage of impervious surfaces.

Water quality in stormwater runoff is regulated locally by the San Mateo Countywide Water Pollution Prevention Program (SMCWPPP), which include the C.3 provisions set by the San Francisco Bay RWQCB. Adherence to these regulations requires new development or redevelopment projects to incorporate treatment measures, an agreement to maintain them, and other appropriate source control and site design features that reduce pollutants in runoff to the maximum extent practicable. Many of the requirements consider Low Impact Development (LID) practices such as the use of onsite infiltration through landscaping and vegetated swales that reduce pollutant loading. Incorporation of these measures can even improve on existing conditions.

In addition, the potential housing will be required to comply with the NPDES Permit and implementation of the construction SWPPP that require the incorporation of BMPs to control sedimentation, erosion, and hazardous materials contamination of runoff during construction. Additionally, the City of Menlo Park Public Works Department requires development or redevelopment projects that replace or introduce more than 10,000 square feet of impervious surfaces to prepare a Hydrology Report that requires site design

measures to maximize pervious areas, source control measures to keep pollutants out of stormwater, use of construction BMPs, and post construction treatment measures.

The following goals and policies would ensure potential impacts to water quality would not occur with the implementation of the potential future development.

a. Current General Plan Land Use and Circulation Element

- “ 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-A-3: Quality design and usable open space shall be encouraged in the design of all new residential developments.

While the Plan Components do promote new construction of housing units to meet the projected housing demand, it does not contain any policies that would directly or indirectly result in violations of water quality standards. Therefore, implementation of the Plan Component would have a *less-than-significant* impact on water quality.

2. 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).

Future residential development would result in an increase in impervious surfaces and the potential diversion of groundwater to surface water if short-term construction dewatering is required. Some areas of the EA Study Area have groundwater levels of only 5 to 10 feet below ground surface (bgs). These activities would result in a decrease in groundwater recharge to the San Mateo Groundwater Subbasin for which beneficial uses have been established by the San Francisco Bay Basin Plan.

However, the housing sites are very small in size relative to the size of the San Francisquito Creek Watershed and the San Mateo Groundwater Subbasin. In addition, implementation of low impact development (LID) guidelines that promote the use of permeable paving materials and on-site infiltration will increase the potential for groundwater recharge. Most of the water that supplies the EA Study Area is

obtained from the San Francisco Public Utilities Commission (SFPUC) stored in the Hetch-Hetchy Reservoir, which is surface water. Only a small amount of connections are served with local groundwater by the O'Connor Tract Co-operative Water Company that services parts of Menlo Park and East Palo Alto.

The use of site design features required by the SMCWPPP and the City of Menlo Park such as vegetated swales and landscaping will reduce the impact of increased impervious surfaces on groundwater recharge. Therefore, implementation of the Plan Components will have a *less-than-significant* impact with respect to groundwater supplies or groundwater recharge.

3. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the amount of surface runoff in a manner which would result in substantial erosion, siltation, or flooding on- or off-site.

New construction would involve construction and grading activities that may alter existing drainage patterns or could result in erosion or downstream sedimentation. However, none of the future development would require alteration of the course of an existing stream or river and the parcels are not located in Stream Conservation Areas (SCAs). Most of the future development sites are already developed or paved and new development on these sites would not create a substantial increase in the amount of impervious surfaces.

The new development or redevelopment that is planned for as part of the Plan Components would be subject to the NPDES construction permit requirements, including preparation of a SWPPP. In addition, the City's Municipal Code (Chapter 7.42, Storm Water Management Program), which requires preparation of a Grading and Drainage Plan and incorporation of erosion and sediment controls during construction, will further reduce the potential for substantial erosion or siltation and will ensure that runoff from the site is protective of the beneficial uses of receiving waters. Once constructed, the requirements for new development or redevelopment will include source control measures and site design measures that address stormwater runoff and would reduce the potential for erosion or siltation.

Changes in existing drainage patterns could increase the rate and/or amount of stormwater runoff, contributing to on-site or off-site flooding. However, the City of Menlo Park requires that runoff rates after project completion shall not exceed pre-project levels. Any increase in peak flow rates shall be handled on-site by retention to treat excess flow for the 10-year storm event. Any retained on-site stormwater would eventually be routed to existing storm drains. The Grading and Drainage Plans for each project would be reviewed by the City to ensure that on-site drainage, LID features, and retention basins are

adequate to prevent on-site or off-site flooding. As a result of implementation of these measures, the Plan Components would have a *less-than-significant* impact with respect to on-site or off-site erosion or flooding.

4. 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.

As discussed previously under Section D.3, an increase in impervious surfaces with development of the housing sites could result in an increase in stormwater runoff which could exceed the capacity of existing or planned stormwater drainage systems. Under existing conditions, portions of the City's storm drainage systems are not capable of containing the runoff from 10-year storm events.⁴³

However, each of the housing sites involve parcels that have been developed and are already covered with a significant percentage of impervious surfaces. Therefore, post-development runoff rates should not be significantly different than pre-development rates. In addition, implementation of LID design guidelines and engineering review of drainage calculations and development plans by the Menlo Park Public Works Department would ensure that there are no significant increases in peak flow rates or runoff volumes. The City requires detention of stormwater runoff such that discharges do not exceed existing flow rates.

Development consistent with the Plan Components would not require significant expansions of the existing stormwater drainage infrastructure, because the majority of sites would be either infill projects or would be located within existing storm drainage systems. Because the City requires no net increase in stormwater flow rates, impacts associated with future development runoff would be *less than significant*.

5. Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map, or place within a 100-year flood hazard area structures which would impede or redirect flood flows.

Implementation of the Plan Components could result in the development of residential structures in existing FEMA-designated 100-year Special Flood Hazard Areas (SFHAs) or future zones of tidal inundation resulting from predicted mid-century sea level rise. As shown on Figure 4.8-1, the Plan Components would place future housing within the SFHA. The City of Menlo Park and San Mateo County have adopted local standards for construction in floodplain areas.⁴⁴

⁴³ BKF Engineers, 2003. *City-Wide Storm Drainage Study, City of Menlo Park*.

⁴⁴ City of Menlo Park, Municipal Code Chapter 12.42, Flood Damage Prevention.

Future development within the 100-year flood zone would require the placement of fill to elevate structures above the 100-year floodplain elevation. In order for the future development to be considered outside of the floodplain and no longer subject to special flood hazard requirements, the applicant would have to submit an application to FEMA for a Letter of Map Revision – Fill (LOMR-F) after the fill has been placed. After FEMA has revised the FIRM to show that the future development is now outside of the SFHA, the City would no longer be required to apply the minimum NFIP floodplain management standards to structures built on the land and the mandatory flood insurance requirements would no longer apply. However, as part of its floodplain management strategy, to reduce possible loss of life and property in the event of a flood, the City would encourage compliance with as many of the standards as financially feasible.

Construction within SFHAs is governed by the City’s Municipal Code Chapter 12, Section 12.42.51, Standards of Construction, which sets forth standards for development that would minimize flood hazard risks, including anchoring and flood-proofing; limitations on use for structures below the base flood elevation; use of materials and utility equipment resistant to flood damage; the requirement that electrical, heating, ventilation, plumbing, and air conditioning equipment and other service facilities be designed and/or located to prevent water from entering or accumulating within the components during flood conditions; and the requirement that all new and replacement water supply and sanitary sewage systems be designed to minimize or eliminate infiltration of floodwaters into the system and discharge from systems into floodwaters. Compliance with these City Municipal Code requirements would reduce potential flood hazards to *less-than-significant* levels.

As noted in Section B.4, BCDC published sea level rise inundation maps for low-lying areas within San Francisco Bay. Four of the five potential housing Sites (2, 3, 4, and 5) are within the area vulnerable to a projected sea level rise of 55 inches, which is expected to occur by the year 2100. These tidal inundation predictions by BCDC relate to tidal flooding and storm surge, but do not incorporate coincident watershed flooding, which would increase flood hazards in areas affected by sea level rise and increases in tide levels. The individual and collective responses of Bay Area counties and municipalities to this flooding potential are in the early stages of development. However, the City of Menlo Park and San Mateo County are in the process of implementing policies and programs to adapt to the changing climate and to utilize estimates of sea level rise and incorporate data into mapping of areas subject to future inundation.

The following General Plan policies and programs would further reduce potential impacts due to flooding to a *less-than-significant* level.

a. Current General Plan Land Use and Circulation Element

- “ 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 in full compliance with standards established by the Federal Emergency Management Agency.

b. Amended General Plan Seismic Safety and Safety Element

- “ Policy S-1.5: New Habitable Structures. Require that all new habitable structures to incorporate adequate hazard mitigation measures to reduce identified risks from natural and human-caused hazards.
- “ Policy S-1.22: Flood Damage Prevention. Apply standards for any construction projects (new structures and existing structures proposed for substantial improvement) in areas of special flood hazard in accordance with FEMA and the Flood Damage Prevention Ordinance, including the use of flood-resistant construction materials and construction methods that minimize flood damage. Locate new essential public facilities outside of flood zones, such as City operations facilities, police and fire stations, and hospitals, to the extent feasible.
- “ Policy S-1.28: Sea Level Rise. Consider sea level rise in siting new facilities or residences within potentially affected areas.

6. Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of a levee or dam.

According to mapping compiled by ABAG, portions of Menlo Park are within the Searsville and Felt Dam inundation zones. As shown on Figure 4.8-3, a small portion of one of the infill areas around downtown is within the Searsville/Felt dam inundation zone. However, none of the potential housing sites are within the dam inundation zone. Dam inundation zones are based on the highly unlikely scenario of a total catastrophic dam failure occurring in a very short period of time. Existing state and local regulations address the potential for flood hazards as a result of dam failure. The Searsville and Felt dams are under the jurisdiction of the California Department of Water Resources, Division of Safety of Dams (DSOD), which conducts annual inspections and reviews all aspects of dam safety.

The inundation maps for the Searsville and Felt Dams were prepared in 1974.⁴⁵ Therefore, the currently mapped inundation zones may no longer be valid. The Searsville Dam has lost over 90 percent of its

⁴⁵ Stanford University, 1974. *Guide to the Flood (inundation) Studies for Searsville, Lagunita, and Felt Dams. SCM0331.*

original water storage capacity due to sedimentation and there are current proposals for its removal.⁴⁶ In addition, the following General Plan policies and programs would further reduce potential impacts due to dam inundation to a *less-than-significant* level.

a. Amended General Plan Seismic Safety and Safety Element

- “ Policy S-1.23: Potential Dam Inundation. Consider potential risks from dam inundation in the development approval process.
- “ Policy S-1.24: Dam Safety. Support programs by the California Division of Safety of Dams to retrofit or replace dams or to increase earthquake resistance of dams and mitigate impacts of dam failures. State efforts to inspect dams and evaluate dam safety requirements shall also be supported.
- “ Program S-1.L: Evaluate New Community Facilities Proposed in Dam Inundation Zones. Require that new community facilities located within dam inundation zones evaluate the potential for flooding and the impact on evacuation during the development approval process.

While none of the potential housing sites are within the dam inundation zone, as noted above a small portion of one of the infill areas around downtown is within the Searsville/Felt dam inundation zone and second units could be included in this zone; however, both of these locations would be developed on sites with existing housing. Nonetheless, the unlikely nature of dam failure, the regulatory oversight by the DSOD, and City policies to address the impact of flooding from dam inundation during the development process, the impact of flooding as a result of the failure of a dam or levee is considered to be *less than significant*.

7. Expose people or structures to a significant risk of inundation by seiche, tsunami, or mudflow.

According to the CalEMA tsunami inundation map for emergency planning, Redwood Point Quadrangle, only the most northern portion of Menlo Park that consists mainly of sloughs and undeveloped land, is within the tsunami inundation zone.⁴⁷ As shown on Figure 4.8-4, all of the potential housing sites and infill areas are outside of the tsunami inundation zone. Because there are no large bodies of water, such as reservoirs or lakes, within Menlo Park and only a very small portion of the City is within the tsunami inundation zone, there is no risk of tsunamis or seiches impacting the potential housing sites. In addition,

⁴⁶ Stanford University, 2007. *Searsville Lake: Position of the Jaspur Ridge Advisory Committee. – October 2007.*

⁴⁷ CalEMA, 2009. *Tsunami Inundation Map for Emergency Planning, State of California – County of San Mateo, Redwood Point Quadrangle, Palo Alto Quadrangle.*

the City is outside of the impacted zones for earthquake-induced landslides or rainfall-induced landslides.⁴⁸ Therefore, there is no expectation of mudflows or debris slides to occur within Menlo Park or at the potential housing sites. In addition, the following General Plan policies and programs would further reduce potential impacts due to tsunamis to a *less-than-significant* level.

a. Amended General Plan Seismic Safety and Safety Element

- “ Policy S-1.21: Flood and Tsunami Hazard Planning and Mapping. Consider the threat of flooding and tsunamis in planning and management practices to minimize risk to life, environment and property and maintain up-to-date tsunami hazard zones maps and flood maps as new information is provided by FEMA and other regional agencies. Modify land use plans in areas where tsunamis and flooding are hazards, and permit only uses that will sustain acceptable levels of damage and not endanger human lives in the event of inundation
- “ Policy S-1.28: Sea Level Rise. Consider sea level rise in siting new facilities or residences within potentially affected areas.

8. Cumulative Impacts

The geographic context used for the cumulative assessment of water quality and hydrology impacts is the San Francisquito Creek Watershed, which encompasses the entire EA Study Area. Cumulative impacts can occur when impacts that are significant or less than significant from a proposed project combine with similar impacts from other past, present, or reasonably foreseeable projects in a similar geographic area.

As discussed previously, the development of housing sites under the Plan Components would require conformance with State and local policies that would reduce hydrology and water quality impacts to *less-than-significant* levels. When applicable, any additional new development within the City would be subject, on a project-by-project basis, to independent CEQA review as well as policies in the Menlo Park General Plan, design guidelines, zoning codes, and other applicable City requirements that reduce impacts related to hydrology and water quality. More specifically, potential changes related to stormwater quality, stormwater flows, drainage, impervious surfaces, and flooding would be minimized via the implementation of stormwater control measures, retention, infiltration, and LID measures, and review by the City's Public Works Department to integrate measures to reduce potential flooding impacts.

⁴⁸ Association of Bay Area Governments (ABAG). *Landslide Maps and Information: Earthquake Induced Landslides and Rainfall Induced Landslides*. Accessed on January 17, 2013 at <http://quake.abag.ca.gov/landslides/>.

All cumulative projects would be subject to similar permit requirements and would be required to comply with City ordinances and General Plan policies, as well as numerous water quality regulations that control construction related and operational discharge of pollutants in stormwater. The water quality regulations implemented by the San Francisco Bay RWQCB take a basin-wide approach and consider water quality impairment in a regional context. For example, the NPDES Construction Permit ties receiving water limitations and basin plan objectives to terms and conditions of the permit, and the MS4 Permit works with all municipalities to manage stormwater systems to be collectively protective of water quality. For these reasons, impacts of residential development under the Plan Components on hydrology and water quality are not cumulatively considerable and the cumulative impact would be *less than significant*.

E. Impacts and Mitigation Measures

The future development under the Plan Components would not result in any significant hydrology or water quality impacts; therefore, no mitigation measures are necessary.

4.9 LAND USE AND PLANNING

This chapter describes the existing land use character of the EA Study Area and evaluates the potential land use and policy consistency impacts of future development that could occur by adopting and implementing the Housing Element Update, General Plan Consistency Update, and associated Zoning Ordinances amendments, together referred to as the “Plan Components.” A summary of the relevant regulatory setting and existing conditions is followed by a discussion of Plan Component impacts and cumulative impacts.

A. Regulatory Framework

1. Regional Agencies, Regulations, and Plans

This section describes regional agencies, regulations, and plans that pertain to land use in Menlo Park.

a. ABAG Sustainable Communities Strategy

The Association of Bay Area Governments (ABAG) and the Metropolitan Transportation Commission (MTC), in coordination with the Bay Area Air Quality Management District (BAAQMD) and the Bay Conservation and Development Commission (BCDC), have been given the joint responsibility for creating the Sustainable Communities Strategy (SCS) for the nine-county Bay Area region. Each of the agencies involved in the SCS has a different role in regional governance. ABAG primarily deals with regional land use, housing, environmental quality, and economic development issues, while MTC is tasked with regional transportation planning, coordinating, and financing. BAAQMD is responsible for regional air pollution regulation. BCDC is focused on preserving, enhancing, and ensuring the responsible use of the San Francisco Bay.

These agencies jointly created the SCS for the Bay Area, entitled the *Plan Bay Area*. The proposed SCS will forecast a land use pattern, which when integrated with the transportation system, would reduce greenhouse gas (GHG) emissions from automobiles and light trucks, and is measured against a regional GHG emissions reduction target established by the California Air Resources Board (CARB).

The SCS is a land use strategy required to be included as part of the Bay Area’s 25-year Regional Transportation Plan (RTP). By federal law, the RTP must be internally consistent. Therefore, the more than \$200 billion dollars of transportation investment typically included in the RTP must align with and support the SCS land use pattern. State law also requires that the updated eight-year regional housing need allocation

(RHNA) prepared by ABAG is consistent with the SCS. The SCS and RTP are anticipated for adoption (simultaneously) by June 2013. The goals of the SCS are to:¹

- “ Recognize and support compact walkable places where residents and workers have access to services and amenities to meet their day-to-day needs.
- “ Reduce long commutes, increase energy independence, and decrease the region’s carbon consumption.
- “ Support complete communities which remain livable and affordable for all segments of the population, maintaining the Bay Area as an attractive place to reside, start, or continue a business, and create jobs.
- “ Support a sustainable transportation system and reduce the need for expensive highway and transit expansions, freeing up resources for other more productive public investments.
- “ Provide increased accessibility and affordability to the Bay Area’s most vulnerable populations.
- “ Conserve water and decrease the Bay Area’s dependence on imported food stocks and their high transport costs.

While the SCS does not directly govern land uses within Menlo Park, there are a number of benefits available to the City from being consistent with this plan, including: streamlining of CEQA pursuant to Senate Bill (SB) 375, the Sustainable Communities and Climate Protection Act of 2008, for applicable transit priority and residential or mixed-use projects, as well as high eligibility for transportation funding, provided that policies and land use patterns proposed in the General Plan align with the goals of the SCS.

The preferred land use scenario for the SCS was released in May 2012. The land use scenario, titled the *Jobs-Housing Connection Strategy*, identifies Priority Development Areas (PDAs) throughout the Bay Area. PDAs are areas considered to be appropriate for new development because they are located in proximity to transit. PDAs are nominated by local jurisdictions, and the local municipality maintains land use control over PDAs within its jurisdiction. The Jobs-Housing Connection Scenario identifies one potential PDA in Menlo Park: the El Camino Real Corridor and Downtown PDA, which is classified as a Transit Town Cen-

¹ Association of Bay Area Governments, 2012, *Proposed Budget and Work Program, Fiscal Year 2012-2013*, <http://www.abag.ca.gov/abag/overview/workplan/ABAGBdgtWrkPrmProposed2012.pdf>, accessed on October 29, 2012.

ter with the El Camino Corridor separately classified as a multi-city Mixed-Use Corridor.² To read more about *Plan Bay Area: Jobs-Housing Connection Scenario*, go to www.OneBayArea.Org.

b. Bay Area Regional Smart Growth Strategy/Regional Livability Footprint Project

In 2000, five San Francisco Bay Area regional agencies and the Bay Area Alliance for Sustainable Communities collaborated to develop a smart growth land use vision for the Bay Area through an extensive public participation process. The five regional agencies included ABAG, MTC, BAAQMD, BCDC, and the Regional Water Quality Control Board (RWQCB).

The Bay Area Regional Smart Growth Strategy and Regional Livability Footprint Project outlines regulatory changes and incentives that would be needed to implement this vision and provide 20-year land use and transportation projections based on the likely impact of these changes and incentives. The regulatory land use changes and incentives recommended by the project include:³

- “ Providing incentives to promote affordable housing development, including allowing higher densities than would otherwise be permitted, expediting the permitting process, and relaxing zoning standards.
- “ Requiring that the existing affordable housing stock be maintained.
- “ Creating programs so that employees can live in the communities where they work.
- “ Providing incentives for infill development to protect open space and agricultural lands.
- “ Encouraging new jobs and housing near transit and mixed-use, compact, transit-oriented development (TOD).

2. Local Regulations

a. Land Use Planning in Menlo Park

Land use planning in Menlo Park is guided by the current adopted General Plan. The seven State mandated General Plan Elements (Land Use, Circulation, Conservation, Housing, Open Space, Noise, and Safety) were combined into five Elements under the City’s General Plan as follows:

- “ Land Use and Circulation (adopted 1994, with amendments through 2012)
- “ Housing Element (adopted 1992)

² Association of Bay Area Governments, 2012, *Jobs-Housing Connection Strategy: Visions for Priority Development Areas*, http://www.onebayarea.org/pdf/JHCS/PDA_Narratives.pdf, pages 36 and 37, accessed on October 29, 2012.

³ Association of Bay Area Governments, 2002, *Smart Growth Strategy/Regional Livability Footprint Project: Shaping the Future of the Nine-County Bay Area. Final Report*, pages 14 to 18.

- “ Noise Element (adopted 1978)
- “ Seismic Safety and Safety Element (adopted 1976)
- “ Open Space and Conservation Element (adopted 1973)

The General Plan is implemented in part by the City’s Zoning Ordinance, which consists of a written Zoning Ordinance and a Zoning Map. Land use planning is also guided by the El Camino Real/Downtown Specific Plan, which came into effect on July 12, 2012 and establishes a framework for future development and improvements along the El Camino Real corridor, in the Caltrain station area, and in downtown Menlo Park. The El Camino Real/Downtown Specific Plan implements the General Plan, but also provides more specific policy direction for the Specific Plan Area that supersedes sections of the General Plan and Zoning Ordinance.

While many of the goals and policies in the City’s General Plan are germane to current conditions, all but the Land Use and Circulation Element are outdated and do not comply with current State law requirements, which have been updated multiple times over the past 35 to 40 years. Therefore, updates to these elements are required in order to be consistent with the Housing Element and current State law. The City is currently planning the process for a Comprehensive Update of the General Plan, which is scheduled to commence in Fiscal Year 2013-14 based on the City’s 5-Year Capital Improvements Plan. This would involve multiple phases including data gathering, visioning, and the preparation of an Environmental Impact Report, a Fiscal Impact Analysis, and a Greenhouse Gas Reduction Strategy.⁴

b. Menlo Park Zoning Ordinance

The City of Menlo Park Zoning Ordinance is the mechanism used to implement the goals, objectives, and policies of the General Plan and to regulate all land use within the City. Title 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.”

⁴ Menlo Park City Council Staff Report #12-199, December 11, 2012.

c. County of San Mateo Health Services Agency Environmental Health Division

The County's Environmental Health Division provides services to ensure a safe and healthy environment in San Mateo County through education, monitoring, and enforcement of regulatory programs and services for the community. Their services include restaurant and housing inspection, household hazardous waste and medical waste disposal, water protection and water quality monitoring, pollution prevention, and other regulatory activities and services. The County's Health Division conducts inspections, surveillances, or monitoring, prepare land use covenants or other purposes to protect the present and future public health and safety and the environment as provided in Chapter 6.5 and 6.8 of the California Health and Safety Code and Chapter 4 of Division 7 of the Water Code.

d. Airport Land Use Compatibility Plans

Menlo Park is located approximately two miles from Palo Alto Airport, but no portions of the City are within the airport safety zones established by the Plan.⁵ Menlo Park is located more than two miles from the San Francisco International and San Carlos Airports to the north and Moffett Federal Airfield to the south.

e. Habitat Conservation Plan

There are no adopted Habitat Conservation Plans (HCPs) or Natural Community Conservation Plans within the EA Study Area. At the time of writing this EA, Stanford University is preparing an HCP that has not yet been adopted. The Final Environmental Impact Statement for the Stanford HCP has been published and HCP implementation is scheduled for Spring 2013.⁶ Portions of the EA Study Area are included in the Stanford HCP area; however, no potential housing sites are within its boundaries and would not be subject to the standards set forth in the Stanford HCP.

B. Existing Conditions

This section describes the land use designations in the Menlo Park General Plan (the City's existing General Plan) which would be updated and replaced by amending the General Plan.

⁵ Santa Clara County Airport Land Use Commission, 2008, Palo Alto Airport Comprehensive Land Use Plan, Figure 7, <http://www.sccgov.org/sites/planning/Plans%20-%20Programs/Airport%20Land-Use%20Commission/Documents/PAO-adopted-11-19-08-CLUP.pdf>, accessed on September 6, 2012.

⁶ Stanford University, Stanford University Habitat Conservation Plan Project Schedule, <http://hcp.stanford.edu/schedule.html>, accessed on February 26, 2013.

Menlo Park encompasses approximately 18 square miles, including 12 square miles of the San Francisco Bay and wetlands. The potential housing is within the City Limit and would not extend into the City's sphere of influence. See Figure 3-3 in Chapter 3, Project Description, for a map of the potential housing and infill housing around downtown sites.

The current Menlo Park General Plan land use designations and respective Zoning Districts of the five potential housing sites for higher density rezoning are shown in Table 4.9-1. Figures 4.9-1 through 4.9-5 show the land uses for each potential housing site and the surrounding properties. As shown on these figures, the potential housing sites are generally in areas with existing residential and residential serving land uses with the exception of housing Site 5 (Haven Avenue), which is separated from nearby residential land uses by existing light manufacturing land uses and US 101 to the south. A summary of the existing conditions for each of the five sites is provided below.

a. Housing Site 1 - 700 block of Willow Road

As shown on Figure 4.9-1, Site 1 (Veterans Affairs Campus), contains public facilities, and is part of the Veterans Affairs Palo Alto Health Care System Menlo Park Division. It is located in an area with residential land uses to the southwest, south, and east. Both the Middy and Caltrain shuttle stops are within ¼-mile and bus services are along Willow Road. Willow Oaks Park is within ¼-mile while the Seminary Oaks Park is within ½-mile of Site 1. Furthermore there is a high school and an elementary school within ¼-mile.

b. Housing Site 2 - 1200 block of Willow Road

Site 2 (MidPen's Gateway Apartments) is currently occupied with multi-family residential apartments. As shown on Figure 4.9-2, Site 2 is adjacent to single family residents to the west and to the east across Willow Road. Both the Middy and Caltrain shuttle stops are within a ¼-mile and the bus services are along New-bridge Road to the south and Ivy Road to the north. The site is also adjacent to existing bikeways and the potential Dumbarton Rail station within ½-mile. The site is also within ½-mile of two elementary schools and one middle school, and grocery, market, and/or drug store within ¼-mile.

TABLE 4.9-1 EXISTING USE CONDITIONS BY HOUSING SITE

Site	Site Name ^a (APN)	Existing Zoning ^b	Existing General Plan Designation	Existing Use/ Dwelling Units	Lot Area (ac.)
1	Veterans Affairs Clinic	PF	Public Facilities	Vacant Portion of Campus/0 du	1.87
2	MidPen's Gateway Apartments	R3	Medium Density Residential	Multi-Family Residential/48 du	2.27
3	MidPen's Gateway Apartments	R3	Medium Density Residential	Multi-Family Residential/82 du	2.97
4	Hamilton Avenue East	M1	Limited Industry	Light Industrial and Vacant Land/0 du	7.20
5	Haven Avenue	M2	Limited Industry	Light Manufacturing, Storage & Vacant/0 du	15.50

Notes: DU = dwelling unit; DU/ac = dwelling units per acre

^a See Figure 3-3 in Chapter 3, Project Description, for a map of the potential housing locations.

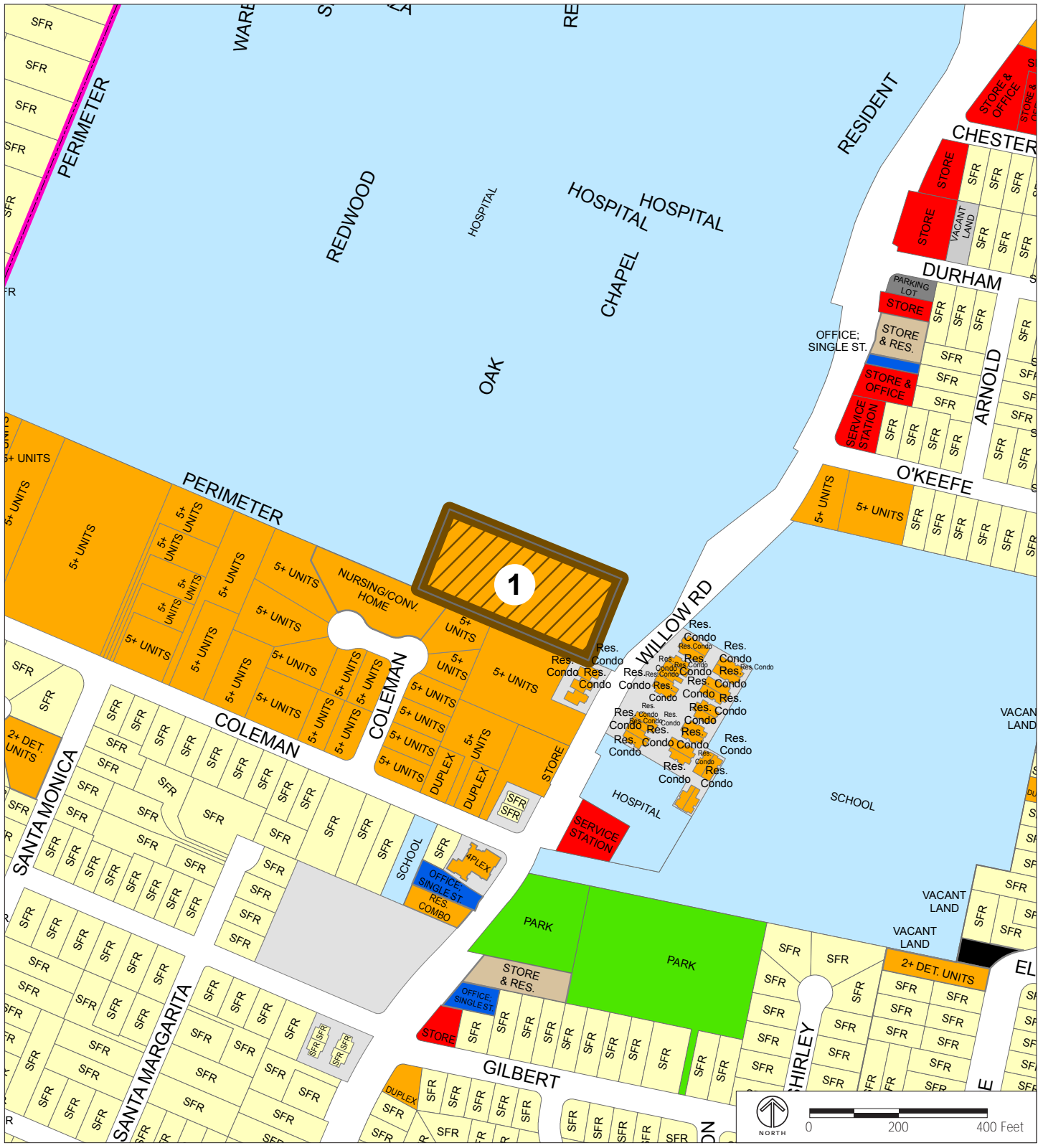
^b City of Menlo Park Zoning District abbreviations: M1 = Light Industrial District; M2 = General Industrial District; PF = Public Facilities District; R3 = Apartment District

c. Housing Site 3 – 1300 block of Willow Road

Site 3 (MidPen's Gateway Apartments) is currently occupied with multi-family residential apartments. As shown on Figure 4.9-3, Site 2 is adjacent to single-family residents to the west and to the east across Willow Road. Both the Midday and Caltrain shuttle stops are within a ¼-mile and the bus services are along New-bridge Road and Ivy Road to the south. The site is also adjacent to existing bikeways and the potential Dumbarton Rail station within ½-mile. The site is also within ½-mile of two elementary schools and one middle school, and grocery, market, and/or drug store within ¼-mile.

d. Housing Site 4 - 700-800 blocks of Hamilton Avenue

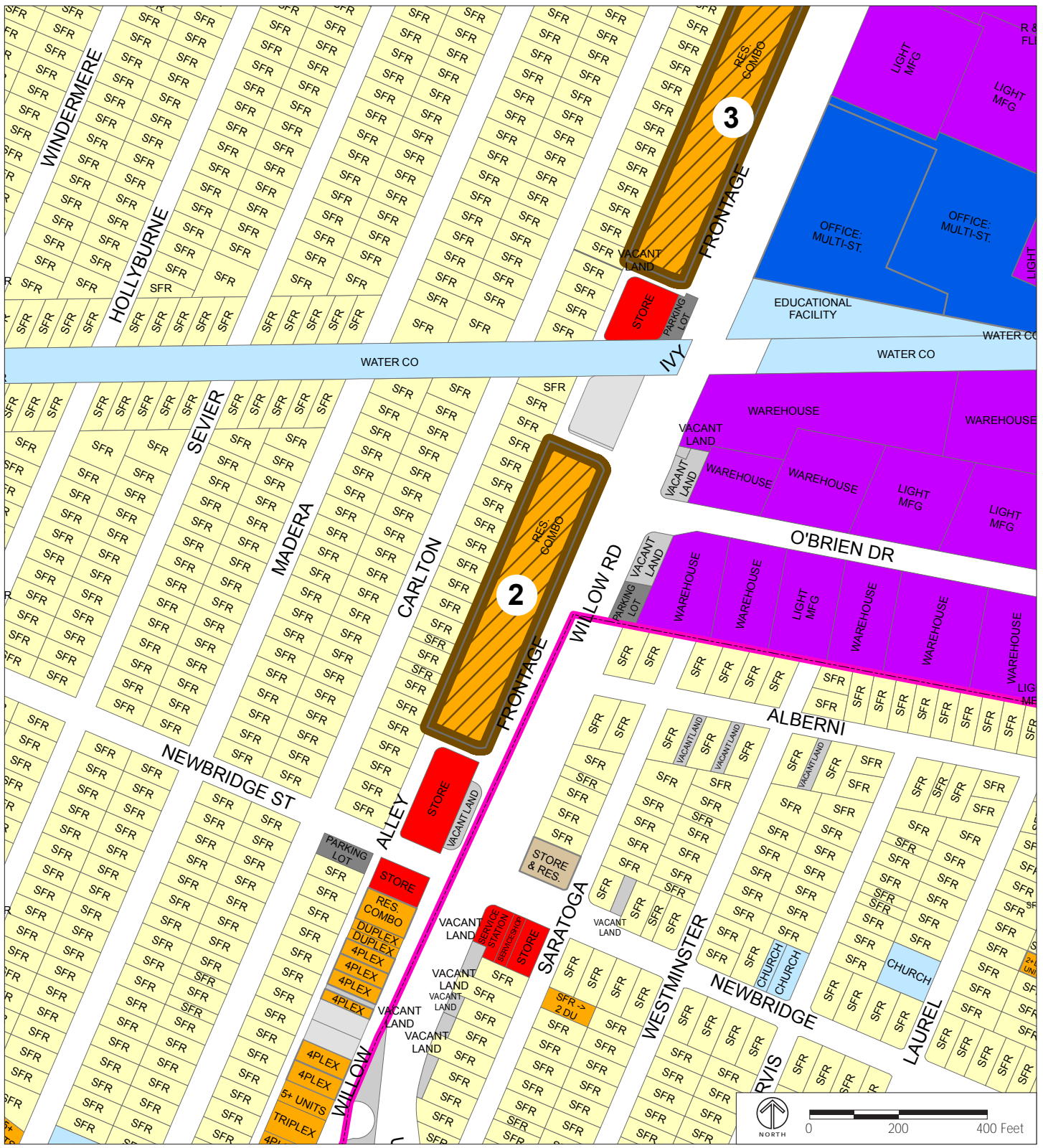
While Site 4 (Hamilton Avenue) would introduce housing on a location with existing industrial land uses, as shown on Figure 4.9-4, the potential future housing would be adjacent to residential serving land uses to the east and west, and would be across the street (Hamilton Avenue) to the south from existing single-family homes. In addition, housing Site 3, with existing multi-family residential is nearby on Willow Road. The Midday shuttle stop is within ¼-mile of the site and the Caltrain shuttle stop is within ½ mile. Both bus stops and bikeways are located within a ¼-mile of the site. Furthermore, the potential Dumbarton Rail station is within ¼ mile. Site 4 is within ½-mile of an elementary school as well as a grocery, market, and/or drug store and within a ¼ mile of Hamilton Park.



Source: Land Use data from San Mateo County Assessor.

SFR = Single Family Residential

FIGURE 4.9-1
 EXISTING LAND USE CONDITIONS SITE 1

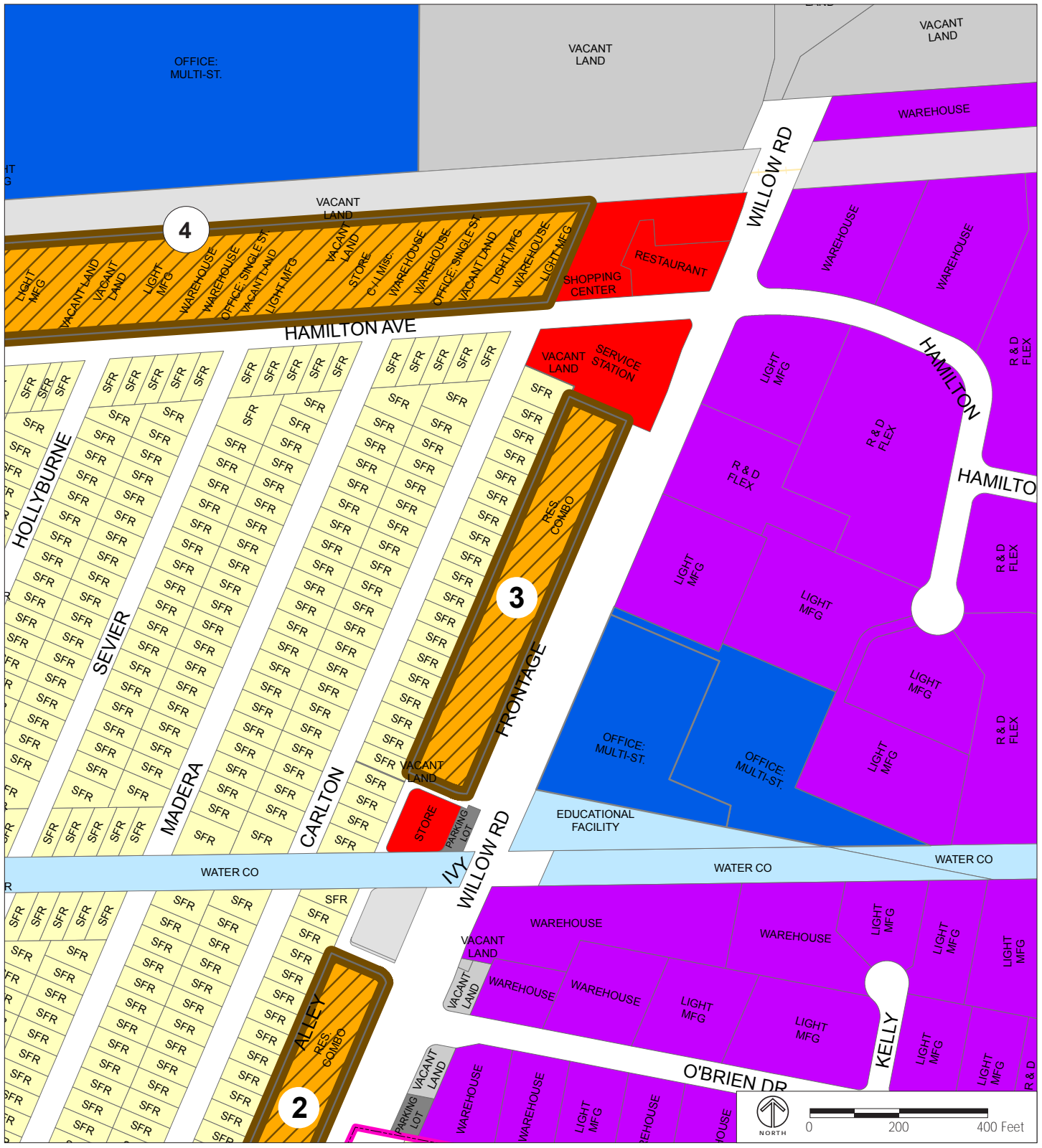


Source: Land Use data from San Mateo County Assessor.

SFR = Single Family Residential

FIGURE 4.9-2

EXISTING LAND USE CONDITIONS SITE 2

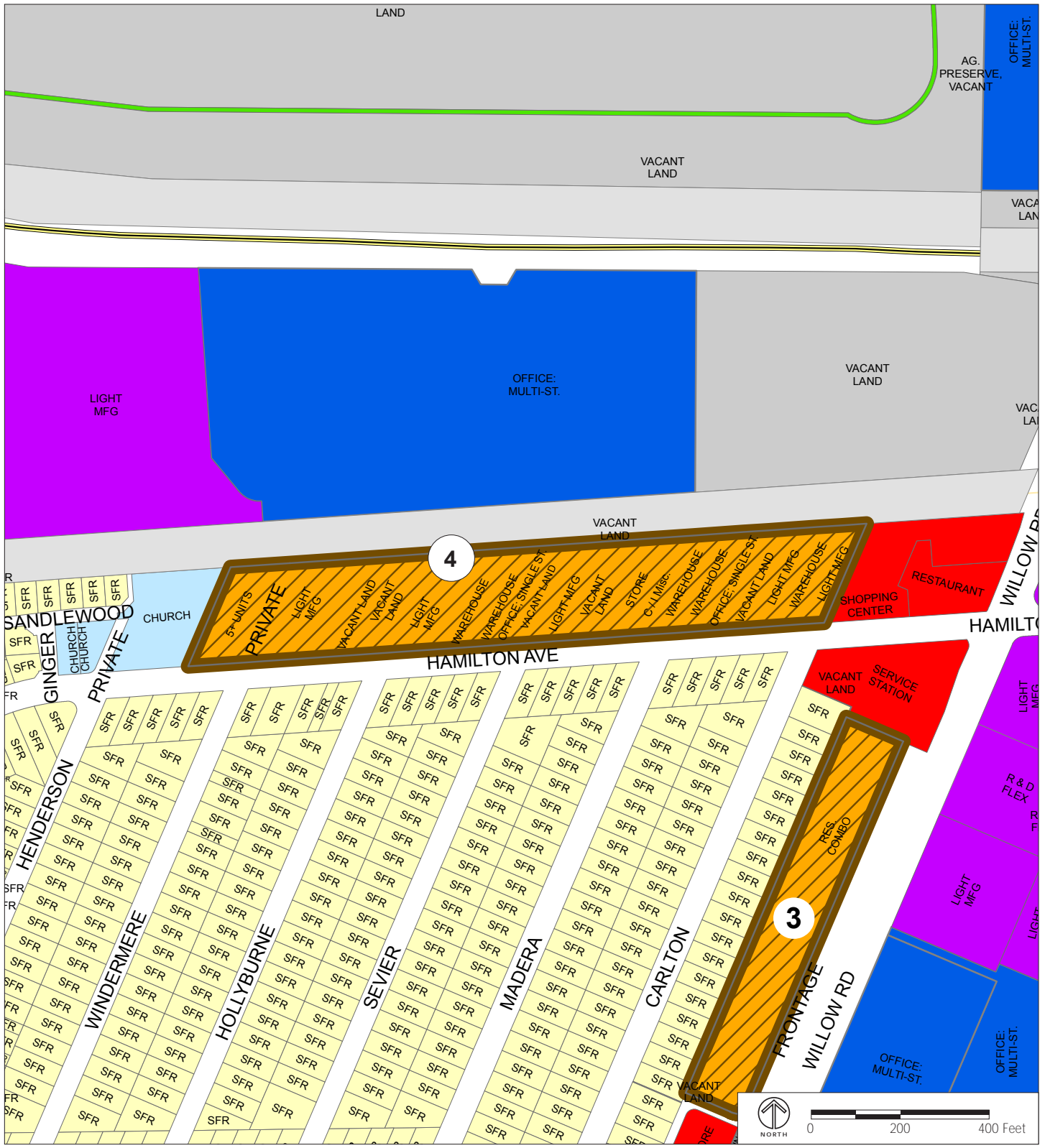


Source: Land Use data from San Mateo County Assessor.

SFR = Single Family Residential
 Light MFG = Light Manufacturing
 R&D FLEX = Research and Development Flexible

FIGURE 4.9-3

EXISTING LAND USE CONDITIONS SITE 3

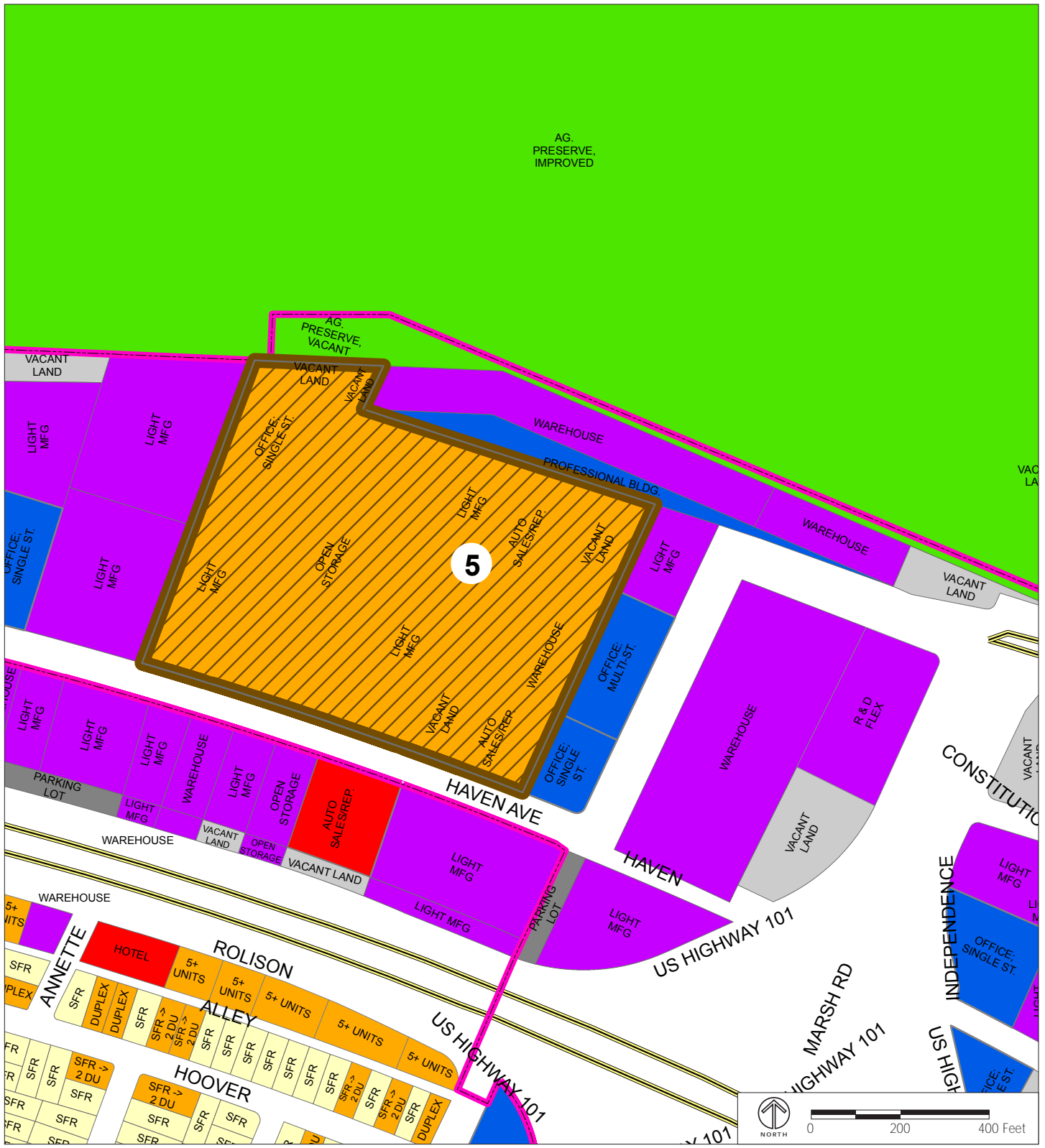


Source: Land Use data from San Mateo County Assessor.

SFR = Single Family Residential
 Light MFG = Light Manufacturing
 R&D FLEX = Research and Development Flexible

FIGURE 4.9-4

EXISTING LAND USE CONDITIONS SITE 4



Source: Land Use data from San Mateo County Assessor.

SFR = Single Family Residential
Light MFG = Light Manufacturing
R&D FLEX = Research and Development Flexible

FIGURE 4.9-5
 EXISTING LAND USE CONDITIONS SITE 5

e. Housing Site 5 – 3600 block of Haven Avenue⁷

Site 5 (Haven Avenue) would introduce high-density residential land uses on a location with existing industrial land uses. As shown on Figure 4.9-5, Site 5 is surrounded by light manufacturing and warehouse space, and the nearest residential land uses are approximately ½ mile away, separated from Site 5 by existing light manufacturing land uses and US 101 to the south. However, Site 5 is within ¼-mile of bus stops and the Caltrain shuttle, and existing bikeway and Bayfront Park are all within a ½-mile of the site. There are no neighborhood-serving uses located within ½-mile of the site.

The future housing that would occur under the potential infill housing sites around downtown would be on land designated as and surrounded by Medium Density Residential and zoned R3. While the exact location of future locations of second units is not currently known, the City's Zoning Ordinance allows second residential units in existing single-family residential areas; therefore the potential second units would be surrounded by existing residential land uses.

2. Menlo Park General Plan

The 1994 Menlo Park General Plan Land Use and Circulation Element, with amendments through 2012, includes a detailed description of the existing land use conditions in Menlo Park. The following provides a summary of the existing land use designations relevant to the Plan Components.

a. Residential

The residential land uses on the potential housing sites, infill sites around the downtown area, and secondary dwelling units are categorized as follows:

- “ Low Density Residential: Single-family detached homes, secondary residential units, public and quasi-public uses, and similar compatible uses ranging from 3.6 to 5.0 dwelling units per acre.
- “ Medium Density Residential. Single family detached and attached homes, duplexes, multi-family units, garden apartments, condominiums, public and quasi-public and similar compatible uses ranging from 5.1 to 18.5 dwelling units per net acre.

b. Non-Residential

The non-residential land uses on the potential housing sites for rezoning to higher density residential are categorized below. Standards of building intensity for non-residential uses are stated as maximum allowable floor area ratios. "Floor area ratio" (FAR) is defined as the ratio of the gross

⁷ Housing Site 5 (Haven Avenue) does not include the properties owned by Tyson, Integris, and Deerfield.

i. Industrial: Limited Industry

The Limited Industry land use designation provides for light manufacturing and assembly, distribution of manufactured products, research and development facilities, industrial supply, incidental warehousing, offices, limited retail sales (such as sales to serve businesses in the area), public and quasi-public uses, and similar and compatible uses. The maximum FAR shall be in the range of 45 to 55 percent.

ii. Public and Quasi-Public: Public Facilities

The Public Facilities land use designation provides for public and quasi-public uses such as government offices, fire stations, schools, churches, hospitals, public utility facilities, airports, sewage treatment facilities, reservoirs, and similar and compatible uses. The maximum FAR shall not exceed 30 percent generally, although specific zoning may allow for a higher FAR. The City recognizes that it does not have the authority to regulate development by Federal, State or other governmental agencies, but the City will work cooperatively with these agencies in an effort to ensure their development is consistent with City goals, plans, and regulations and mitigates any impacts.

3. Menlo Park Zoning Ordinance

The Zoning Ordinance establishes several districts into which the City is divided. The following provides a summary of the existing zoning districts relevant to the Plan Components:

- “ R-3: Apartment District. Single-family dwellings and duplexes with a minimum lot area of seven thousand square feet.
- “ M-1: Light Industrial District. There are no permitted uses in the M-1 district; however, conditional uses such as office, light industrial, outside storage of material or equipment, public utility and facilities and private schools are considered for this designation. Legally established pre-existing and relocated uses from land formerly zoned M-2 along Hamilton Avenue are allowed in the M-1 district, subject to approval.
- “ M-2: General Industrial District. General industrial uses including but not limited to warehousing, manufacturing, printing, assembling and offices are permitted uses in the M-2 district subject to restrictions.
- “ P-F: Public Facilities District. Public facilities used and operated for government purposes by the City of Menlo Park, the county of San Mateo, the state of California, and the government of the United States, and in some instances public school districts.

4. San Mateo County

a. County of San Mateo Health Services Agency Environmental Health Division Land Use Covenant
Currently the County's Environmental Health Division has a Covenant to Restrict Use of Property⁸ (Covenant) between the owner of record and the County's Environmental Health Services Division for potential housing Site 5 (3645 Haven Avenue). Each and all of the restrictions identified in the Covenant shall run with the land, and pass with each and every portion of the property, and shall apply to and bind the respective successors in interest.

As described in the Covenant, the purpose of the Covenant is to protect the present and future public health and safety, and to ensure the location is used in such a manner as to avoid potential harm to persons or property that may result from hazardous substances which may have been deposited on the location by the previous occupant CT International Sales Company. As written, the Covenant prohibits residential and daycare land uses at this address. The County and the property owners are currently in the process of removing the Covenant such that residential uses will be allowed.

Impacts associated with hazards and hazardous materials are addressed in Chapter 4.7.

C. Standards of Significance

The Plan Components would have a significant impact with regard to land use and planning if they would:

1. Physically divide an established community.
2. 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.
3. Conflict with any applicable habitat conservation plan or natural community conservation plan.

⁸ Covenant to Restrict Use of Property for 3645 Haven Avenue, February 15, 2005.

D. Impact Discussion

1. Physically divide an established community.

The Plan Components would result in a significant impact if it would lead to new development or physical features that would divide existing communities. An example of a physical feature that would divide an existing community is an airport, roadway, or railroad track. The Plan Components would retain the existing roadway patterns and do not propose any new major roadways or other physical features through existing residential neighborhoods or other communities that would create new barriers in the EA Study Area. However, the Plan Components would have the potential to divide existing communities by introducing incompatible land uses into existing communities. Specifically, implementation of the Plan Components on housing Sites 1 through 5 and the infill areas around downtown would allow for high density residential development in existing, medium-density residential neighborhoods, and where existing industrial land uses are established.

The designation of sites for higher density residential development would not physically divide any of the areas where the housing sites are identified, as the sites are predominantly used for residential development, are small in size, and would not require any new roads or other features that would divide a community. The Plan Components include the following goals, policies, and programs in the current, modified, and new General Plan to promote cohesive and compatible neighborhoods and prevent new development from dividing existing uses where different land uses abut one another.

a. Current General Plan Land Use and Circulation Element

- “ Policy I-I-3: A program should be developed in cooperation with interested neighborhood groups outlining under what conditions unincorporated lands within the City's sphere of influence may be annexed.
- “ Policy I-I-4: The City shall request San Mateo County to follow Menlo Park's General Plan policies and land use regulations in reviewing and approving new developments in unincorporated areas in Menlo Park's sphere of influence.
- “ Policy I-A-2: New residential developments shall be designed to be compatible with Menlo Park's residential character.
- “ 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 1-A-7: The development of secondary residential units on existing developed residential lots shall be encouraged consistent with adopted City standards.

b. Amended General Plan Housing Element

- “ Goal H-2: Maintain, protect, and enhance existing housing and neighborhoods.
- “ Policy H-2.1: The City will encourage the maintenance, improvement, and rehabilitation of the City’s existing housing stock, the preservation of the City’s affordable housing stock, and the enhancement of community stability 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 provision of open space and/or quality gathering and outdoor spaces shall be encouraged.
- “ Goal H-4: Use land efficiently to meet community housing needs at a variety of income levels, implement sustainable development practices, and blend well-designed new housing into the community.
- “ Policy H-4.3: The City will review proposed new housing in order to achieve excellence in development design through an efficient process and will encourage infill development on vacant and underutilized sites that is harmonious with the character of Menlo Park residential neighborhoods. New construction in existing neighborhoods shall be designed to emphasize the preservation and improvement of the stability and character of the individual neighborhood.

The City will also encourage innovative design that creates housing opportunities that are complementary to the location of the development. It is the City’s intent to enhance neighborhood identity and sense of community by ensuring that all new housing will (1) have a sensitive transition with the surrounding area, (2) avoid unreasonably affecting the privacy of neighboring properties, or (3) avoid impairing access to light and air of structures on neighboring properties.

As discussed under Section B, Existing Conditions, four of the potential housing sites, the infill areas around downtown and the second units on existing residential lots would be located in areas with existing transit and roadway infrastructure and would not cause a physical division of a community. Further, all of the potential sites with the exception of Site 5 (Haven Avenue) would introduce like uses that are compatible with their surroundings. Implementation of the General Plan Policies Policy H-4.3 and I-A-4 would ensure future development under the Plan Components would be compatible with existing land uses by encouraging innovative design that are complementary to the location of the development, requiring that new residential development be compatible with Menlo Park’s residential character and requiring projects to be designed to avoid conflicts between the uses, such as traffic, parking, noise, dust, and odors. As a result, while

different land uses would be adjacent to each other and intensification of residential land uses within the EA Study Area would occur under the Plan Components, the potential residential land uses would not divide any established community. Therefore, implementation of the Plan Components would result in a *less-than-significant* impact regarding the physical division of existing communities.

2. 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.

a. Menlo Park General Plan and Zoning Ordinance

The General Plan and Zoning Ordinance are the primary planning documents for the City of Menlo Park. The proposed amendments are intended to ensure consistency between the Housing Element, General Plan, and Zoning Ordinance. Because the General Plan is the overriding planning document for the City, the impact would be *less than significant*.

b. San Mateo County Health Services Agency Environmental Health Division Land Use Covenant

Currently the County's Environmental Health Division has a Land Use Covenant to Restrict Use of Property⁹ (Covenant) between the owner of record and the San Mateo County Environmental Health Services Division for potential housing Site 5 (3645 Haven Avenue). Each and all of the restrictions identified in the Covenant shall run with the land, and pass with each and every portion of the property, and shall apply to and bind the respective successors in interest. As written the Covenant prohibits residential and daycare land uses at this address. The following current and amended General Plan policies and programs would ensure risks associated with hazardous materials in Menlo Park would be minimized.

i. *Amended General Plan Safety Element*

- “ Policy S-1.8: Safety Element Updates. Review and comprehensively revise the Safety Element whenever substantial new scientific data or evidence related to prevention of natural and human hazards becomes available, and coordinate with other General Plan elements and City emergency plans.
- “ Policy S-1.18: Potential Hazardous Materials Conditions Investigation. Require developers to conduct an investigation of soils, groundwater and buildings affected by hazardous-material potentially released from prior land uses in areas historically used for commercial or industrial uses, and to identify and im-

⁹ Covenant to Restrict Use of Property for 3645 Haven Avenue, February 15, 2005.

plement mitigation measures to avoid adversely affecting the environment or the health and safety of residents or new uses.

- “ Policy S1.17: Potential Exposure of New Residential Development to Hazardous Materials. Minimize risk associated with hazardous materials by assessing exposure to hazardous materials of new residential development and sensitive populations near existing industrial and manufacturing areas. Minimize risk associated with hazardous materials.
- “ Program S1.A: Link the City’s Housing and Safety Elements. Continue to review and revise the Safety Element, as necessary, concurrently with updates to the General Plan Housing Element whenever substantial new data or evidence related to prevention of natural and human hazards become available.
- “ Program S1.J: Require Health and Safety Plan for Hazardous Materials. Require the preparation of health and safety plans to be used to protect the general public and all workers in construction areas from potentially hazardous materials. The plan shall describe the practices and procedures to protect worker health in the event of an accidental release of hazardous materials or if previously undiscovered hazardous materials are encountered during construction. The plan shall include items such as spill prevention, cleanup and evacuation procedures. The plan will help protect the public and workers by providing procedures and contingencies that will help reduce the exposure to hazardous materials.

These policies would address the hazardous conditions on Site 5 (Haven Avenue) and would therefore address the required remediation and approval process by the appropriate reviewing agency, which would satisfy the intent of the County’s existing Land Use Covenant to protect the present and future public health and safety. With the remediation of the site and the removal of the Covenant to permit residential land uses, the change in land use from industrial to residential would not conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project and impacts would be *less than significant*.

3. Conflict with any applicable habitat conservation plan or natural community conservation plan.

There are no adopted HCPs or Natural Community Conservation Plans within the EA Study Area. At the time of writing this EA, Stanford University is preparing an HCP that has not yet been adopted. The Final Environmental Impact Statement for the Stanford HCP has been published and HCP implementation is scheduled for Spring 2013.¹⁰ Portions of the EA Study Area are included in the Stanford HCP; however, no

¹⁰ Stanford University, Stanford University Habitat Conservation Plan Project Schedule, <http://hcp.stanford.edu/schedule.html>, accessed on December 7, 2012.

identified housing sites are within the Stanford HCP area and therefore the Plan Components would not conflict with the Stanford HCP.

In addition, the following policies and programs in the existing General Plan and under the Plan Components would protect natural resources:

a. Current General Plan Housing and Land Use and Circulation Elements

- “ Policy I-G-12: Encourage the maintenance of open space on Stanford lands within Menlo Park's unincorporated sphere of influence.
- “ Policy I-G-8: The Bay, its shoreline, San Francisquito Creek, and other wildlife habitat and ecologically fragile areas shall be maintained and preserved to the maximum extent possible. The City shall work in cooperation with other jurisdictions to implement this policy.
- “ Program H-4.A: The City will review and modify the following development standards based on the most up-to-date empirical studies to allow exceptions and incentives for infill housing located close to transit and services. This program will focus first on lots 10,000 square feet or greater around the El Camino Real/Downtown Specific Plan area. The program should then be considered for possible expansion to smaller lots at a later date.
 - a. Variable Density Standards. Establish unit densities for studio and one bedroom units based on “density unit equivalents” or the size of the unit. In addition, develop standards for single-room occupancy (SRO) units.
 - b. Zoning Standards and Development Requirements. Review Zoning standards and requirements, including Floor Area Ratio (FAR), parking, density, and other standards to encourage infill housing. Provide reduced parking standards to support affordable and senior housing development. Modify the R-3 and R-4 districts requirements and/or create new zoning that would be appropriate for high-density housing. Provide for more flexible parking requirements that help to facilitate infill, affordable, transit-oriented, and mixed-use development, while at the same time avoiding off-site parking impacts. Examples include joint use parking, off-site parking (currently allowed), allowances for reduced standards depending upon location (such as near transit), parking stall dimensions, “grandfathering” non-compliant buildings and uses, etc.
 - c. Expedite the Review Process and Consider Fee Waivers or Reductions. In developing requirements for infill development, identify and implement ways to shorten the review process (such as Pro-

gram H-4.I implementation to “Refine Multi-Family and Residential Mixed Use Design Guidelines”) and develop criteria for possible waivers or reductions of development fees where feasible.

d. Parcel Consolidation. Promote parcel consolidation for the assembly of new housing sites to ensure minimum densities are achieved and integrated site planning occurs by (1) identifying priority sites for lot consolidation where common ownership occurs, (2) contacting property owners of contiguous vacant and underutilized sites, (3) conducting outreach to affordable housing developers, and (4) offering the incentives listed above to promote lot consolidation.

b. Amended General Plan Open Space and Conservation Element

- “ Policy OSC-1.8: Regional Open Space Preservation Efforts. Support regional and sub-regional efforts to acquire, develop, and maintain open space conservation lands.
- “ Policy OSC-1.9: Federal, State, and County Open Space and Conservation Programs. Make maximum use of federal, state, and county programs wherever possible in all matters concerned with open space and conservation.
- “ Policy OSC1.7: San Francisquito Creek Joint Powers Authority. Continue efforts through San Francisquito Creek Joint Powers Authority to enhance the value of the creek as a community amenity for trails and open space, conservation and educational opportunities.
- “ Policy OSC1.6: South Bay Salt Pond Restoration Project and Flood Management Project. Continue to support and participate in Federal and State efforts related to the South Bay Salt Pond Restoration Project and flood management project. Provide public access to the Bay for the scenic enjoyment and recreation opportunities as well as conservation education opportunities related to the open Bay, the sloughs, and the marshes.
- “ Policy OSC1.14: Protection of Conservation and Scenic Areas. Protect conservation and scenic areas from deterioration or destruction by vandalism, private actions, or public actions.
- “ Policy OSC1.2: Habitat for Open Space and Conservation Purposes. Preserve, protect, maintain, and enhance water, water-related areas, and plant and wildlife habitat for open space and conservation purposes.

Furthermore, the Plan Components would be concentrated on sites either developed and/or underutilized, and/or in close proximity to existing residential and residential-serving development, where future development would have a lesser impact on natural resources. As no conflicts were identified with current or

proposed conservation plans, the future development's impacts related to conflicts with conservation plans or policies would be *less than significant*.

4. Cumulative Impacts

In the case of an area-wide planning document such as a General Plan, cumulative effects occur from development under the General Plan within the City combined with effects of development on lands adjacent to the city and within the county.

The land use analyses find that the Plan Components would not divide an established community or conflict with established plans, policies and regulations, or with habitat and conservation plans or policies. The Plan Components would also not create or exacerbate land use conflicts in or outside the City of Menlo Park. The Plan Components would be consistent with existing and proposed changes in other local and regional plans. Development that would be allowed under the Plan Components would not create substantial land use impacts. Development is likely to occur in surrounding cities and in the San Mateo region as well. However, such development is taking place in already urbanized areas and would not require significant land use changes that would create land use conflicts, nor would they divide communities. Therefore, the Plan Components would not result in a cumulatively considerable contribution to cumulative impacts related to land use changes and impacts would be *less than significant*.

E. Impacts and Mitigation Measures

The Plan Components would not result in any significant land use and planning impacts; therefore, no mitigation measures are necessary.

4.10 NOISE

This chapter of the Environmental Assessment (EA) begins with a discussion of the fundamentals of sound and an examination of federal, state, and local noise guidelines, policies, and standards. The remainder of the chapter provides an evaluation of the potential noise-related, environmental consequences of future development that could occur by adopting and implementing the proposed Housing Element Update, General Plan Consistency Update, and associated Zoning Ordinances amendments, together referred to as the “Plan Components.” This evaluation focuses specifically on the potential for implementation of the Plan Components to result in noise impacts within the EA Study Area. The supporting analysis considers noise levels at existing receptor locations; evaluates potential noise impacts associated with the Plan Components; and provides mitigation where necessary to reduce noise impacts at noise-sensitive locations. Noise calculations on which this analysis is based are included in Appendix E, Noise Monitoring and Modeling Data.

A. Background

1. Noise Descriptors

Noise is most often defined as unwanted sound. Although sound can be easily measured, the perception of noise and the physical response to sound complicate the analysis of its impact on people. People judge the relative magnitude of sound sensation in subjective terms such as “noisiness” or “loudness.”

The following are brief definitions of terminology used in this section:

- “ **Sound.** A disturbance created by a vibrating object, which, when transmitted by pressure waves through a medium such as air, is capable of being detected by a receiving mechanism, such as the human ear or a microphone.
- “ **Noise.** Sound that is loud, unpleasant, unexpected, or otherwise undesirable.
- “ **Decibel (dB).** A unit-less measure of sound on a logarithmic scale.
- “ **A-Weighted Decibel (dBA).** An overall frequency-weighted sound level in decibels that approximates the frequency response of the human ear.
- “ **Equivalent Continuous Noise Level (Leq).** The mean of the noise level, energy averaged over the measurement period.
- “ **Statistical Sound Level (Ln).** The sound level that is exceeded “n” percent of time during a given sample period. For example, the L50 level is the statistical indicator of the time-varying noise signal that is exceeded 50 percent of the time (during each sampling period); that is, half of the sampling time, the

changing noise levels are above this value and half of the time they are below it. This is called the “median sound level.” The L10 level, likewise, is the value that is exceeded 10 percent of the time (i.e. near the maximum) and this is often known as the “intrusive sound level.” The L90 is the sound level exceeded 90 percent of the time and is often considered the “effective background level” or “residual noise level.”

- “ **Day-Night Sound Level (Ldn or DNL).** The energy-average of the A-weighted sound levels occurring during a 24-hour period, with 10 dB added to the sound levels occurring during the period from 10:00 p.m. to 7:00 a.m.
- “ **Community Noise Equivalent Level (CNEL).** The energy-average of the A-weighted sound levels occurring during a 24-hour period, with 5 dB added to the levels occurring during the period from 7:00 p.m. to 10:00 p.m. and 10 dB added to the sound levels occurring during the period from 10:00 p.m. to 7:00 a.m.

2. Characteristics of Sounds

When an object vibrates, it radiates part of its energy as acoustical pressure in the form of a sound wave. Sound can be described in terms of amplitude (loudness), frequency (pitch), or duration (time). The human hearing system is not equally sensitive to sound at all frequencies. Therefore, to approximate the human, frequency-dependent response, the A-weighted filter system is used to adjust measured sound levels. The normal range of human hearing extends from approximately 0 dBA (the threshold of detection) to 140 dBA (the threshold of pain).

Unlike linear units such as inches or pounds, decibels are measured on a logarithmic scale to better account for the large variations in pressure amplitude (the above range of human hearing, 0 to 140 dBA, represents a ratio in pressures of one hundred trillion to one). All noise levels in this study are relative to the industry-standard pressure reference value of 20 micropascals. Because of the physical characteristics of noise transmission and perception, the relative loudness of sound does not closely match the actual amounts of sound energy. Table 4.10-1 presents the subjective effect of changes in sound pressure levels.

Sound is generated from a source; the decibel level decreases as the distance from that source increases. Sound dissipates exponentially with distance from the noise source. This phenomenon is known as spreading loss or distance attenuation.

TABLE 4.10-1 CHANGE IN APPARENT LOUDNESS

± 3 dB	Threshold of human perceptibility
± 5 dB	Clearly noticeable change in noise level
± 10 dB	Half or twice as loud
± 20 dB	Much quieter or louder

Source: Bies and Hansen 2009.

When sound is measured for distinct time intervals, the statistical distribution of the overall sound level during that period can be obtained. For example, L_{50} is the noise level that is exceeded 50 percent of the time. Similarly, the L_{02} , L_{08} , and L_{25} values are exceeded 2, 8, and 25 percent of the time or 1, 5, and 15 minutes per hour. The energy-equivalent sound level (L_{eq}) is the most common parameter associated with community noise measurements. The L_{eq} metric is a single-number noise descriptor of the energy-average sound level over a given period of time. Other values typically noted during a noise survey are the L_{min} and L_{max} . These values are the minimum and maximum root-mean-square (RMS) noise levels obtained over the stated measurement period.

Because community receptors are more sensitive to unwanted noise intrusion during the evening and nighttime hours, state law requires that, for planning purposes and to account for this increased receptiveness of noise, an artificial decibel increment is to be added to quiet-time noise levels to calculate the 24-hour CNEL noise metric.

3. Psychological and Physiological Effects of Noise

Physical damage to human hearing begins at prolonged exposure to noise levels higher than 85 dBA. Exposure to high noise levels affects the entire system; prolonged noise exposure in excess of 75 dBA increases body tensions, thereby affecting blood pressure and functions of the heart and nervous system. Extended periods of noise exposure above 90 dBA results in permanent cell damage, which is the main driver for employee hearing protection regulations in the workplace. For community environments, the ambient or background noise problem is widespread and generally more concentrated in urban areas than in outlying, less-developed areas. Many factors influence the ambient noise environment and the perception of noise, including meteorological conditions such as temperature and humidity. Elevated ambient noise levels can result in noise interference (e.g. speech interruption/masking, sleep disturbance, disturbance of concentra-

tion) and cause annoyance. Since most people do not routinely work with decibels or A-weighted sound levels, it is often difficult to appreciate what a given sound pressure level (SPL) number means. To help relate noise level values to common experience, Table 4.10-2 shows typical noise levels from noise sources.

4. Vibration Fundamentals

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. Vibration is normally associated with activities such as railroads or vibration-intensive stationary sources, but can also be associated with construction equipment such as jackhammers, pile drivers, and hydraulic hammers. Vibration displacement is the distance that a point on a surface moves away from its original static position. The instantaneous speed that a point on a surface moves is the velocity, and the rate of change of the speed is the acceleration. Each of these descriptors can be used to correlate vibration to human response, building damage, and acceptable equipment vibration levels. During project construction, the operation of construction equipment can cause groundborne vibration. During the operational phase of a project, receptors may be subject to levels of vibration that can cause annoyance due to noise generated from vibration of a structure or items within a structure. These types of vibration are best measured and described in terms of velocity and acceleration.

The three main types of waves associated with groundborne vibrations are surface or Rayleigh waves, compression or P-waves, and shear or S-waves.

- Surface or Rayleigh waves travel along the ground surface. They carry most of their energy along an expanding cylindrical wave front, similar to the ripples produced by throwing a rock into a lake. The particle motion is more or less perpendicular to the direction of propagation.
- Compression or P-waves are body waves that carry their energy along an expanding spherical wave front. The particle motion in these waves is longitudinal, in a push-pull motion. P-waves are analogous to airborne sound waves.
- Shear or S-waves are also body waves, carrying their energy along an expanding spherical wave front. Unlike P-waves, however, the particle motion is transverse, or perpendicular to the direction of propagation.

Vibration amplitudes are usually described in terms of either the peak particle velocity (PPV) or the RMS velocity. PPV is the maximum instantaneous peak of the vibration signal and RMS is the square root of the average of the squared amplitude of the signal. PPV is more appropriate for evaluating potential building damage, whereas RMS is typically more suitable for evaluating human response.

TABLE 4.10-2 TYPICAL NOISE LEVELS

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	110	Rock Band
Jet Flyover at 1,000 feet		
	100	
Gas Lawn Mower at 3 feet		
	90	
Diesel Truck at 50 feet, at 50 miles per hour		Food Blender at 3 feet
	80	Garbage Disposal at 3 feet
Noisy Urban Area, Daytime		
	70	Vacuum Cleaner at 10 feet
Commercial Area		Normal speech at 3 feet
Heavy Traffic at 300 feet	60	
		Large Business Office
Quiet Urban Daytime	50	Dishwasher Next Room
Quiet Urban Nighttime	40	Theater, Large Conference Room (background)
Quiet Suburban Nighttime		
	30	Library
Quiet Rural Nighttime		Bedroom at Night, Concert Hall (background)
	20	
		Broadcast/Recording Studio
	10	
Lowest Threshold of Human Hearing	0	Lowest Threshold of Human Hearing

The units for PPV and RMS velocity are normally inches per second (in/sec). Often, vibration is presented and discussed in dB units in order to compress the range of numbers required to describe the vibration. In this study, all PPV and RMS velocity levels are in in/sec and all vibration levels are in dB relative to one micro-inch per second (abbreviated as VdB). Typically, groundborne vibration generated by human activities attenuates rapidly with distance from the source of the vibration. Even the more persistent Rayleigh waves decrease relatively quickly as they move away from the source of the vibration. Man-made vibration problems are, therefore, usually confined to relatively short distances (500 to 600 feet or less) from the source.¹

Construction operations generally include a wide range of activities that can generate groundborne vibration. In general, blasting and demolition of structures generate the highest vibrations. Vibratory compactors or rollers, pile drivers, and pavement breakers can generate perceptible amounts of vibration at up to 200 feet. Heavy trucks can also generate groundborne vibrations, which can vary, depending on vehicle type, weight, and pavement conditions. Potholes, pavement joints, discontinuities, differential settlement of pavement, etc., all increase the vibration levels from vehicles passing over a road surface. Construction vibration is normally of greater concern than vibration from normal traffic flows on streets and freeways with smooth pavement conditions. Trains generate substantial quantities of vibration due to their engines, steel wheels, heavy loads, and wheel-rail interactions.

5. Noise- and Vibration-Sensitive Receptors

Certain land uses are particularly sensitive to noise and vibration, including residential, school, and open space/recreation areas where quiet environments are necessary for enjoyment, public health, and safety. Sensitive land uses within the EA Study Area include residences, schools, places of worship, and recreational areas. These uses are regarded as sensitive because they are where citizens most frequently engage in activities which are likely to be disturbed by noise, such as reading, studying, sleeping, resting, or otherwise engaging in quiet or passive recreation. Commercial and industrial uses are not considered uses for the purposes of this analysis since noise- and vibration-sensitive activities are less likely to occur in these areas. Additionally, commercial and industrial uses often themselves generate more noise than they receive from other uses.

¹ Federal Transit Administration, 2006. Transit Noise and Vibration Impact Assessment.

B. Regulatory Framework

To limit population exposure to physically and/or psychologically damaging as well as intrusive noise levels, the federal government, the State of California, various county governments, and most municipalities in the state have established standards and ordinances to control noise.

1. State of California Noise Standards

a. State of California Building Code

The state of California's noise insulation standards are codified in the California Code of Regulations, Title 24, *Building Standards Administrative Code, Part 2, California Building Code*. These noise standards are applied to new construction in California for the purpose of interior noise compatibility from exterior noise sources. Acoustical studies that accompany building plans must demonstrate that the structure has been designed to limit interior noise in habitable rooms to acceptable noise levels. For new residential buildings, schools, and hospitals, the acceptable interior noise limit for new construction is 45 dBA CNEL.

b. State of California Land Use Compatibility Criteria

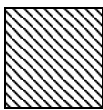
Table 4.10-3 presents a land use compatibility chart for community noise adopted by the State of California as part of its General Plan Guidelines. This table provides urban planners with a tool to gauge the compatibility of new land uses relative to existing and future noise levels. This table identifies normally acceptable, conditionally acceptable, and clearly unacceptable noise levels for various land uses. A conditionally acceptable designation implies new construction or development should be undertaken only after a detailed analysis of the noise reduction requirements for each land use is made and needed noise insulation features are incorporated in the design. By comparison, a normally acceptable designation indicates that standard construction can occur with no special noise reduction requirements.

2. Menlo Park Noise Element

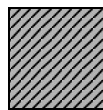
Menlo Park adopted a Noise Element in 1978. The City's noise element discusses how ambient noise should influence land use and development decisions and includes a chart of normally acceptable, conditionally acceptable, normally unacceptable, and clearly unacceptable uses at different noise levels expressed in either L_{dn} or CNEL. The noise element directed the City to adopt development and noise insulation standards generally consistent with the contemporaneous version of the State of California's Noise Insulation Standard. The Menlo Park General Plan Noise Element utilizes the noise compatibility criteria shown in Table 4.10-4 below, and limits the maximum interior noise levels for residential areas to 45 dBA CNEL at habitable rooms, and a maximum of 50 dBA for bedrooms and 55 dBA for other habitable rooms. Though similar, Menlo Park's noise compatibility standards differ from the State's.

TABLE 4.10-3 CALIFORNIA LAND USE COMPATIBILITY FOR COMMUNITY NOISE ENVIRONMENTS

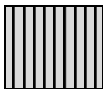
Land Uses	CNEL (dBA)					
	55	60	65	70	75	80
Residential-Low Density Single Family, Duplex, Mobile Homes	Normally Acceptable	Normally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable
Residential- Multiple Family	Normally Acceptable	Normally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable
Transient Lodging, Motels, Hotels	Normally Acceptable	Normally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable
Schools, Libraries, Churches, Hospitals, Nursing Homes	Normally Acceptable	Normally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable
Auditoriums, Concert Halls, Amphitheatres	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Clearly Unacceptable	Clearly Unacceptable
Sports Arena, Outdoor Spectator Sports	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Clearly Unacceptable	Clearly Unacceptable
Playgrounds, Neighborhood Parks	Normally Acceptable	Normally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Clearly Unacceptable	Clearly Unacceptable
Golf Courses, Riding Stables, Water Recreation, Cemeteries	Normally Acceptable	Normally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Clearly Unacceptable
Office Buildings, Businesses, Commercial and Professional	Normally Acceptable	Normally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Clearly Unacceptable
Industrial, Manufacturing, Utilities, Agricultural	Normally Acceptable	Normally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Clearly Unacceptable



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



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



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



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

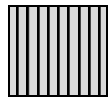
Source: California Office of Noise Control, 1971. Guidelines for the Preparation and Content of Noise Elements of the General Plan. February 1976. Adapted from the US EPA Office of Noise Abatement Control, Washington D.C. Community Noise. Prepared by Wyle Laboratories. December.

TABLE 4.10-4 MENLO PARK LAND USE COMPATIBILITY FOR COMMUNITY NOISE ENVIRONMENTS

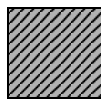
Land Uses	CNEL (dBA)					
	55	60	65	70	75	80
Residential-Low Density Single Family, Duplex, Mobile Homes	Normally Acceptable	Normally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable	Clearly Unacceptable
Residential - Multi. Family	Normally Acceptable	Normally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable	Clearly Unacceptable
Transient Lodging - Motels, Hotels	Normally Acceptable	Normally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable	Clearly Unacceptable
Schools, Libraries, Churches, Hospitals, Nursing Homes	Normally Acceptable	Normally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable	Clearly Unacceptable
Sports Arena, Outdoor Spectator Sports	Normally Acceptable	Normally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable	Clearly Unacceptable
Playgrounds, Neighborhood Parks	Normally Acceptable	Normally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable	Clearly Unacceptable
Golf Courses, Riding Stables, Water Recreation, Cemeteries	Normally Acceptable	Normally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable	Clearly Unacceptable
Office Buildings, Businesses, Commercial and Professional	Normally Acceptable	Normally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable	Clearly Unacceptable
Industrial, Manufacturing, Utilities, Agricultural	Normally Acceptable	Normally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable	Clearly Unacceptable



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



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



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



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

Source: Menlo Park Noise Element of the Comprehensive Plan, 1978. City of Menlo Park, California.

3. Menlo Park Municipal Code

Menlo Park addresses noise in various capacities under multiple chapters of its municipal code. Noise is primarily addressed in Chapter 8.06 (Noise); additional chapters making brief mention of minor and/or incidental noise issues and regulations include Chapters 8.07 (Leaf Blowers), 8.12 (Business Operations after Midnight), 8.28 (Parks and Recreation), 9.26 (Poultry and Rabbits), 11.64 (Transportation Systems Management), and 13.18 (Use of Public Rights-of-Way).

a. Chapter 8.06 (Noise)

i. Basic Exterior Residential Noise Limitations

Chapter 8.06 (Noise) contains the primary set of statutes through which Menlo Park regulates noise. For all noise measurements pursuant to the noise ordinance, the municipal code specifies standard procedures for conducting noise measurements, with specifications for sound-meter settings and placement. Section 8.06.030 sets maximum noise levels at any residential receiving property to a maximum of 60 dBA during the daytime hours between 7:00 a.m. to 10:00 p.m., and to 50 dBA during the nighttime hours between 10:00 p.m. and 7:00 a.m. The ordinance applies an additional 5 dBA penalty to sounds of a particularly annoying nature, such as tones, screeches, whines, and pulses, among others. The ordinance also includes a qualitative standard which prohibits noises which can be reasonably determined to be disturbing to an entire neighborhood or any considerable number of residents.

ii. Exceptions – Noise Limitation Exceptions and Exemptions

The Menlo Park noise ordinance also contains a number of qualified exceptions to the limitations stipulated in the ordinance; these include construction, powered equipment, and leaf blowers, deliveries, social gatherings, pavement sweeping, garbage collection, and animals. Additionally, the ordinance contains general exemptions for emergencies and emergency warning devices, sporting and City-permitted events, City and State projects, and the normal operation of typical motor vehicles. Of these, the most notable exceptions and exemptions for the purposes of this analysis include those for construction, motor vehicles, and deliveries.

Construction activities are exempted from the noise ordinance between the hours of 8:00 a.m. and 6:00 p.m. Monday through Friday; construction activities are only allowed on Saturday and Sunday between the hours of 9:00 a.m. and 5:00 p.m. and only if they are being personally undertaken by property owners performing maintenance or improvements. Despite these allowances for weekend residential maintenance, the ordinance still prohibits the use of any equipment that results in noise levels exceeding 85 dBA at a distance

of 50 feet. Construction that is sufficiently quiet so as to be fully compliant with the basic exterior noise limitations set out by the ordinance is generally allowed at any time.

Notwithstanding specialized vehicle equipment or sound amplification systems, noise from the normal operation of motor vehicles (including cars, trucks, busses, trains, and airplanes) is exempted from the provisions of the noise ordinance. Noise from deliveries to food retailers and restaurants are generally excepted from the ordinance, while noise from other commercial and industrial deliveries are generally excepted between 7:00 a.m. and 6:00 p.m. Monday through Friday and 9:00 a.m. to 5:00 p.m. Saturday and Sunday. Temporally and geographically specific exceptions for street sweeping and garbage collection are also described in detail by the noise ordinance.

b. Other chapters mentioning noise

In addition to Chapter 8.06 (Noise), there are several other chapters in the Menlo Park municipal code that mention noise. In Chapter 8.07 (Leaf Blowers), the municipal code mentions that leaf blowers are a source of loud noise and stipulates that operators of these devices must wear ear protection. In Chapter 8.12 (Business Operations after Midnight), Section 8.12.040 indicates that a permit for late-night business operations may be revoked if noise from the establishment exceeds that foreseen by the permit. Chapter 8.28 (Parks and Recreation) prohibits the creation of obtrusive noise in parks. Section 9.26.080 of Chapter 9.26 (Poultry and Rabbits) prohibits the keeping of animals or fowl which cause unreasonable and disturbing noise for residents. In the goals of Chapter 11.64 (Transportation Systems Management), it is stated that noise reduction through decreased traffic is a goal of the chapter. Finally, in Chapter 13.18 (Use of Public Rights-of-Way), Section 13.18.110 (Regulations) stipulates that all regulations, including those related to noise, apply to the construction, operation, maintenance, and repair of facilities in the public rights-of-way.

4. Vibration Standards

Neither the City of Menlo Park nor the County of San Mateo have regulatory standards for construction or operational vibration sources. For the purpose of this analysis, to evaluate the impacts of Plan Components under CEQA, federal standards are used to address vibration impacts from the operation of equipment to adjacent uses.

The United States Department of Transportation (Federal Transit Administration [FTA]) provides criteria for acceptable levels of groundborne vibration for various types of special buildings that are sensitive to vibration. The human reaction to various levels of vibration is highly subjective and varies from person to person. The upper end of the range shown for the threshold of perception, or roughly 65 VdB, may be con-

sidered annoying by some people. Vibration below 65 VdB may also cause secondary audible effects such as a slight rattling of doors, suspended ceilings/fixtures, windows, and dishes, any of which may result in additional annoyance.

The FTA provides criteria to evaluate potential human annoyance due to groundborne vibration caused by frequent and intermittent events. These FTA criteria shown in Table 4.10-5 are used in this analysis to evaluate impacts from transportation sources to sensitive land uses throughout the EA Study Area. The FTA also provides criteria to evaluate potential structural damage associated with vibration, and these FTA criteria are used in this analysis. Structures amplify groundborne vibration and wood-frame buildings, such as typical residential structures, are more affected by ground vibration than heavier buildings. The level at which groundborne vibration is strong enough to cause architectural damage has not been determined conclusively. The most conservative estimates are reflected in the FTA standards, shown in Table 4.10-6.

C. Existing Noise Environment

Menlo Park has a highly irregular border and is surrounded by multiple other cities and towns of various sizes. Municipalities surrounding Menlo Park include Redwood City, Atherton, Palo Alto, Woodside, and Portola Valley, as well as portions of the Stanford University property. These communities and cities have various land use designations that border Menlo Park, consisting mostly of residential and commercial uses.

1. Noise Measurements

Existing ambient noise levels were measured at 16 locations in the EA Study Area to document representative noise levels at several locations. These locations are shown on Figure 4.10-1. Short-term (ST) noise level measurements were taken at thirteen locations for a minimum period of 15 minutes during the daytime on December 6, 2012 and December 10, 2012, all between the hours of 10:00 a.m. and 6:00 p.m.

Long-term (LT) noise level measurements were taken at three locations for a period of 24 hours on December 10 and 11, 2012. The noise levels were measured using a Larson-Davis Model 820 sound level meter, which satisfies the American National Standards Institute for Type 1 general environmental noise measurement instrumentation. The sound level meter and microphone were mounted on a tripod 5 feet above the ground and equipped with a windscreen during all short-term measurements. For long-term measurements, the microphone and windscreen were attached to available objects including a fence and two sturdy trees/shrubs.

TABLE 4.10-5 GROUNDBORNE VIBRATION AND NOISE IMPACT CRITERIA

Land Use Category	Groundborne Vibration Impact Levels (VdB re 1 micro-inch/ second)		Groundborne Noise Impact Levels (dB re 20 micropascals)	
	Frequent Events ^a	Infrequent Events ^b	Frequent Events ^a	Infrequent Events ^b
Category 1: Buildings where low ambient vibration is essential for interior operations.	65 VdB ³	65 VdB ³	NA ⁴	NA ⁴
Category 2: Residences and buildings where people normally sleep.	72 VdB	80 VdB	35 dBA	43 dBA
Category 3: Institutional land uses with primarily daytime use.	75 VdB	83 VdB	40 dBA	48 dBA

^a "Frequent Events" is defined as more than 70 vibration events per day.

^b "Infrequent Events" is defined as fewer than 70 vibration events per day.

^c This criterion limit is based on levels that are acceptable for most moderately sensitive equipment such as optical microscopes. Vibration-sensitive manufacturing or research will require detailed evaluation to define the acceptable vibration levels.

^d Vibration-sensitive equipment is not sensitive to groundborne noise.

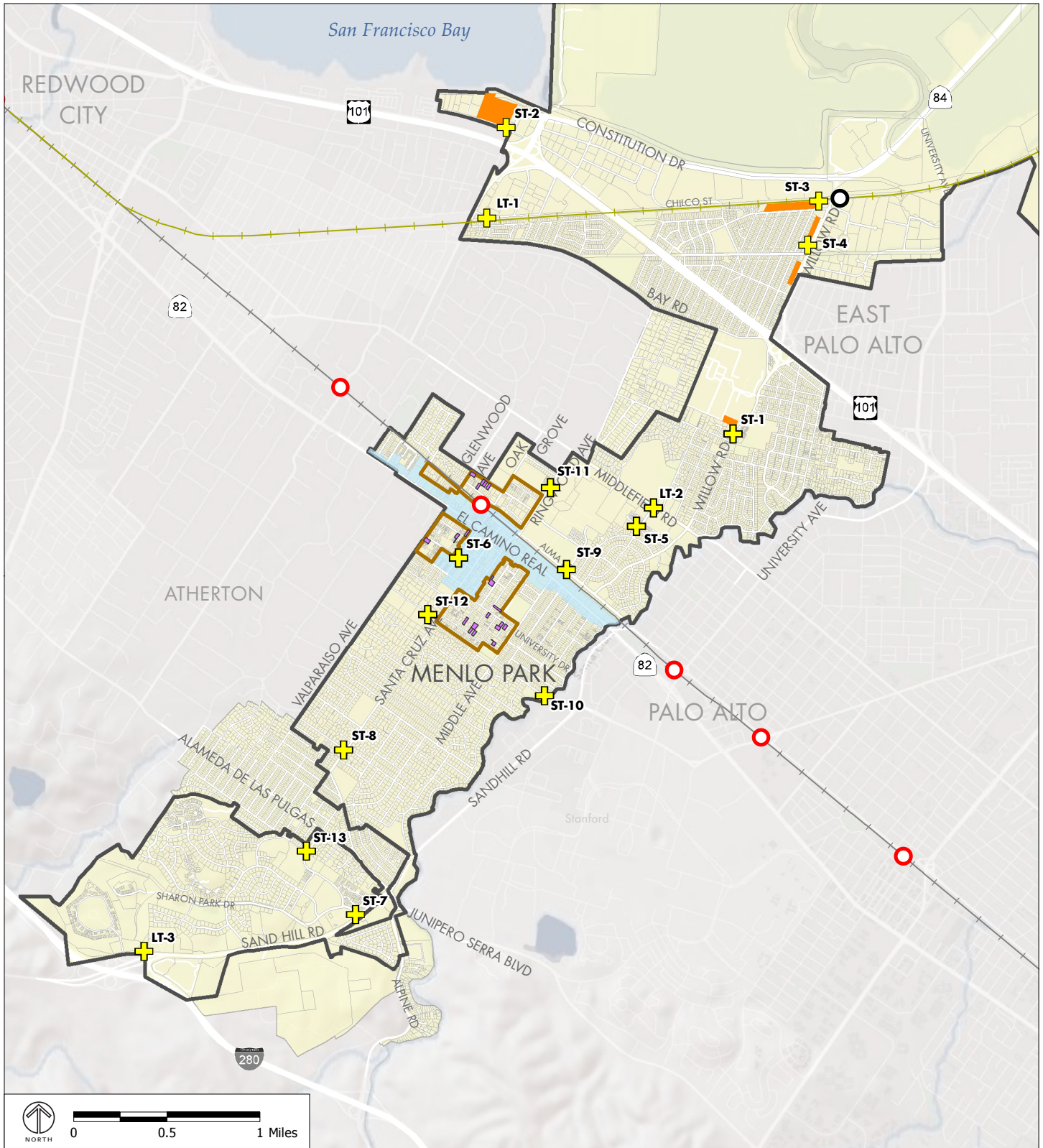
Source: United States Department of Transportation Federal Transit Administration, "Transit Noise and Vibration Impact Assessment" manual, May 2006.

TABLE 4.10-6 GROUNDBORNE VIBRATION CRITERIA: ARCHITECTURAL DAMAGE

Building Category	PPV (in/sec)	L _v (VdB) ^a
I. Reinforced concrete, steel, or timber (no plaster)	0.5	102
II. Engineered concrete and masonry (no plaster)	0.3	98
III. Non-engineered timber and masonry buildings	0.2	94
IV. Buildings extremely susceptible to vibration damage	0.12	90

^a RMS velocity calculated from vibration level (VdB) using the reference of one micro-inch/second.

Source: Federal Transit Administration, Transit Noise and Vibration Impact Assessment, 2006.



Source: City of Menlo Park; The Planning Center | DC&E, 2012; ESRI 2010; FHA 2002.

- | | | |
|----------------------------|--|---------------------|
| Noise monitoring locations | Lots with Additional Housing Unit Potential | City Limits |
| Potential Station Location | Infill Areas around Downtown | Sphere of Influence |
| CalTrain Stations | El Camino Real/Downtown Specific Plan | |
| CalTrain ROW | Potential Sites to be Studied for Rezoning to Higher Density | |
| Dumbarton Rail Corridor | | |

FIGURE 4.10-1

NOISE MONITORING LOCATIONS

The sound level meters were programmed to record noise levels with the “slow” time constant and using the “A” weighting filter network. Meteorological conditions during the measurement periods were favorable and were noted to be representative of typical conditions for the season. Generally, conditions included clear to partly cloudy skies, daytime temperatures of approximately 60 to 70 degrees Fahrenheit (°F), and less than 5-mile-per-hour winds. The following describes the noise level measurement locations:

a. Long-Term Location 1

Long-term noise monitoring Location 1 was located in a grassy area adjacent to a Union Pacific railway and directly across the street from the U.S. Post Office at 3875 Bohannon Drive. The microphone was positioned approximately 20 feet from the centerline of Bohannon Drive and 64 feet from the center of the adjacent railroad track. 24-hour noise readings commenced at 2:20 p.m. on Monday, December 10, 2012, at which time the air temperature was 68°F and winds were less than 5 miles per hour (mph).

In addition to the adjacent post office, immediate nearby land use to long-term Location 1 is primarily commercial, with moderately-sized, freestanding office buildings with surrounding parking lots. Some light industrial uses, primarily warehousing, are located approximately 500 feet to the east of the site, and residential uses are present approximately 450 feet to the west of the site and 100 feet to the south, across the railroad tracks. The noise environment of this site was characterized primarily by noise from vehicles along Marsh Road and Bohannon Drive, as well as in the post office parking lot and loading area. Noise from more distant traffic along Highway 101 was also noted. Given the site’s close proximity to the post office, it is likely that the area experiences additional noise at certain times of day by deliveries and vehicle arrivals and departures. Though there is a railroad track adjacent to the site, this railway terminates shortly past the site and is currently little used. Consequently, no train passages were noted during site set up, and it is possible that none occurred during the monitoring period.

b. Long-Term Location 2

Long-term noise monitoring Location 2 was located in a landscaped area adjacent to a parking lot serving a collection of commercial buildings at 155 Linfield Road, adjacent to its intersection with Middlefield Road. The microphone was positioned 55 feet from the centerline of Middlefield Road and 40 feet from the centerline of Linfield Drive. 24-hour noise readings commenced at 4:00 p.m. on Monday, December 10, 2012, at which time the temperature was 67°F and the winds were calm.

Land uses surrounding long-term Location 2 are generally commercial, with small office buildings and associated parking lots. The area across Middlefield Road from the site is characterized by mix of governmental

and religious institutional uses, including the Menlo Park Fire Department and St. Patrick's Seminary and University. Additional, residential land uses can be found approximately 550 feet to both the southwest and northeast of this site. The noise environment of Location 2 was dominated by the sound of traffic along Middlefield Road. Though no other noises were noted as making significant contributions to the noise environment, it is likely that emergency vehicles from the adjacent fire station do occasionally contribute to the noise environment and that other noises may become discernible at times of low traffic along Middlefield Road.

c. Long-Term Location 3

Long-term noise monitoring Location 3 was located in a heavily treed strip located between Sand Hill Road and the parking area for the Sharon Heights Country Club. The microphone was positioned at the following approximate distances: 50 feet from the centerline of a local-access segment of Sand Hill Road; 160 feet from the centerline of the west-bound lanes of the main Sand Hill Road; 310 feet from the centerline of the east-bound lanes of the main Sand Hill Road; and 780 feet from the centerline of nearby Interstate 280. The 24-hour noise readings commenced at 5:02 p.m. on Monday, December 10, 2012, at which time the air temperature was 58°F and winds were calm.

Roadways and parking lots are the primary land uses in the immediate vicinity of long-term Location 3, and the nearest non-transportation, human-occupied structures are located 330, 430, and 500 feet from the site. Aside from the country club, nearby land uses are commercial and research and development offices. The nearest residential uses are approximately 750 feet from the site. The noise environment of long-term Location 3 is heavily dominated by traffic along Interstate 280 and Sand Hill Road, especially traffic using Sand Hill road to access Interstate 280. Traffic noise at this site was constant and sufficiently loud as to prevent the discernment of any other significant noise sources.

d. Short-Term Location 1

Short-term noise monitoring Location 1 was located on the site of a vacant commercial structure at 557 Willow Road on the northwest side of the street. The microphone and sound meter were positioned approximately 45 feet from the centerline of Willow Road. Fifteen minutes of noise measurements were taken beginning at 3:57 p.m. on Thursday, December 6, 2012, at which time the air temperature was 58°F and winds were calm.

Land uses in the vicinity of short-term Location 1 consisted primarily of low-to-medium density residential and low-intensity commercial, with a small surgical hospital located across Willow Road. The noise envi-

ronment of the site is dominated by traffic along Willow Road and at its intersection with Coleman Avenue. Some noise from aircraft was also briefly noted at the site.

e. Short-Term Location 2

Short-term noise monitoring Location 2 was located adjacent to the sidewalk on an industrial property at 3705 Haven Avenue. The microphone and sound meter were positioned approximately 40 feet from the centerline of Haven Avenue. Fifteen minutes of noise measurements were taken beginning at 2:38 p.m. on Monday, December 10, 2012, at which time the air temperature was 68°F and winds were calm.

Land uses in the vicinity of short-term Location 2 are primarily light to medium industrial, with some incidental office uses. The nearest non-industrial uses are medium-density residential uses located approximately 700 feet to the southwest of the site across Highway 101. The noise environment of short-term Location 2 was dominated by the sound of passing cars and trucks on Haven Avenue, as well as by the ongoing background noise of traffic along Highway 101. Additional noise included the sound of idling vehicles visiting the industrial uses along Haven Avenue, as well as the occasional sound of distant machinery.

f. Short-Term Location 3

Short-term noise monitoring Location 3 was located in an area of landscaped grass and shrubs adjacent to a small strip commercial center on the northwest corner of the intersection of Hamilton Avenue and Willow Road. The microphone and sound meter were positioned approximately 230 feet from Hamilton Avenue, 320 feet from the centerline of Willow Road, and 60 feet from the center of the adjacent Union Pacific railway. 15 minutes of noise measurements were taken beginning at 4:55 p.m. on Thursday, December 6, 2012, at which time the air temperature was 56°F and winds were calm.

The land uses immediately adjacent to short-term Location 3 are a mix of low-intensity commercial retail and light industrial. Adjacent commercial uses currently include mostly small, quick-service restaurants, as well as a service station, located across Hamilton Avenue from the site. The existing adjacent light industrial uses relate primarily to storage and distribution, with some industrial research and development located across Willow Road from the site. The railroad located adjacent to the site is near the end of the same rail line mentioned in the description of long-term monitoring Location 1. Likely due to the lack of train connections and relatively few industrial operations that appear to use the line, no train passages were observed at short-term Location 3, and it is likely that very few trains pass through this area on a regular basis. The current noise environment of this site is dominated by the sound of passing traffic along Willow Road, the

Bayfront Expressway, and Hamilton Avenue. Other sources of noise included vehicles and human voices in the parking lot of the small strip retail center.

g. Short-Term Location 4

Short-term noise monitoring Location 4 was located in a shared yard adjacent to a parking area serving multiple medium-density apartment buildings in the vicinity of 1307 Willow Road. The parking area and adjacent yard were separated from Willow road by a low stone wall approximately 4 feet in height. The microphone and sound meter were positioned approximately 102 feet from the centerline of Willow Road and 60 feet from the low wall. Fifteen minutes of noise measurements were taken beginning at 4:29 p.m. on Thursday, December 6, 2012, at which time the air temperature was 56°F and winds were calm.

Land uses immediately adjacent to Location 4 were primarily medium-density, multi-family residential with a small stand-alone retail market located approximately 116 feet to the southwest of the site. Land uses across Willow Street from the site were primarily industrial. The noise environment of short-term Location 4 was characterized mainly by the sound of passing traffic along Willow Road, but also included the frequent sounds of passing vehicles and people in the parking area of the apartment buildings. Additional noise came from a passing school bus, as well as from the arrival, departure, and idling of large trucks serving the industrial uses across Willow Road.

h. Short-Term Location 5

Short-term noise monitoring Location 5 was located in a grassy landscaped area adjacent to a currently vacant, low-intensity office building. The microphone and sound meter were positioned approximately 740 feet from the centerline of Middlefield Road, 40 feet from the centerline of Homewood Place, and 60 feet from the centerline of Linfield Drive. 15 minutes of noise measurements were taken beginning at 1:50 p.m. on Thursday, December 6, 2012, at which time the air temperature was 59°F and winds were less than 5 mph.

The land uses immediately adjacent to short-term Location 5 are a mix of single-family and low-density multifamily residential, with additional low-intensity office uses located immediately to the northwest and approximately 330 feet to the northeast of the site. The site was notably quiet with most noise coming from the occasional passing of vehicles along Linfield Drive and, to a lesser extent, Homewood Place. It was also possible to discern the sound of distant traffic on Middlefield road, as well as occasional noise from small aircraft and from human activity in the adjacent neighborhood.

i. Short-Term Location 6

Short-term noise monitoring Location 6 was located on a sidewalk adjacent to a large parking lot serving Downtown Menlo Park. The microphone and sound meter were positioned approximately 20 feet from the centerline of Crane Street and 30 feet from the centerline of Oak Grove Avenue. 15 minutes of noise measurements were taken beginning at 2:32 p.m. on Thursday, December 6, 2012, at which time the air temperature was 60°F and winds were calm.

Land uses surrounding short-term Location 6 are primarily commercial, with a mixture of low-to-medium intensity office and small retail shops. The area immediately adjacent to the site is entirely devoted to parking which serves downtown Menlo Park. Some scattered, low and medium density residential uses are present in the general vicinity of the site, with the nearest residential use located about 275 feet to the Northwest of the site. The noise environment of Location 6 is dominated by the sound of passing traffic along Crane Street and Oak Grove Avenue. Other noise included the sound of passing people, as well as sounds from the adjacent parking lot. It was also possible to hear the distant sound of trains and train whistles from the Caltrain tracks approximately 0.3-mile to the northeast.

j. Short-Term Location 7

Short-term noise monitoring Location 7 was located in the center median of Sharon Park Drive at its intersection with Sand Hill Road. The microphone and sound meter were positioned approximately on the centerline of Sharon Park Drive and approximately 100 feet from the centerline of Sand Hill Road. Fifteen minutes of noise measurements were taken beginning at 11:12 a.m. on Thursday, December 6, 2012, at which time the air temperature was 58°F and winds were less than 5 mph.

The land uses immediately surrounding short-term Location 7 include low-intensity commercial and low-density residential. The adjacent commercial use is a busy neighborhood-serving shopping center; additional commercial office uses are also present as near as approximately 550 feet from the site. The noise environment of Location 7 is dominated by the sound of traffic on both Sand Hill Road and Sharon Park Drive, and no other significant sources of noise could be discerned.

k. Short-Term Location 8

Short-term noise monitoring Location 8 was located in a small landscaped area adjacent to a single-family home at the intersection of North Lemon and Santa Cruz Avenues. The microphone and sound meter were positioned approximately 40 feet from the centerline of Santa Cruz Avenue and 32 feet from the Cen-

terline of North Lemon Avenue. Fifteen minutes of noise measurements were taken beginning at 11:48 a.m. on Thursday, December 6, 2012, at which time the air temperature was 59°F and winds were calm.

Land use in the vicinity of Location 8 is entirely single-family residential with some scattered educational and religious institutional uses. The nearest commercial land uses are more than 0.33-mile from the site. The noise environment of Location 8 is characterized primarily by traffic along Santa Cruz Avenue. Although it was possible at times to discern other noises from the surrounding neighborhood, vehicle traffic is the dominant source of noise.

l. Short-Term Location 9

Short-term noise monitoring Location 9 was located at the intersection of Alma Street and Burgess Drive, on a sidewalk adjacent to a parking area serving the athletic fields at the Menlo Park Civic Center. The microphone and sound meter were positioned approximately 35 feet from the centerline of Burgess Avenue, 50 feet from the Centerline of Alma Street, and 140 feet from the center of the Caltrain railroad tracks. 15 minutes of noise measurements were taken beginning at 12:56 p.m. on Thursday, December 6, 2012, at which time the air temperature was 59°F and wind speeds were less than 5 mph.

The land uses immediately surrounding short-term Location 9 include recreational, medium-density residential, and low-intensity commercial office. Other nearby land uses include single-family residential, commercial retail, and civic uses. The noise environment of Location 9 was characterized by the sound of passing traffic, primarily that on Alma Street. Other notable sources of noise included team sports on the adjacent athletic fields, sound from passing pedestrians, and the passage of a train on the Caltrain tracks.

m. Short-Term Location 10

Short-term noise monitoring Location 10 was located across from 1090 Creek Drive, alongside San Francisco Creek on the southeastern border of Menlo Park. The microphone and sound meter were positioned approximately 12 feet from the centerline of Creek Drive. The 15 minutes of noise measurements were taken beginning at 3:11 p.m. on Thursday, December 6, 2012, at which time the air temperature was 59°F and winds were calm.

The land uses immediately adjacent to short-term Location 10 are entirely single-family residential; however, institutional uses and medium-density senior-living facilities are located across San Francisco Creek, at respective distances of 300 and 225 feet from the site. It should be noted that these land uses fall within the City of Palo Alto. Additionally, there exists a small community-center type use along Arbor Road, approx-

imately 320 feet from the site. Location 10 was situated on a narrow street in a notably quiet area, and its noise environment was most consistently characterized by the faint sound of distant traffic, with only an occasional vehicle passage along Creek Drive. Other common sounds included human activity in the surrounding neighborhood, as well as the sound of water in San Francisquito Creek. More occasionally, it was possible to discern the sound of small aircraft and distant train whistles.

n. Short-Term Location 11

Short-term noise monitoring Location 11 was located at 333 Ravenswood Avenue in a treed landscaped area between Ravenswood Avenue and a parking area serving a large-scale institutional use. The microphone and sound meter were positioned approximately 50 feet from the centerline of Ravenswood Avenue. The property across Ravenswood Avenue from the monitoring site included a long cinderblock soundwall, approximately 12 feet in height. The 15 minutes of noise measurements were taken beginning at 1:22 p.m. on Thursday, December 6, 2012, at which time the air temperature was 58°F and wind speeds were less than 5 mph.

The area surrounding short-term Location 11 was dominated by the institutional land use of SRI International, a research institution associated with Stanford University. Though currently undeveloped, the area immediately across Ravenswood Avenue from the site—and located behind the sound-wall noted above—is also institutional to and belongs the Corpus Christi Monastery. Other nearby land uses include low- to medium-density residential, low-intensity commercial, and other institutional uses. The noise environment of Location 11 was dominated by passing traffic along Ravenswood Avenue, and no other significant sources of noise were readily discernible.

o. Short-Term Location 12

Short-term noise monitoring Location 12 was located at 1140 Arbor Road adjacent to a small parking lot serving a private, parochial elementary school. The microphone and sound meter were positioned approximately 16 feet from the centerline of Arbor Road, 45 feet from the adjacent school building, and 360 feet from the centerline of Santa Cruz Avenue. The 15 minutes of noise measurements were taken beginning at 12:18 p.m. on Thursday, December 6, 2012, at which time the air temperature was 59°F and winds were calm.

Aside from the adjacent church and associated parochial school, land uses immediately surrounding Location 12 are entirely single family residential, with some more distant low-intensity multi-family uses. The nearest non-residential land uses are commercial retail, located approximate 1,100 feet to the northeast of the

site. The noise environment of Location 12 was characterized primarily by the sound of children at play in the schoolyard of the adjacent elementary school, with occasional vehicle passages on Arbor Road. At times it was also possible to hear the sound of distant traffic on Santa Cruz Avenue. Otherwise, no significant sources of noise were noted.

p. Short-Term Location 13

Short-term noise monitoring Location 13 was located in a small unpaved area at 2199 Sharon Road, at its intersection with Altschul Avenue. The microphone and sound meter were positioned approximately 24 feet from the centerline of Sharon Road and 32 feet from the centerline of Altschul Avenue. The microphone was also located approximately 5 feet from an area of shrubbery; however no fence or wall was present. The 15 minutes of noise measurements were taken beginning at 10:20 a.m. on Thursday, December 6, 2012, at which time the air temperature was 57°F and wind speeds were less than 5 mph.

Land uses immediately adjacent to short-term Location 13 included the institutional use of a public middle school as well as both single-family, low-density residential and multi-family, medium-density residential. The nearest commercial uses are located approximately 1,100 feet to the north of the site. The noise environment of Location 13 was characterized primarily by the sound of passing vehicles, primarily on Sharon Road, as well as by the sound of children at play at the adjacent middle school. Other sources of noise included birds and occasional passersby. No other significant sources of noise were noted.

The results of both the Long Term and Short Term measurements are summarized in Table 4.10-7.

2. Noise Sources in Menlo Park

a. On-Road Vehicles

Freeways that run along the City's northeastern and southwestern boundaries are U.S. Highway 101 and Interstate 280, respectively; Highway 84, which becomes the Dumbarton bridge, also runs east to west across the northern end of the City. In addition to the previously mentioned highways, major roadways running northwest to southeast through Menlo Park include El Camino Real and Middlefield Road. Major northeast to southwest roadways include Willow Road, Ravenswood Avenue, Santa Cruz Avenue, and Sand Hill Road. Together, these highways and streets comprise the major roads in the City of Menlo Park.

TABLE 4.10-7 NOISE LEVEL MEASUREMENTS

Monitoring Site	L _{min}	L _{eq}	L _{max}	CNEL
LT-1	—	—	—	67.1
LT-2	—	—	—	68.6
LT-3	—	—	—	67.5
ST-1	52.2	67.3	74.4	—
ST-2	53.9	63.6	78.8	—
ST-3	50.6	56.5	60.9	—
ST-4	50.9	59.5	72.3	—
ST-5	41.3	55.9	71.3	—
ST-6	51.5	62.9	82.6	—
ST-7	52.6	69.1	79.4	—
ST-8	48.5	69.8	80.2	—
ST-9	44.7	60.9	78.2	—
ST-10	42.1	49.2	67.8	—
ST-11	46.6	66.8	78.2	—
ST-12	42.2	54.6	72.6	—
ST-13	41.2	57.4	72.6	—

Source: Noise monitoring conducted by The Planning Center | DC&E between 10:19 a.m. and 5:10 p.m. on December 6, 2012, and between 2:36 p.m. December 10, 2012 and 5:16 p.m. December 11, 2012.

b. Train Noise

One major and one minor rail line traverse Menlo Park. One rail line, which crosses the northern-most portion of the City from east to west, is a little-used segment of a former Union Pacific line, which once crossed San Francisco Bay. This railway currently consists of a single track and the rail bridge that served as the connection for this line that is no longer functional; however, this bridge is planned for reconstruction and future use as part of the Dumbarton Rail Project.

The second and more major rail line which crosses the EA Study Area is the Caltrain right-of-way, which bisects a portion of Menlo Park along the City's short northwest-southeast axis. The Caltrain tracks run in the area between Camino Real and Alma Road, entering the City at Watkins Avenue and exiting to Palo Alto at San Francisquito Creek. Caltrain runs on a double track throughout its entire length through Menlo Park, and its right-of-way is owned and administered by the Peninsula Corridor Joint Powers Board. Menlo Park is served by one Caltrain station along this line, and though there are currently only 65 week-day daily stops at this station (either northbound or southbound), more than 90 trains pass either north or south through Menlo Park on a daily basis during the work week. The sheer number of passings by these diesel-powered commuter trains ensures that the activity along the Caltrain railway contributes significantly to the ambient noise environment of nearby areas of Menlo Park.

c. Heliports

There are no heliports within the EA Study Area; however, Stanford University Hospital does operate one heliport, which is located approximately 0.4-mile to the southeast of the nearest border with Menlo Park.

d. Aircraft Noise

Menlo Park is located approximately 6 miles to the northwest of Moffet Federal Airfield, 14 miles to the northwest of the San Jose International Airport, 15 miles to the southeast of San Francisco International Airport, and 18 miles to the south of Oakland International Airport. The EA Study Area is also located in close proximity to two smaller airports; with portions of Menlo Park as near as 2 miles from the Palo Alto Airport and other areas of the EA Study Area as near as approximately 4 miles from the San Carlos Airport. Additional small airports in the vicinity include the Hayward Executive Airport, at 11 miles away, and the Half Moon Bay airport, at 16 miles away. Although Menlo Park does receive some noise from aircraft using these facilities, Menlo Park does not fall within the airport land use planning areas, runway protection zones, or the 55 dBA CNEL noise contours of any of these airports.

e. Stationary Source Noise

Stationary sources of noise may occur from all types of land uses. The EA Study Area is mostly developed with residential, commercial, and some light industrial uses. Commercial uses can generate noise from heating, ventilation, air conditioning (HVAC) systems, loading docks, trash compactors, and other sources. Industrial uses may generate noise from HVAC systems, loading docks, and machinery required for manufacturing processes. Noise generated by commercial uses is generally short and intermittent. Industrial uses may generate noise on a more continual basis, or intermittently, depending on the processes and types of machinery involved.

In addition to on-site mechanical equipment, which generates stationary noise, warehousing and industrial land uses generate substantial truck traffic that results in additional sources of noise on local roadways in the vicinity of industrial operations.

For the EA Study Area, the vast majority of the area's limited industrial operations are located in the far northern reaches of Menlo Park, and are usually separated from sensitive uses, such as residences, by either rail lines or by major roads. In both cases, this added distance serves to decrease the noise perceived by these receptors and, in the case of major roads, the noise from the roads was generally observed to exceed that from the industrial uses. Residential areas with the greatest potential to be impacted by noise from industrial operations include those along the previously mentioned Union Pacific rail right-of-way (Dumbarton Rail Corridor) and those along the northern end of Willow Road between Ivy Drive and the Bayfront Expressway.

Outdoor activities that occur on school campuses throughout the EA Study Area generate noticeable levels of noise in the vicinity of the campus. While it is preferable to have schools located within a residential setting to support the neighborhood, noise generated on both the weekdays (from physical education classes and sports programs) and weekends (from use of the fields and stadiums by youth organizations) can elevate community noise levels.

D. Standards of Significance

The California Environmental Quality Act (CEQA) includes qualitative guidelines for determining significance of adverse environmental noise impacts. The Plan Components would create a significant noise impact if it would:

1. Expose persons to or generate noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.
2. Expose persons to or generate excessive ground-borne vibration or ground-borne noise levels.
3. A permanent increase in ambient noise levels in the project vicinity above levels existing without the project.
4. Create a substantial temporary, periodic, or permanent increase in ambient noise levels in the project vicinity above levels existing without the project.

5. For projects within an area covered by an airport land use plan or within 2 miles of a public airport or public use airport when such an airport land use plan has not been adopted, or within the vicinity of a private airstrip, expose people residing or working in the project area to excessive aircraft noise levels.
6. For a project within the vicinity of a private airstrip, expose people residing or working in the project area to excessive noise levels.

E. Impacts Discussion

1. Expose persons to or generate noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.

Based on local noise criteria as established by the City, a significant impact would result if:

- New land uses would expose noise-sensitive land uses to noise levels that are clearly incompatible with the projected ambient noise levels (see Table 4.10-4).

The proposed land use changes associated with the Plan Components are limited to those which would allow the development of mainly multi-family housing on five specifically identified sites. Since residential areas do not generate substantial noise to surrounding areas, there would be no long-term noise impacts to sensitive receptors adjacent to each of the housing sites, and no mitigation would be required. The following evaluates compatibility with the ambient noise at each housing site.

Some of the housing sites would be exposed to transportation noise from rail activity, as well as traffic on Highway 101, and Highway 84. All future housing permitted under the Plan Component would be exposed to traffic noise on local roads. Housing Site 2 and 3 (MidPen's Gateway Apartments), Site 4 (Hamilton Avenue), and Site 5 (Haven Avenue) would be exposed to traffic noise on Highway 101 and State Highway 84. Traffic noise from the US 101 and local roads will continue to be one of the major sources of noise within the EA Study Area. According to volume forecasts included in the traffic impact analysis, traffic on the US 101 and State Highway 84 freeway is anticipated to increase anywhere from 25 to 66 percent from existing conditions. Traffic noise increases are discussed in further detail in impact discussion E.2, below.

Housing Site 3 (MidPen's Gateway Apartments) and Site 4 (Hamilton Avenue) would be exposed to railroad activity on the Dumbarton Rail Corridor line. The Dumbarton Rail Corridor line currently sees little rail traffic due to its lack of connections and the limited presence of industrial operations that would make use

of it. While any trains currently using this railway would contribute to the ambient noise in the surrounding areas, the infrequency of trains along this short line serves to limit this contribution. Although the historical Transbay connection associated with this line is currently severed, a rebuilt rail bridge is planned for a future Dumbarton commuter rail service. This project is planned to provide new commuter service between the Peninsula and the East Bay cities of Fremont, Newark, and Union City. This project would also serve to connect several other regional and commuter rail systems to the Peninsula, specifically BART, Amtrak's Capital Corridor, and the Altamont Express. There is no set groundbreaking or completion date for this project; however, if completed, it would lead to greatly increased train frequency along this railway. Other residential areas in Menlo Park are located in close proximity to the Caltrain rail line. Plans for the eventual electrification of Caltrain could reduce some of the noise associated with Caltrain; however, Caltrain is likely to remain a significant contributor to ambient noise in these areas. Furthermore, with the planned addition of California High-Speed Rail operations to the Caltrain right-of-way, it is likely that this corridor would be subject to increased ambient noise in the future. Though there are no firm projections of future train frequency or associated noise for Caltrain, California High-Speed Rail, or the Dumbarton Rail at this time, the project-level review of any developments proposed in these locations should consider the strong possibility of such future noise.

The City's General Plan Noise Element includes guidelines to assess land use and noise compatibility. Table 4.10-4 presents noise levels that are "normally acceptable," "conditionally acceptable," "normally unacceptable," and "clearly unacceptable" for the development of residential uses. For the purpose of this analysis and consistent with the noise compatibility guidelines included in the Noise Element of the City's General Plan, housing sites with portions exposed to noise levels below 60 dBA CNEL are considered "normally acceptable," from 60 to 70 dBA CNEL are considered "conditionally acceptable", from 70 to 75 dBA CNEL "normally unacceptable", and over 75 dBA CNEL "clearly unacceptable" for the development of residential areas.

Existing ambient noise levels were measured at 16 locations in the EA Study Area to document representative noise levels at housing sites and areas of the EA Study Area in proximity to railroad lines, major roads, and freeways. As shown in Table 4.10-7, all noise measurement resulted in levels below 70 dBA CNEL or Leq. Any developments undertaken pursuant to these land use changes would be required to comply with applicable interior noise standards by design, as required by the character of the surrounding noise environment.

- a. Noise generated by the future development under the Plan Components would result in stationary, non-transportation noise exceeding the applicable standards (see Table 4.10-4) at noise-sensitive receptors.

All land use changes associated with the Plan Components are to allow new residential development, which is typically not associated with excessive levels of stationary, non-transportation noise. Sporadic outdoor play, amplified sound, the operation of lawnmowers and HVAC systems would sporadically increase ambient noise levels in the vicinity of each of the housing sites; however, it can reasonably be anticipated that none of these potential sources would result in sufficiently loud or continuous noise so as to result in a violation of the ambient noise standards adopted by the City. Noise from the housing sites would be compatible with noise-sensitive land uses and would not substantially affect nearby uses in the vicinity of each housing site. Excessive noise generation from building mechanical or HVAC systems, or other site-specific sources for discretionary projects would be addressed through compliance the City's existing noise ordinance, which provides standards and adequate remedies in the event that any of these sources unexpectedly results in the generation of noise sufficiently loud, continuous, or obnoxious so as to result in a violation.

Implementation of the following current and amended General Plan goals and policies would ensure the impacts identified above are *less than significant*.

i. Current General Plan Land Use and Circulation Element

- “ Policy I-A-2: New residential developments shall be designed to be compatible with Menlo Park's residential character.

ii. Amended General Plan Noise Element

- “ Program N-1.J: Evaluate Noise Related Impacts of City Actions as Appropriate. 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.
- “ Goal N-1: Achieve Acceptable Noise Levels. It is the goal of Menlo Park to have acceptable noise levels. Excessive noise is a concern for many residents of Menlo Park. These concerns can be managed with proper mitigation or through the implementation of the City's noise ordinance. The City of Menlo Park recognizes the issue of noise and has standards to protect the peace, health, and safety of residents and the community from unreasonable noise from any and all sources in the community and to strive to locate uses compatible to the area to minimize escalation of noise from mobile and stationary sources.

- “ Policy N-1.1: Compliance with Noise Standards. Consider the compatibility of proposed land uses with the noise environment when preparing or revising community and/or specific plans. Require new projects to comply with the noise standards of local, regional, and building code regulations, including but not limited to the City's Municipal Code, Title 24 of the California Code of Regulations, the California Green Building Code, and subdivision and zoning.
- “ Policy N-1.6: Noise Reduction Measures. Encourage the use of construction methods, state-of-the-art noise abating materials and technology and creative site design including, but not limited to, open space, earthen berms, parking, accessory buildings, and landscaping to buffer new and existing development from noise and to reduce potential conflicts between ambient noise levels and noise-sensitive land uses. Use sound walls only when other methods are not practical or when recommended by an acoustical expert.
- “ Policy N-1.3: Exterior and Interior Noise Standards for Residential Use Areas. Strive to achieve acceptable interior noise levels and exterior noise levels for backyards and/or common usable outdoor areas in new residential development, and reduce outdoor noise levels in existing residential areas where economically and aesthetically feasible.
- “ Policy N-1.8: Potential Annoying or Harmful Noise. Preclude the generation of annoying or harmful noise on stationary noise sources, such as construction and property maintenance activity and mechanical equipment.

2. Expose persons to or generate excessive ground-borne vibration or ground-borne noise levels.

CEQA does not specify quantitative thresholds for what is considered “excessive” vibration or ground-borne noise, nor do the City of Menlo Park or the County of San Mateo establish such thresholds. Therefore, based on criteria from the FTA, a significant impact would occur if:

- a. Implementation of the Plan Components would exceed the criteria for annoyance presented in Table 4.10-5.
- b. Implementation of the Plan Components would result in vibration exceeding the criteria presented in Table 4.10-6 that could cause buildings architectural damage.

The following discusses long-term operation and short-term construction impacts from implementation of the Plan Components:

i. Long-Term Operational Impacts from the Plan Components

The future development under the Plan Components does not propose any new roads or transportation infrastructure and therefore would not itself result directly in any new transportation-related sources of vibration. The land use changes proposed under the Plan Components would consist of development of residential development. As residential uses do not include vibration generating equipment, these sites would not result in long-term operational vibration impacts. There would be no long-term vibration impacts related to the Plan Components.

ii. Short-Term Construction Impacts

The effect on buildings in the vicinity of a construction site varies depending on soil type, ground strata, and receptor-building construction. The results from vibration can range from no perceptible effects at the lowest vibration levels, to low rumbling sounds and perceptible vibrations at moderate levels, to slight structural damage at the highest levels. Vibration from construction activities rarely reaches the levels that can damage structures, but groundborne vibration and groundborne noise can reach perceptible and audible levels in buildings that are close to the construction site. Table 4.10-8 lists vibration levels for construction equipment.

As shown in Table 4.10-8, vibration generated by construction equipment has the potential to be substantial. However, groundborne vibration is almost never annoying to people who are outdoors, so it is usually evaluated in terms of indoor receivers.² Significant vibration impacts may occur from construction activities for the housing sites. Implementation of the Plan Components anticipates an increase in development intensity, but specific locations, site plans, and construction details have not been developed at this time.

Construction would be localized and would occur intermittently for varying periods of time. Because specific, project-level information is not available at this time, it is not possible to quantify the construction vibration impacts at specific sensitive receptors.

In construction projects, grading and demolition activities typically generate the highest vibration levels during construction activities. Except for pile driving, maximum vibration levels measured at a distance of 25 feet from an individual piece of typical construction equipment do not exceed the thresholds for human annoyance for industrial uses, nor the thresholds for architectural damage.

² Federal Transit Administration, 2006. Transit Noise and Vibration Impact Assessment.

TABLE 4.10-8 **GROUNDBORNE VIBRATION LEVELS FOR CONSTRUCTION EQUIPMENT**

Equipment	Approximate Velocity Level at 25 Feet (VdB)	Approximate RMS ^a Velocity at 25 Feet (in/sec)
Pile Driver (impact) Upper Range	112	1.518
Pile Driver (impact) Lower Range	104	0.644
Pile Driver (sonic) Upper Range	105	0.734
Pile Driver (sonic) Lower Range	93	0.170
Large Bulldozer	87	0.089
Caisson Drilling	87	0.089
Jackhammer	79	0.035
Small Bulldozer	58	0.003
Loaded Trucks	86	0.076
FTA Criteria – Human Annoyance (Daytime)	78 to 90 ^b	—
FTA Criteria – Structural Damage	—	0.2 to 0.5 ^c

^a RMS velocity calculated from vibration level (VdB) using the reference of 1 micro-inch/second.

^b Depending on affected land use. For residential 78VdB, for offices 84 VdB, workshops 90 VdB.

^c Depending on affected building structure, for timber and masonry buildings 0.2 in/sec, for reinforced-concrete, steel, or timber 0.5 in/sec.

Source: Federal Transit Administration, Transit Noise, and Vibration Impact Assessment, 2006.

Goals and policies to reduce potential vibration impacts are listed below. Methods to reduce vibration during construction would include the use of smaller equipment, use of static rollers instead of vibratory rollers, and drilling piles as opposed to pile driving.

iii. Long-Term Operational Impacts to the Plan Components

Potential vibration impacts to the future development under the Plan Components would include vibration from stationary sources (industries) adjacent to the housing sites, and transportation sources such as heavy trucks and trains.

iv. Vibration Related to Transportation Activity

The California Department of Transportation (Caltrans) has studied the effects of propagation of vehicle vibration on sensitive land uses and notes that “heavy trucks, and, quite frequently, buses, generate the highest earthborn vibrations of normal traffic.” Caltrans further notes that the highest traffic-generated vibrations are along freeways and state routes. Their study finds that typically, trucks do not generate high levels of vibration because they travel on rubber wheels and do not have vertical movement, which generates ground vibration. Vibrations from trucks may be noticeable if there are any roadway imperfections such as potholes.³

Vibration from transportation sources are mostly related to rail activity. The potential development of residential projects in close proximity to rail lines could result in the perception of vibration by residents of those developments. According to the General Assessment methodology included in the Transit Noise and Vibration Assessment Manual,⁴ the screening distance to evaluate vibration impacts to residential areas due to commuter trains with diesel locomotives is 600 feet. Housing Site 4 (Hamilton Avenue) is adjacent to rail line would have the potential to be exposed to perceptible levels of vibration related to train activity. The rail line in proximity of housing Site 4 is a former Union Pacific line, which once crossed San Francisco Bay. There is currently very limited rail activity along this line. This rail line may be reconnected to the east bay to provide commuter rail service as part of the Dumbarton Rail Corridor. Several Goals and Policies to reduce vibration impacts are listed below. Environmental analyses would address potential vibration impacts along the rail line from increased train activity. It shall be noted that several residential areas exist in proximity of the railroad lines at similar distances to the tracks as the proposed housing sites. The City is unaware of complaints regarding excessive vibration from train activity. Through evaluation at the project level, any potential impacts could effectively be mitigated through appropriate building and site design. Therefore, development under the Plan Components is not expected to result in exposure to excessive transportation-related vibration and the impact would be *less than significant*.

v. Vibration Related to Industrial Activity

Of the five housing sites where land use changes are proposed, housing Sites 2, 3, 4, and 5 are located in close proximity to land currently designated for industrial use. At its nearest point, the northern portions of housing Site 2 is located approximately 200 feet across Willow Road from a light industrial moving and storage facility. Housing Site 3 (MidPen’s Gateway Apartments) is located approximately 200 feet across

³ Federal Transit Administration, 2006. Transit Noise and Vibration Impact Assessment.

⁴ Federal Transit Administration, 2006. Transit Noise and Vibration Impact Assessment.

Willow Road from a collection of scientific research and precision manufacturing facilities, none of which feature stand-alone machinery or indications of on-site power generation. Housing Site 4 (Hamilton Avenue) is located approximately 150 feet across a rail line from two industrial sites, one of which is currently vacant land with the other containing vacant industrial office use, with no apparent stand-alone machinery or on-site power generation. Housing Site 5 (Haven Avenue) would be located immediately adjacent to an existing garden and building materials supplier, as well as approximately 40 feet across Haven Avenue from a variety of automotive, and mechanical and plumbing repair uses. Due to distance and an initial review of the types of light industrial uses, it is anticipated that the operation of nearby industrial uses do not generate substantial vibration levels that would be incompatible with the development of the proposed housing sites.

Implementation of the following current, modified, and new General Plan goals, policies, and programs would ensure these impacts identified above are *less than significant*.

a) Amended General Plan Noise Element

- “ Policy N1.6: Noise Reduction Measures. Encourage the use of construction methods, state-of-the-art noise abating materials and technology and creative site design including, but not limited to, open space, earthen berms, parking, accessory buildings, and landscaping to buffer new and existing development from noise and to reduce potential conflicts between ambient noise levels and noise-sensitive land uses. Use sound walls only when other methods are not practical or when recommended by an acoustical expert.
- “ Policy N1.3: Exterior and Interior Noise Standards for Residential Use Areas. Strive to achieve acceptable interior noise levels and exterior noise levels for backyards and/or common usable outdoor areas in new residential development, and reduce outdoor noise levels in existing residential areas where economically and aesthetically feasible.
- “ Policy N1.7: Noise and Vibration from New Non-Residential Development. Design non-residential development to minimize noise impacts on nearby uses. Where vibration impacts may occur, reduce impacts on residences and businesses through the use of setbacks and/or structural design features that reduce vibration to levels at or below the guidelines of the Federal Transit Administration near rail lines and industrial uses.

3. A permanent increase in ambient noise levels in the project vicinity above levels existing without the project.

Based on applicable thresholds, a significant impact would occur if:

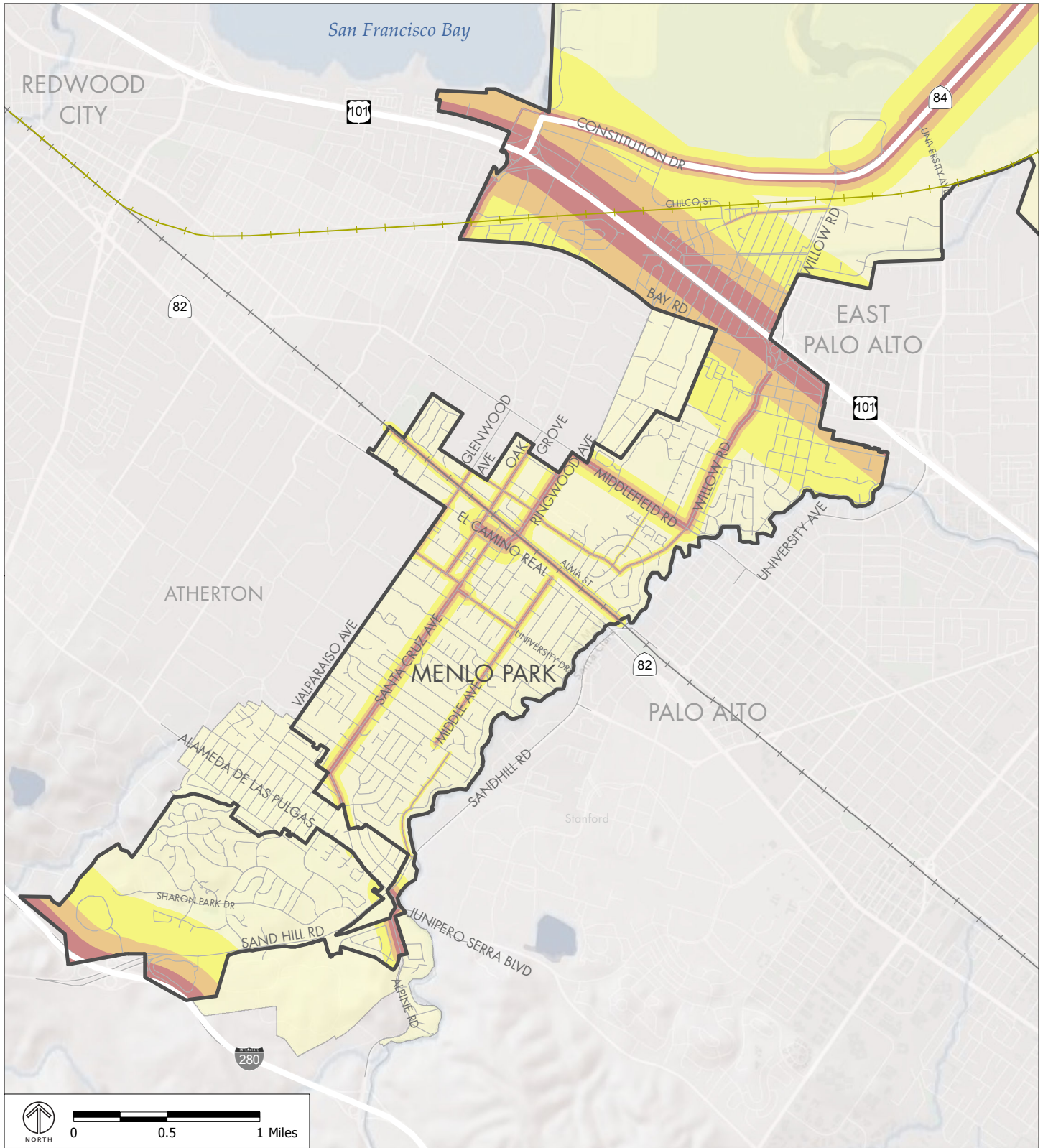
- a. Implementation of the Plan Components would cause traffic increases that would result in an increase in ambient noise at any noise-sensitive receptor by 5 dB. Although a 3 dB change in noise levels is the minimum necessary for human hearing to discern a change in noise levels, the Menlo Park Noise Element identifies 5 dBA as the amount of change needed to result in a noticeable change in community response.

Potential impacts from future development associated with the Plan Components stem mainly from the addition of *vehicles along roadways in the City*. The *average daily traffic (ADT) volumes derived from the Traffic Study for the Updated Housing Element in the City of Menlo Park*⁵ were used to identify roadway segments where future traffic noise levels would or may be substantially increased over existing conditions (2012). Traffic noise contour boundaries are often utilized by local land planning and zoning authorities to evaluate sound level exposures on land near roadways that is being considered for development. Noise contour boundaries are utilized in this analysis to assess the traffic noise level impacts associated with future development from implementation of the Plan Components under “2035 plus Plan Components conditions.” The 2035 with Plan Components conditions assume a one percent compound growth per year for increases in traffic volume within 21 years. In addition, this scenario adds traffic generated by the pending/approved projects within the City of Menlo Park and the El Camino Real/Downtown Specific Plan projects, plus the Stanford University Medical Center (SUMC), and the proposed trips generated from the Plan Components.

The traffic noise contour boundaries for existing and long-range conditions were estimated using the Federal Highway Administration (FHWA) Highway Traffic Noise Prediction Model (RD-77-108). The calculations showing the anticipated 60, 65, and 70 dBA CNEL contours represented as a distance from the centerline of each roadway segment for existing and 2035 plus-Plan Components scenario are included in Appendix E.

Figures 4.10-2 and 4.10-3 show the noise contours from railroad activities and roadway traffic along major thoroughfares within the EA Study Area for existing and 2035 plus Plan Components conditions, respectively. Noise levels in these figures do not account for noise attenuation provided by intervening structures or topographical barriers. Table 4.10-9 compares the calculated future (2035) noise levels for 2035 plus Plan Components conditions to the existing noise levels. Table 4.10-9 shows increases in noise levels adjacent to the EA Study Area roadway segments of up to 2.4 dBA.

⁵ TJKM Transportation Consultants, 2013. *Traffic Study of updated Housing Element in the City of Menlo Park*.



Source: City of Menlo Park; The Planning Center | DC&E, 2012; ESRI 2010; FHA 2002.

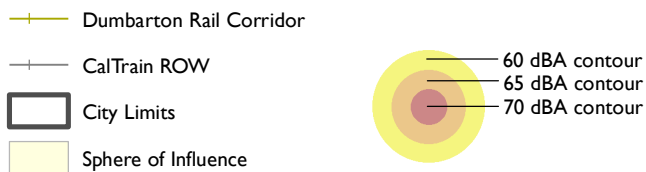
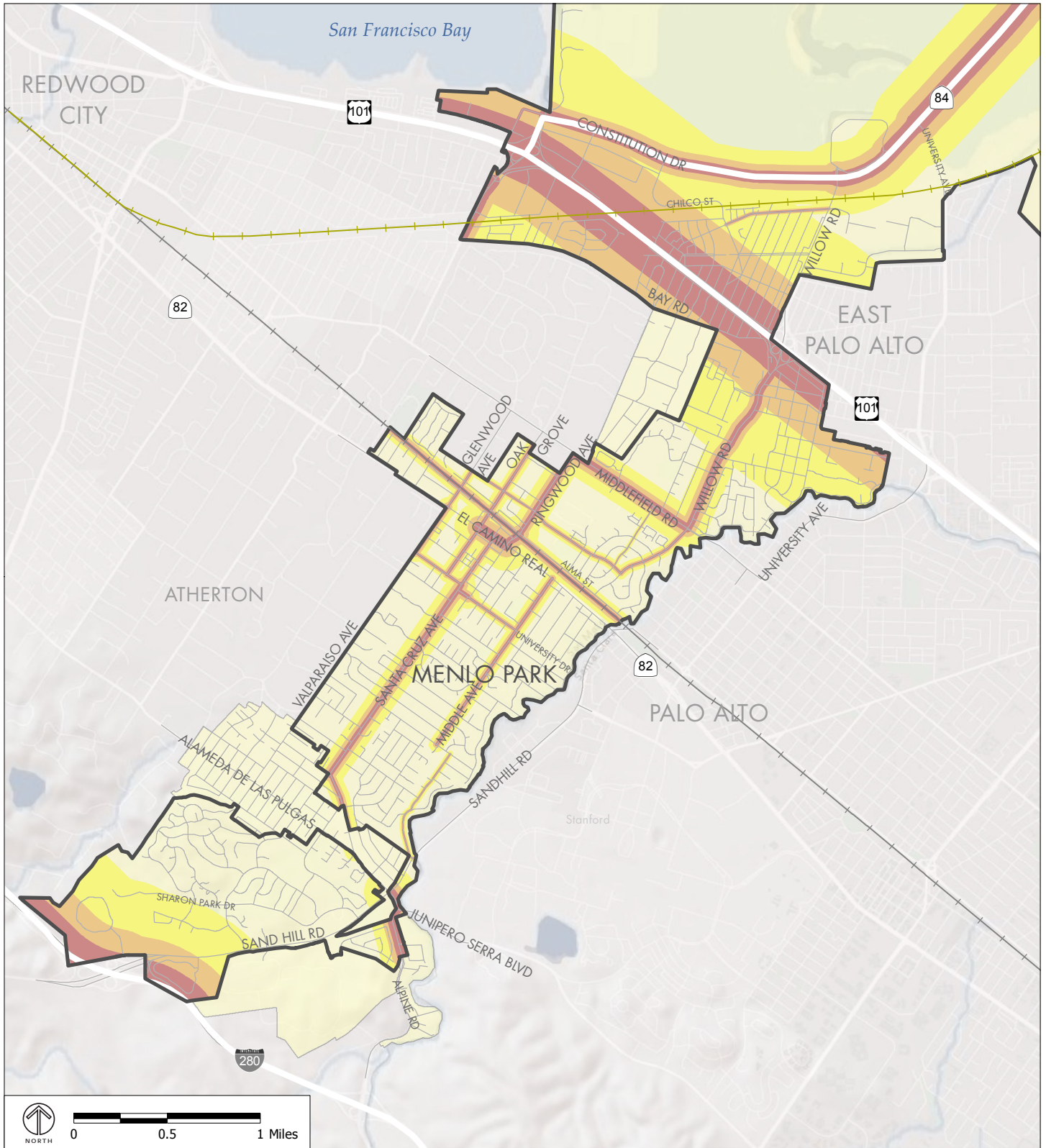


FIGURE 4.10-2

EXISTING NOISE CONTOURS



Source: City of Menlo Park; The Planning Center | DC&E, 2012; ESRI 2010; FHA 2002.

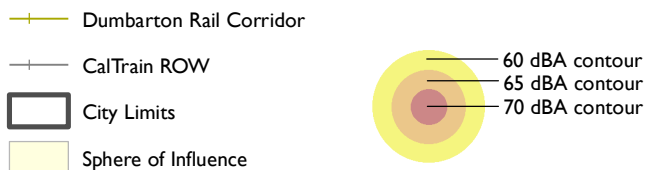


FIGURE 4.10-3

2035 NOISE CONTOURS

TABLE 4.10-9 LONG-RANGE NOISE INCREASE (2035 – EXISTING)

Roadway	Segment	CNEL at 100 Feet (dBA)		
		Existing	2035	Increase
Haven Ave	City Limits-Bayfront Expwy/Marsh Rd	62.6	64.5	1.9
Marsh Rd	Bay Rd-Bohannon Dr/Florence St	70.4	72.6	2.2
Marsh Rd	Bohannon Dr/Florence St-Scott Dr	71.2	73.3	2.1
Hamilton Ave	Chilco St-Willow Rd	59.8	62.0	2.1
Willow Rd	Laurel St-Middlefield Rd	61.1	63.5	2.4
Willow Rd	Middlefield Rd-Gilbert Ave	68.2	70.6	2.4
Willow Rd	Gilbert Ave-Coleman Ave	68.2	70.6	2.4
Willow Rd	Coleman Ave-Durham St/Hospital Ave	68.5	70.8	2.3
Willow Rd	Durham St/Hospital Ave-Bay Rd	69.1	71.2	2.1
Middlefield Rd	Ravenswood Ave-Willow Rd	69.2	70.9	1.7
Laurel St	Glenwood Ave-Oak Grove Ave	59.9	61.6	1.7
Laurel St	Oak Grove Ave-Ravenswood Ave	60.4	61.4	1.0
Laurel St	Ravenswood Ave-Willow Rd	60.9	62.8	1.9
University Dr	Middle Ave-Menlo Ave	61.5	63.2	1.7
University Dr	Menlo Ave-Santa Cruz Ave	66.4	67.9	1.5
University Dr	Santa Cruz Ave-Oak Grove Ave	62.4	63.6	1.2
University Dr	Oak Grove Ave-Valparaiso Ave	61.3	62.6	1.3
Valparaiso Ave/ Glenwood Ave	University Dr-El Camino Real	65.2	66.6	1.4
Valparaiso Ave/ Glenwood Ave	El Camino Real-Laurel St	61.7	63.0	1.3
Oak Grove Ave	University Dr -El Camino Real	64.0	65.0	1.1
Oak Grove Ave	El Camino Real-Laurel St	63.8	65.2	1.4
Oak Grove Ave	Laurel St-Middlefield Rd	63.3	64.3	1.0
Ravenswood Ave	El Camino Real-Alma St	68.9	70.9	2.0

TABLE 4.10-9 LONG-RANGE NOISE INCREASE (2035 – EXISTING)

Roadway	Segment	CNEL at 100 Feet (dBA)		
		Existing	2035	Increase
Ravenswood Ave	Alma St-Laurel St	67.0	68.8	1.8
Ravenswood Ave	Laurel St-Middlefield Rd	67.6	69.2	1.6
Santa Cruz Ave	Alameda de las Pulgas-Avy Ave/Orange Ave	64.7	66.3	1.6
Santa Cruz Ave	Avy Ave/Orange Ave-Olive St	67.1	68.8	1.7
Santa Cruz Ave	Olive St-University Dr	67.4	69.0	1.6
Santa Cruz Ave	University Dr-Crane St	63.5	65.3	1.8
Santa Cruz Ave	Crane St-El Camino Real	63.1	65.2	2.1
Middle Ave	Olive St-University Dr	63.6	65.1	1.5
Middle Ave	University Dr-El Camino Real	63.8	65.3	1.5
Alpine Rd/Santa Cruz Ave	Junipero Serra Blvd-City Limits	70.6	71.6	1.0
Alpine Rd/Santa Cruz Ave	Sand Hill Rd-Junipero Serra Blvd	71.7	72.9	1.1
Linfield Drive	Middlefield Rd - Laurel St	55.9	57.2	1.3
Oak Avenue	Sand Hill Rd - Olive St	58.0	59.6	1.6
El Camino Real	Oak Grove - Ravenswood	71.2	72.9	1.7
US 101	N/O Marsh Rd	82.3	83.2	1.0
US 101	S/O Marsh Rd	81.8	82.9	1.1
US 101	S/O Willow Rd	82.0	83.2	1.2
US 101	S/O University	82.0	83.2	1.2
SR 84	Marsh Rd - Willow Rd	70.8	73.0	2.2
SR 84	Willow Rd - University Ave	73.4	75.2	1.8
SR 84	W/O University Ave	74.9	76.4	1.5
I-280	N/O Sand Hill	80.0	81.4	1.4
I-280	S/O Sand Hill	79.6	81.0	1.4

According to the criteria described above, these noise increases would be below the 3 dB level where noise increases are generally perceptible, and well below the 5 dBA criteria described above. Therefore, noise impacts from the anticipated traffic increase associated with implementation of the Plan Components would be *less than significant*.

- b. Noise generated by buildout of the proposed land use changes under the project would result in stationary, non-transportation noise which exceeds the applicable standards shown in Table 4.10-4 on noise-sensitive receptors.

The Plan Components would introduce high-density residential land uses concentrated on sites either already developed and/or in close proximity to existing residential and residential-serving development. As discussed above in Section E.1.a, residential uses, even those that are high-density, are not typically associated with high levels of stationary noise generation. Additionally, since the areas surrounding the selected sites are largely developed with other residential or non-residential uses (which tend to generate even greater noise), it is unlikely that any developments subsequent to the future residential development would directly contribute to a 5 dBA or greater increase in ambient noise levels in their surrounding areas. Therefore the impact would be *less than significant*.

In addition, implementation of the following amended General Plan goals, policies, and programs would ensure these impacts identified above are *less than significant*.

i. Amended General Plan Noise Element

- “ Program N-1.J: Evaluate Noise Related Impacts of City Actions as Appropriate. 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.
- “ Goal N-1: Achieve Acceptable Noise Levels. It is the goal of Menlo Park to have acceptable noise levels. Excessive noise is a concern for many residents of Menlo Park. These concerns can be managed with proper mitigation or through the implementation of the City’s noise ordinance. The City of Menlo Park recognizes the issue of noise and has standards to protect the peace, health, and safety of residents and the community from unreasonable noise from any and all sources in the community and to strive to locate uses compatible to the area to minimize escalation of noise from mobile and stationary sources.
- “ Policy N-1.1: Compliance with Noise Standards. Consider the compatibility of proposed land uses with the noise environment when preparing or revising community and/or specific plans. Require new

projects to comply with the noise standards of local, regional, and building code regulations, including but not limited to the City's Municipal Code, Title 24 of the California Code of Regulations, the California Green Building Code, and subdivision and zoning.

- “ Policy N-1.6: Noise Reduction Measures. Encourage the use of construction methods, state-of-the-art noise abating materials and technology and creative site design including, but not limited to, open space, earthen berms, parking, accessory buildings, and landscaping to buffer new and existing development from noise and to reduce potential conflicts between ambient noise levels and noise-sensitive land uses. Use sound walls only when other methods are not practical or when recommended by an acoustical expert.
- “ N-1.10: Nuisance Noise. Minimize impacts from noise levels that exceed community sound levels through enforcement of the City's Noise Ordinance. Control unnecessary, excessive, and annoying noises within the City where not preempted by Federal and State control through implementation and updating of the Noise Ordinance.
- “ Policy N-1.5: Planning and Design of New Development to Reduce Noise Impacts. Design residential developments to minimize the transportation-related noise impacts to adjacent residential areas and encourage new development to be site planned and architecturally designed to minimize noise impacts on noise-sensitive spaces. Proper site planning can be effective in reducing noise impacts.
- “ Policy N-1.8: Potential Annoying or Harmful Noise. Preclude the generation of annoying or harmful noise on stationary noise sources, such as construction and property maintenance activity and mechanical equipment.

4. Create a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

Based on applicable criteria stipulated by the Menlo Park noise ordinance, a significant impact would occur if construction of the housing sites:

- a. Occur outside the hours of 8:00 a.m. and 6:00 p.m. Monday through Friday;
- b. Utilizes equipment that results in noise levels exceeding 85 dBA at a distance of 50 feet.

Development of the future residential units would cause temporary noise impacts during construction at adjacent land uses. The future residential developments are generally located in proximity of noise-sensitive residential areas. Specific site plans and construction details have not been developed. Construction would be localized and would occur intermittently for varying periods of time. Because specific project-level in-

formation is not available at this time, it is not possible to quantify the construction noise impacts at specific sensitive receptors.

Construction is performed in distinct steps, each of which has its own mix of equipment, and, consequently, its own noise characteristics. However, despite the variety in the type and size of construction equipment, similarities in the dominant noise sources and patterns of operation allow construction-related noise ranges to be categorized by work phase. Table 4.10-10 lists typical construction equipment noise levels recommended for noise-impact assessments, based on a distance of 50 feet between the equipment and the noise receptor.

The highest noise impacts during construction would occur from operation of heavy earthmoving equipment and truck haul that would occur with construction of individual housing sites. The City restricts the hours of construction activities⁶ to the least noise-sensitive portions of the day (i.e. between 8:00 a.m. and 6:00 p.m. for Monday through Friday). In addition, the City prohibits the use of construction equipment that generates noise levels exceeding 85 dBA at a distance of 50 feet.

Prior to construction of each housing site, for projects that are not subject to separate environmental review construction noise impacts would be addressed through compliance with the City's General Plan and Zoning Ordinance through the City's building permitting process. Several methods can be implemented to reduce noise during construction such as equipment selection, selecting staging areas as far as possible from nearby noise sensitive areas and temporary construction walls.

Implementation of the following amended General Plan goals, policies, and programs would ensure these impacts identified above are *less than significant*.

i. Amended General Plan Noise Element

- Program N-1.J: Evaluate Noise Related Impacts of City Actions as Appropriate. 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.

⁶ Except for emergency work of public service utilities or by variance.

TABLE 4.10-10 CONSTRUCTION EQUIPMENT NOISE EMISSION LEVELS

Construction Equipment	Typical Noise Level (dBA) at 50 Feet	Construction Equipment	Typical Noise Level (dBA) at 50 Feet
Air Compressor	81	Pile-Driver (Impact)	101
Backhoe	80	Pile-Driver (Sonic)	96
Ballast Equalizer	82	Pneumatic Tool	85
Ballast Tamper	83	Pump	76
Compactor	82	Rail Saw	90
Concrete Mixer	85	Rock Drill	98
Concrete Pump	71	Roller	74
Concrete Vibrator	76	Saw	76
Crane, Derrick	88	Scarifier	83
Crane, Mobile	83	Scraper	89
Dozer	85	Shovel	82
Generator	81	Spike Driver	77
Grader	85	Tie Cutter	84
Impact Wrench	85	Tie Handler	80
Jack Hammer	88	Tie Inserter	85
Loader	85	Truck	88
Paver	89		

Source: Federal Transit Administration, Transit Noise, and Vibration Impact Assessment, 2006.

- “ Goal N-1: Achieve Acceptable Noise Levels. It is the goal of Menlo Park to have acceptable noise levels. Excessive noise is a concern for many residents of Menlo Park. These concerns can be managed with proper mitigation or through the implementation of the City’s noise ordinance. The City of Menlo Park recognizes the issue of noise and has standards to protect the peace, health and safety of residents and the community from unreasonable noise from any and all sources in the community and to strive to locate uses compatible to the area to minimize escalation of noise from mobile and stationary sources.
 - “ Policy N-1.6: Noise Reduction Measures. Encourage the use of construction methods, state-of-the-art noise abating materials and technology and creative site design including, but not limited to, open space, earthen berms, parking, accessory buildings, and landscaping to buffer new and existing development from noise and to reduce potential conflicts between ambient noise levels and noise-sensitive land uses. Use sound walls only when other methods are not practical or when recommended by an acoustical expert.
 - “ Policy N-1.10: Nuisance Noise. Minimize impacts from noise levels that exceed community sound levels through enforcement of the City’s Noise Ordinance. Control unnecessary, excessive and annoying noises within the City where not preempted by Federal and State control through implementation and updating of the Noise Ordinance.
 - “ Policy N-1.8: Potential Annoying or Harmful Noise. Preclude the generation of annoying or harmful noise on stationary noise sources, such as construction and property maintenance activity and mechanical equipment.
5. **For projects within an area covered by an airport land use plan or within 2 miles of a public airport or public use airport when such an airport land use plan has not been adopted, or within the vicinity of a private airstrip, expose people residing or working in the project area to excessive aircraft noise levels.**

There are no areas of Menlo Park which fall within an airport land use plan for any of the airports located in close proximity to the EA Study Area. Although a small portion of Menlo Park falls within 2 miles of the Palo Alto Airport, this area is not covered by the airport’s influence area,⁷ nor is it within the airport’s 55 dB noise contour. All other airports are located 4 or more miles away from the EA Study Area. Imple-

⁷ Santa Clara County Airport Land Use Commission, 2008. Palo Alto Airport Comprehensive Land Use Plan, Figure 7, <http://www.sccgov.org/sites/planning/Plans%20-%20Programs/Airport%20Land-Use%20Commission/Documents/PAO-adopted-11-19-08-CLUP.pdf>, accessed on September 6, 2012.

mentation of the Plan Components would therefore not result in exposure to excessive aircraft noise levels and the impact would be *less than significant*.

6. For a project within the vicinity of a private airstrip, expose people residing or working in the project area to excessive noise levels.

There are no private airstrips located within Menlo Park. The Stanford University Hospital does operate one heliport, which is located approximately 0.4-mile to the southeast of border with Menlo Park, and over several miles from the nearest housing Site 1. Due to limited and sporadic heliport use for medical emergencies, and distance to the nearest housing sites, there would be *no impact* related to excessive noise levels related to private airstrips.

7. Cumulative Impacts

This section analyzes potential impacts from noise that could occur from a combination of the Plan Components with regional growth in the immediate area. The traffic noise levels predicted in 2035 and evaluated in Section E.1 are based on cumulative traffic conditions that take into account cumulative development in the region. Therefore, the impact discussion above incorporates the cumulative scenario by default and no further discussion is warranted.

F. Impacts and Mitigation Measures

The Plan Components would not result in any significant noise impacts; therefore, no mitigation measures are necessary.

4.11 POPULATION AND HOUSING

This chapter describes the existing population and housing characteristics of the EA Study Area and evaluates the potential environmental consequences of future development that could occur by adopting and implementing the proposed Housing Element Update, General Plan Consistency Update, and associated Zoning Ordinances amendments, together referred to as the “Plan Components.” A summary of the relevant regulatory setting and existing conditions is followed by a discussion of Plan Component impacts and cumulative impacts.

A. Regulatory Framework

The regulatory framework related to population and housing is described below.

1. Regional Housing Needs Allocation

Housing Element law requires local jurisdictions to plan for and allow the construction of a share of the region’s projected housing needs. This share is called the Regional Housing Needs Allocation (RHNA). State law mandates that each jurisdiction provide sufficient land to accommodate a variety of housing opportunities for all economic segments of the community to meet or exceed the RHNA. The Association of Bay Area Governments (ABAG), as the regional planning agency, calculates the RHNA for individual jurisdictions within San Mateo County, including Menlo Park.

2. Association of Bay Area Governments Projections 2009

The ABAG is the official comprehensive planning agency for the San Francisco Bay region, which is composed of the nine counties of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, and Sonoma, and contains 101 cities. The ABAG produces growth forecasts on four-year cycles so that other regional agencies, including the Metropolitan Transportation Commission (MTC) and the Bay Area Air Quality Management District (BAAQMD), can use the forecast to make project funding and regulatory decisions. The next set of growth forecasts is expected to be published in 2013.

The General Plans, zoning regulations, and growth management programs of local jurisdictions inform the ABAG projections. The ABAG projections are also developed to reflect the impact of “smart growth” policies and incentives that could be used to shift development patterns from historical trends toward a better jobs-housing balance, increased preservation of open space, and greater development and redevelopment in urban core and transit-accessible areas throughout the ABAG region.

B. Existing Conditions

This section describes the existing population and housing conditions in the Menlo Park to provide context for the analysis of the Plan Components in this EA.

1. Population

The population of Menlo Park grew by approximately four percent from 2000 to 2010, a faster rate than the growth of 1.6 percent for the county as a whole during the same period. In 2010, Menlo Park contained approximately 4.5 percent of the county's total population.¹ In 2012, Menlo Park had a population of 32,513 residents and was the seventh largest city in San Mateo County. Menlo Park has a smaller population than the neighboring Cities of Redwood City and Palo Alto (in Santa Clara County), and a larger population than the neighboring Town of Atherton and City of East Palo Alto.²

2. Housing

In 2010, Menlo Park contained 13,085 housing units, with a 5.6 percent vacancy rate.³ Of the occupied housing units, in 2010 approximately 56 percent were owner occupied and 44 percent were renter occupied. The vacancy rate and occupancy-by-tenure proportions were similar at the county level, with the estimated 2010 county vacancy rate at approximately five percent, and occupied units being approximately 59 percent owner occupied and 41 percent renter occupied.⁴

In 2010 approximately 55 percent of Menlo Park's homes were detached single-family homes, eight percent were attached single-family homes, 37 percent were multi-family homes, and less than one percent were mobile homes. These housing characteristics are similar to the countywide proportion of 57 percent detached single-family homes, 9 percent attached single-family homes, 32 percent multi-family homes, and one percent mobile homes.⁵

¹ US Census Bureau, 2000 Census, Table DP-1; and US Census Bureau, 2010 Census, Table DP-1.

² State of California Department of Finance, 2012. E-5 Population and Housing Estimates for Cities, Counties, and the State, January 2011 and 2012, with 2010 Benchmark.

³ US Census Bureau, 2010 Census, Table DP-1.

⁴ US Census Bureau, 2010 Census, Table DP-1.

⁵ US Census, 2006 to 2010 American Community Survey 5-Year Estimates, Table DP04.

In 2010, the median initial construction year for Menlo Park's occupied housing units was 1958, making the average home 52 years old in 2010.⁶

3. Income and Housing Affordability

Between 2010 and 2012 the incomes in Menlo Park are higher when compared to the county as a whole. The median annual household income was \$107,860 in Menlo Park, over 25 percent higher than the median countywide annual household income of \$85,648.⁷ In Menlo Park the median house value was \$1.2 million for single family and \$895,000 for condominiums, compared to \$634,000 for single-family and \$410,000 for condominiums in the county as a whole.⁸ The median rent in Menlo Park was \$2,416, compared to \$1,660 in the county as a whole.⁹ A common measure of financial hardship is paying more than 30 percent of income towards housing. Forty-two percent of those in owner-occupied units paid 30 percent or more of their household income towards owner costs and 41 percent of renters paid 30 percent or more of their household income towards rent.¹⁰

4. Future Housing Needs

The ABAG's 2009 Projections for the EA Study Area are shown in Table 4.11-1. As shown in Table 4.11-1, the ABAG projects that by 2035 the population will grow to 43,400 and the number of households will grow to 17,360. This represents a population and household growth of approximately 19 percent. These rates are similar to, but slightly lower than, the ABAG's projected population and household growth of approximately 22 percent for San Mateo County as a whole.¹¹

⁶ US Census, 2006 to 2010 American Community Survey 5-Year Estimates, Table B25037.

⁷ US Census, 2006 to 2010 American Community Survey 5-Year Estimates, Table DP03.

⁸ Data provided by City of Menlo Park via the San Mateo County Association of Realtors (SAMCAR), based on statistics compiled by MLS Listings, Inc.

⁹ Data provided by City of Menlo Park via Real Facts; Prices are for 2nd quarter 2010.

¹⁰ Calculated by The Planning Center | DC&E from US Census, 2006 to 2010 American Community Survey 5-Year Estimates, Table DP04.

¹¹ Association of Bay Area Governments, 2009. *Projections and Priorities 2009: Building Momentum, Projections through 2035.*

TABLE 4.11-1 ABAG POPULATION, HOUSEHOLD, AND EMPLOYMENT PROJECTIONS FOR MENLO PARK AND SAN MATEO COUNTY

	2000	2010	2035	Change 2010–2035	
				Number	Percent
Menlo Park					
<i>City Limit</i>					
Population	30,785	31,700	38,500	6,800	21.5%
Households	12,387	12,850	15,430	2,580	20.1%
Jobs	36,130	26,350	35,990	9,640	36.6%
<i>City Limit and Sphere of Influence</i>					
Population	35,254	36,200	43,400	7,200	19.9%
Households	14,136	14,630	17,360	2,730	18.7%
Jobs	39,860	29,400	39,570	10,170	34.6%
San Mateo County					
Population	707,163	733,300	893,000	159,700	21.8%
Households	254,104	264,400	322,620	58,220	22.0%
Jobs	386,590	346,320	505,860	159,540	46.1%

April 4, 2013

Source: Association of Bay Area Governments, 2009, Menlo Park Subregional Study Area Table, San Mateo County, *Projections and Priorities 2009: Building Momentum, Projections through 2035*.

The ABAG, as the regional planning agency, calculates the RHNA for the jurisdictions within San Mateo County, including Menlo Park. Table 4.11-2 shows the RHNA for Menlo Park for the current planning period (2007 to 2014) as well as the previous planning period (1999 to 2006). As shown in Table 4.11-2, to meet its RHNA for the past two planning periods, the City needs to demonstrate that it can accommodate 1,975 units. The City proposes to demonstrate compliance through a variety of means, including documenting the units that have been built/approved and sites available through existing zoning, as well as implementation of Housing Element programs and rezoning of sites to higher density residential uses.

TABLE 4.11-2 MENLO PARK REGIONAL HOUSING NEEDS ALLOCATION (RHNA)

RHNA Planning Period	Dwelling Units by Income Category				Total
	Very Low Income	Low Income	Moderate Income	Above Moderate Income	
1999 to 2006	184	90	245	463	982
2007 to 2014	226	163	192	412	993
Total	410	253	437	875	1,975

Source: Association of Bay Area Governments, 2001, *Regional Housing Needs Determination for the San Francisco Bay Area 2001-2006 Housing Element Cycle*, and Association of Bay Area Governments, 2008, *San Francisco Bay Area Housing Needs Plan 2007-2014*.

C. Standards of Significance

The Plan Components would have a significant impact with regards to population and housing if they would:

1. Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure).
2. Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere.
3. Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere.

D. Impact Discussion

1. **Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure).**

For the purposes of this EA, the Plan Components would be considered to induce substantial growth if estimated buildout resulting from future development under the Plan components would exceed regional growth projections for Menlo Park. Assuming the new dwelling units permitted under the Plan Compo-

nents would have the same average household size as existing households in the City, population could increase by 3,361 residents by 2035. Population is based on an average household size of 2.55 persons per household; 2.55 residents per household times 1,318 units, which equals 3,361 new residents. The number of potential new dwelling units is based on rezonings for up to 900 dwelling units, 300 secondary dwelling units, and 118 new housing units on infill sites near downtown.

By comparison, as shown in Table 4.11-1, the ABAG projects 2,580 new households and 7,200 new residents in the EA Study Area between 2010 and 2035. Therefore, the amount of new development projected for 2035 under the Plan Components would not, in and of itself, exceed ABAG's most recent projections for population or housing in Menlo Park, and the impact would be *less than significant*.

2. Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere.

Implementation of the Plan Components would include rezoning housing Sites 2 and 3 (MidPen's Gateway Apartments) to allow for a maximum density of 40 dwelling units/acre. If these sites were to be redeveloped, 130 existing units would need to be demolished. Nevertheless, the resulting redevelopment at these sites would provide a net increase of 78 units. Furthermore, the Plan Components also consider development of 118 net new infill housing units near the downtown, 816 net new dwelling units on housing Site 1 (Veterans Affairs Campus), Site 4 (Hamilton Avenue), and Site 5 (Haven Avenue), and 300 net new second unit housing sites.

The following policies and programs in the current General Plan and proposed amendments to the General Plan would ensure that the displacement of housing would not occur:

- a. Current General Plan Land Use and Circulation Element
 - “ Policy I-A-11: No housing may be removed by new development without prior City approval, and replacement housing will be required for any housing removed.
- b. Amended General Plan Housing Element
 - “ Policy H-2.3: The City will assure that any conversions of rental housing to owner housing accommodate the tenants of the units being converted, consistent with requirements to maintain public health, safety, and welfare. The City will also encourage limited equity cooperatives and other innovative housing proposals that are affordable to lower income households.

- “ Program H-2.C: The City will amend the Zoning Ordinance to reflect the Housing Element policy of prohibiting or limiting the loss of existing residential units or the conversion of existing residential units to commercial or office space. Zoning Ordinance changes and City activities should address residential displacement impacts, including the following:
- a. Consistency with the Ellis Act — The Ellis Act allows property owners of rental housing to “go out of business.”
 - b. Regulations used in other communities.
 - c. Consideration of a modified replacement fee on a per unit basis, or replacement of a portion of the units, relocation assistance, etc. to the extent consistent with the Ellis Act.
 - d. Collaboration between the City, the San Mateo County Department of Housing, Mid-Pen Housing Corporation, and others, as needed, to ensure protection of affordable units in Menlo Park.

Market factors will ultimately determine whether infill sites around downtown and potential housing Sites 2 and 3 (MidPen’s Gateway Apartments) are redeveloped, and would dictate the precise method through which redevelopment occurs. Therefore, construction of replacement housing elsewhere would not be necessary and the impact would be *less than significant*.

3. Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere.

As described under impact discussion D.2 above, potential future development on infill sites around downtown and potential housing Sites 2 and 3 (MidPen’s Gateway Apartments) would involve the demolition and replacement of existing housing units, which would result in the temporary displacement of some residents. However, based on an average household size of 2.55 persons per household the proposed net increase of 196 housing units from the infill and housing Sites 2 and 3 (MidPen’s Gateway Apartments) would accommodate approximately 500 new residents in the City. Therefore, the construction of replacement housing elsewhere would not be warranted and the impact would be less than significant.

4. Cumulative Impacts

As described above, Plan Components would not induce a substantial amount of growth or require the construction of replacement housing. Cumulative growth would therefore be consistent with regional planning efforts. Thus, when considered along with the Plan Components, which, as described above under Section D.1, would not exceed regional growth projections, cumulative growth would not displace substantial num-

bers of people or housing or exceed planned levels of growth and the cumulative impacts, would be *less than significant*.

E. Impacts and Mitigation Measures

The Plan Components would not result in any significant population and housing impacts; therefore, no mitigation measures are necessary.

4.12 PUBLIC SERVICES AND RECREATION

This chapter describes public services provided in the EA Study Area and evaluates the potential environmental consequences of future development that could occur by adopting and implementing the Housing Element Update, General Plan Consistency Update, and associated Zoning Ordinances amendments, together referred to as the “Plan Components.” Impacts to law enforcement, fire protection and emergency medical response, parks and recreational facilities, and schools are each addressed in a separate subsection of this chapter. In each subsection, a summary of the relevant regulatory setting and existing conditions is followed by a discussion of the impacts and cumulative impacts of the Plan Components.

A. Fire Protection and Emergency Medical Services

This section describes existing conditions and potential physical environmental impacts related to fire and emergency medical services.

1. Regulatory Framework

a. State Regulations

i. California Building Code

The State of California provides a minimum standard for building design through the 2010 California Building Code (CBC), which is located in Part 2 of Title 24 of the California Code of Regulations (CCR). It is generally adopted on a jurisdiction-by-jurisdiction basis, subject to further modification based on local conditions. Commercial and residential buildings are plan-checked by local city and county building officials for compliance with the CBC. Typical fire safety requirements of the CBC include: the installation of sprinklers in all high-rise buildings; the establishment of fire resistance standards for fire doors, building materials, and particular types of construction; and the clearance of debris and vegetation within a prescribed distance from occupied structures in wildfire hazard areas.

ii. California Fire Code

The California Fire Code (CFC) incorporates, by adoption, the International Fire Code (IFC) of the International Code Council, with California amendments. This is the official Fire Code for the State and all political subdivisions. It is located in Part 9 of Title 24 of the CCR. The CFC is revised and published every three years by the California Building Standards Commission.

b. Local Regulations

i. *Menlo Park Fire District Fire Prevention Code*

The Menlo Park Fire Protection District (MPFPD) has adopted a Fire Prevention Code to regulate permit processes, emergency access, hazardous material handling, and fire protection systems, including automatic sprinkler systems, fire extinguishers, and fire alarms. Under Ordinance 35-2012, the Fire District adopted the 2010 CFC by reference, amended the District Fire Prevention Code, and updated its Fee Schedule on July 17, 2012.¹ Section 903 of the District Fire Prevention Code requires automatic sprinkler systems in new non-single-family residential buildings if the new building has a total floor area of 5,000 square feet or more, if the building is four or more stories in height, or if the building has a height of 40 feet or more. The automatic sprinkler systems are also required in existing non-single-family residential buildings where the cost of the cumulative improvements made to the building exceeds 50 percent of the 1984 assessed valuation of the structure. New construction or improvements are subject to the Fire District's plan review and approval.

a) Insurance Services Organization

The Insurance Services Organization (ISO) is an advisory organization that, amongst other things, collects information on municipal fire-protection efforts in communities throughout the United States. In each of those communities, ISO analyzes the relevant data using their Fire Suppression Rating Schedule (FSRS). The ISO then assigns a Public Protection Classification from 1 to 10. Class 1 generally represents superior property fire protection, and Class 10 indicates that the area's fire-suppression program does not meet ISO's minimum criteria.² The ISO rating is used by the MPFPD to evaluate their public fire-protection services.

b) National Fire Protection Agency³

The National Fire Protection Agency (NFPA) is a non-profit organization that develops, publishes, and disseminates more than 300 consensus codes and standards intended to minimize the possibility and effects of fire and other risks. The NFPA 1710: Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire De-

¹ Menlo Park Fire Protection District, *Ordinance 30 & District Standards*, September 5, 2007, <http://www.menlofire.org/fireprevention/forms/Ordinance%2035-2012.pdf>, accessed September 27, 2012.

² ISO Mitigation Online website, About ISO and About PPC pages, <http://www.isomitigation.com>, accessed on January 16, 2013.

³ National Fire Protection Agency website, Codes and Standards and NFPA 1710 pages, www.nfpa.org, accessed on January 16, 2013.

partments 2010 Edition contains the minimum requirements relating to the organization and deployment of fire suppression operations, emergency medical operations, and special operations to the public by fire departments. The MPFPD uses the NFPA 1710 to evaluate their public fire-protection services.

2. Existing Conditions

The MPFPD provides fire protection services to the EA Study Area. The MPFPD serves approximately 90,000 people, covering 30 square miles, including Atherton, Menlo Park, East Palo Alto, and some of the unincorporated areas of San Mateo County.⁴ The MPFPD runs four major divisions: Administrative Services; Human Resources; Operations and Suppression; and Training. The MPFPD has agreements with the neighboring departments, including the cities of Palo Alto, Redwood City, Fremont, and Woodside Fire District, to provide automatic aid.

a. Staffing

The MPFPD currently has staffing of 110.80 full time equivalents (FTE) and authorized 112.60 FTE in FY 2012-13.⁵ The command staff includes a fire chief, a deputy chief, three division chiefs, and three battalion chiefs. Based on the MPFPD's service population of 90,000 residents, the current service ratio of the MPFPD is 1.23 firefighters per thousand service population.⁶ Each of the division chiefs' responsibilities includes operations, training, and fire prevention. Each battalion chief supervises one of the three suppression shifts.

b. Call volume:

The MPFPD responds to approximately 8,500 emergencies a year with about 60 percent of them being emergency medical incidents.⁷ The MPFPD's targeted response time for each fire station is six minutes fifty-nine seconds for medical calls and eight minutes response time for fires within the fire station's service area. In 2011, out of 7,304 incident calls 70 percent of calls were responded to in less than 5 minutes.⁸

⁴ Menlo Park Fire Protection District Website, <http://www.menlofire.org/districtinfo.html>, accessed on December 3, 2012.

⁵ Menlo Park Fire Protection District, 2012, *General Fund Revenue FY 12-13*.

⁶ $(110.8 \text{ full-time FTE} / 90,000 \text{ residents}) \times 1,000 = 1.23$.

⁷ Menlo Park Fire Protection District Website, <http://www.menlofire.org/districtinfo.html>, accessed on December 3, 2012.

⁸ Menlo Park Fire Protection District, *2011 Annual Report*.

c. Equipment

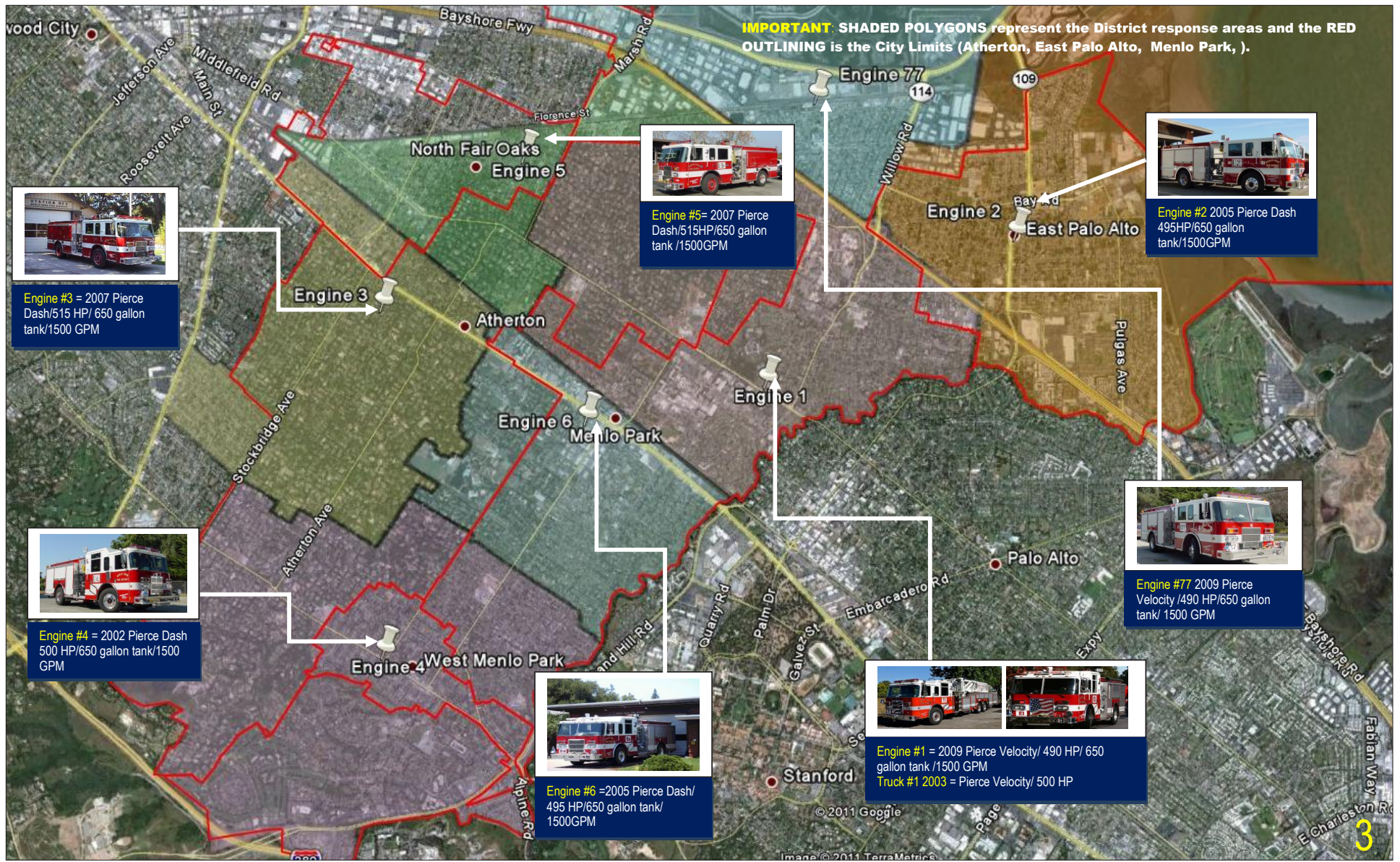
The MPFPD’s headquarters is located at 170 Middlefield Road in Menlo Park. Administration Offices and Fire Prevention offices have moved into the MPFPD’s headquarters between 2009 and 2010. As shown on Figure 4.12-1, the MPFPD operates seven stations in the EA Study area; however only six of the seven are would serve the future development permitted under the Plan Components. Table 4.12-1 shows these six stations and their equipment and staffing status. The six stations are strategically placed to provide the most efficient response times. The MPFPD’s current ISO rating is Class 3.⁹

TABLE 4.12-1 **MPFPD STATION EQUIPMENT AND STAFFING STATUS THAT SERVES THE EA STUDY AREA**

Station	Address	Equipment	Staff
Station 1	300 Middlefield Road	Engine 1, Truck 1 (aerial ladder truck - 100' ladder), Battalion 1(the Districts Mobile Command Vehicle), Rescue 1	Engine 1 is staffed by a Captain and 2 Firefighters. Truck 1 is staffed by a Captain and 3 Firefighters. One of the personnel on Engine 1 and Truck 1 will also be a licensed paramedic.
Station 2	2290 University Avenue	Engine 2 (Automatic Aide to Palo Alto and Mutual Aid to Fremont)	1 Captain and 2 Firefighters
Station 4	3322 Alameda de Las Pulgas	Engine 4 (Automatic Aid to Redwood City, Portola Valley, and Woodside)	1 Captain and 2 Firefighters. One of the personnel is a licensed paramedic
Station 5	4101 Fairoaks Avenue	Engine 5 (Automatic Aid to the Redwood City Fire Department)	1 Captain and 2 Firefighters. One of the three personnel will also be a licensed paramedic
Station 6	700 Oak Grove Avenue	Engine 6 (Automatic Aid to the City of Palo Alto)	1 Captain and 2 firefighters. One of the three personnel will also be a licensed paramedic
Station 77	1467 Chilco Avenue	Engine 77 (Automatic Aid to Redwood City and Mutual Aid to Fremont), an Air Boat, USAR Vehicles and the other various Utility Vehicles.	3 firefighting personnel (1 Captain and 2 Fire Fighters) and 2 Shop personnel (1 Fleet Manager and 1 Mechanic)

Source: Menlo Park Fire Protection District website, <http://www.menlofire.org/stations.html>, accessed December 2012; Menlo Park Fire Protection District, 2011 Annual Report.

⁹ Harold Schapelhouman, Menlo Park Fire Protection District Fire chief, Interview with The Planning Center | DC&E, November 20, 2012.



Source: Menlo Park Fire District, 2012.

FIGURE 4.12-1
 FIRE STATIONS

d. Expansion Plans

In 2007, with the adoption of Resolutions 1185-07, 1186-07 and 1187-07 by the MPFPD Board of Directors, the MPFPD purchased three properties to relocate the Administration and the Fire Prevention Division, and to rebuild Station 2 in East Palo Alto and Station 6 in Downtown Menlo Park. Station 2 is currently under construction. The MPFPD will relocate fire engines from the main station to Station 2 to cover a greater geographical area when completed. Station 6 is the next priority and the MPFPD recently presented preliminary plans at a Menlo Park Planning Commission study session for the construction of a new fire station. A bond issuance would be necessary to rebuild Station 6. The MPFPD also plans on remodeling Station 1 to rebuild a training tower and renovate additional space freed up with the Administration and Fire Prevention divisions relocating.

Currently, the MPFPD is updating its capital improvement plans, which aim to support future growth in the MPFPD service area. To help implement its capital improvement plans, the MPFPD is also preparing its Impact Fee Justification Study.¹⁰ Once the MPFPD Board of Directors approves the Impact Fee Justification Study, presumably in early 2013, all new development applicants in the MPFPD service area will be required to pay applicable impact fees.

3. Standard of Significance

The Plan Components would have a significant impact related to fire protection and emergency services if future development would result in the provision of, or need for, new or physically altered facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives.

4. Impact Discussion

- a. Result in the provision of, or need for, new or physically altered facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives.

The Plan Components would have a significant environmental impact if it would exceed the ability of fire and emergency medical responders to adequately serve the existing and future residents, thereby requiring construction of new facilities or modification of existing facilities.

¹⁰ Harold Schapelhouman, Menlo Park Fire District Fire chief, Interview with The Planning Center | DC&E, November 20, 2012.

As described in Chapter 3, Project Description, of this EA, future development under the Plan Components could generate up to 3,361 new residents in the EA Study Area. While all six stations would serve the second units, the following lists responsible stations for initial response to the EA Study Area for the housing sites and infill areas around downtown:

- “ Station 6: Downtown infill developments
- “ Station 1: Site 1
- “ Station 77: Sites 2, 3, 4, and 5

As described above, the MPFPD has capital improvement plans in place to expand its facilities to accommodate future demand; therefore, future development permitted under the Plan Components would not require any additional construction or expansion of MPFPD facilities. Additionally, when the Impact Fee Justification Study is adopted by the MPFPD Board of Directors, presumably in early 2013, new developments under the Plan Components would be required to pay any applicable impact fees, which would help implement the MPFPD’s capital improvement plans.

A new development application in the EA Study Area would be required to meet MPFPD standards and Fire Prevention Code requirements, including fire sprinklers, fire hydrants, water fire flow requirements, and design of driveway turnaround and access points to accommodate fire equipment. The 2010 California Residential Code would also require fire sprinklers be installed in all new one- and two-family homes and townhouses. In addition, the following amended General Plan goals, policies and programs would ensure risks associated with fire hazards in the EA Study Area would be minimized.

i. Amended General Plan Seismic Safety and Safety Element

- “ Policy S-1.30: Coordination with the Menlo Park Fire District. Encourage City-Fire District coordination in the planning process and require all development applications to be reviewed and approved by the Menlo Park Fire Protection District prior to project approval.
- “ Policy S-1.38: Emergency Vehicle Access. Require that all private roads be designed to allow access for emergency vehicles as a prerequisite to the granting of permits and approvals for construction.
- “ Policy S-1.11: Visibility and Access to Address Safety Concerns. Require that residential development be designed to permit maximum visibility and access to law enforcement and fire control vehicles consistent with privacy and other design considerations.
- “ Policy S-1.5: New Habitable Structures. Require that all new habitable structures to incorporate adequate hazard mitigation measures to reduce identified risks from natural and human-caused hazards.

- “ Policy S-1.29: Fire Equipment and Personnel Access. Require adequate access and clearance, to the maximum extent practical, for fire equipment, fire suppression personnel, and evacuation for high occupancy structures in coordination with the Menlo Park Fire Protection District.
- “ Policy S-1.31: Fire Resistant Design. Require new homes to incorporate fire resistant design and strategies such as the use of fire resistant materials and landscaping, and creating defensible space (e.g. areas free of highly flammable vegetation).
- “ Goal S-1: Assure a Safe Community. Minimize risk to life and damage to the environment and property from natural and human-caused hazards, and assure community emergency preparedness and a high level of public safety services and facilities.
- “ Program S-1.A: Link the City’s Housing and Safety Elements. Continue to review and revise the Safety Element, as necessary, concurrently with updates to the General Plan Housing Element whenever substantial new data or evidence related to prevention of natural and human hazards become available.
- “ Policy S-1.30: Coordination with the Menlo Park Fire District. Encourage City-Fire District coordination in the planning process and require all development applications to be reviewed and approved by the Menlo Park Fire Protection District prior to project approval.
- “ Program H-4.K: Work with the Fire District on local amendments to the State Fire Code to pursue alternatives to standard requirements that would otherwise be a potential constraint to housing development and achievement of the City’s housing goals.

The MPFPD expressed concerns regarding Site 5 (Haven Avenue) which is surrounded by industrial uses, and could potentially cause a hazardous situation. However, as discussed in Chapter 4.7, Hazards and Hazardous Materials, of this EA, all development in the EA Study Area would be constructed pursuant to the CBC, CFC, and the MPFPD Code and would be subject to the MPFPD’s plan review and approval prior to project approval. Proper site design and compliance with applicable regulations would reduce the risk of hazards occurring in the EA Study Area, including Site 5 (Haven Avenue).

Therefore, implementation of the listed General Plan goals, policies and programs, and compliance with the provisions of the California Building Code, California Fire Code as amended locally and adopted by the City of Menlo Park, and the Menlo Park Fire Protection District Fire Code, would ensure that adoption of the Plan Components would result in a *less-than-significant* impact with respect to fire protection services.

5. Cumulative Impacts

As described above, the Plan Components would not create a need for new or physically altered facilities in order for the MPFPD to provide fire protection services to its service area. The MPFPD's capital improvement plan is intended to accommodate cumulative growth in MPFPD's service area. Therefore, the cumulative impact on the provision of fire services would likewise be *less than significant*.

6. Impacts and Mitigation Measures

The Plan Components would not result in any significant specific or cumulative impacts to the provision of fire protection service, and therefore no mitigation measures are required.

B. Law Enforcement

This section describes the current police resources and response times for police protection services and evaluates potential physical environmental impacts related to the delivery of police services.

1. Regulatory Framework

There are no federal, State, or local regulations pertaining to law enforcement that apply to the Plan Components.

2. Existing Conditions

The Menlo Park Police Department (MPPD) provides law enforcement services in the City of Menlo Park. One police station, located at City Hall, primarily covers the whole service area. The MPPD operates one 1,000-square-foot substation east of Highway 101 for officers to use restrooms, make calls, or interview a suspect, victim, or witness. The substation is also a location used during critical incidents in the Belle Haven neighborhood. The MPPD divides its service area by three beats: Beat 1 covers the area of the City west of El Camino Real, Beat 2 covers the area between El Camino Real and Highway 101, and Beat 3 covers the area east of Highway 101, and Beat 2 covers the area in the middle.

The MPPD has a mutual aid agreement with every other police agency in the County of San Mateo. This agreement includes all neighboring jurisdictions: Atherton Police Department, East Palo Alto Police Department, Redwood City Police Department, and the San Mateo County Sheriff's Office who is responsible for law enforcement in unincorporated areas of Menlo Park and Redwood City. The MPPD also has an informal mutual aid agreement with the Palo Alto Police Department which borders Menlo Park, but is in Santa Clara County.

a. Staffing

The MPPD's staffing includes 47 sworn officers and 22 professional staff, resulting in a total full-time equivalent (FTE) of 68.75 as of 2012. The sworn officers consist of one chief, two commanders, eight sergeants, and 36 police officers,¹¹ with a staffing ratio of 1.4 officers per thousand residents.¹²

Recent budget shortfalls in the City have resulted in staff deficiencies in the MPPD. To maintain service levels with limited budget, the MPPD has tightened its resources by assigning some sworn officer's tasks to non-sworn staff. However, the MPPD still lacks traffic enforcement staff and equipment including motorcycles.¹³

b. Response Times

The MPPD prioritizes calls for police services as follows: Priority 1 calls involve life-threatening situations; Priority 2 calls are not life-threatening but necessitate immediate response; all other calls are designated Priority 3. In 2011, the average response time for Priority 1 calls was 4 minutes, for Priority 2 calls was 7 minutes, and for Priority 3 calls 10 minutes.¹⁴ The MPPD acknowledged that sometimes traveling east to west in the City is a huge barrier meeting the response time goal due to traffic congestion.

c. Call Volumes

From November 13, 2011 to November 12, 2012, the MPPD received 401 Priority 1 calls; 9,921 Priority 2 calls, and 10,566 Priority 3 calls for service. This does not include the 22,043 additional officer initiated calls that the dispatch center handled.¹⁵ These officer initiated calls could be priority 1, 2, or 3 depending on their nature. The MPPD identified the Beat 3 area as a "crime hot spot" because of entrenched gang activity in the area and rival gangs in East Palo Alto. Additionally, there has been a rash of residential burglaries in

¹¹ Dave Bertini, Commander, Menlo Park Police Department, Interview with The Planning Center | DC&E on November 13, 2012.

¹² Dave Bertini, Commander, Menlo Park Police Department, Interview with The Planning Center | DC&E on December 6, 2012.

¹³ Dave Bertini, Commander, Menlo Park Police Department, Interview with The Planning Center | DC&E on November 13, 2012.

¹⁴ Dave Bertini, Commander, Menlo Park Police Department, Interview with The Planning Center | DC&E on November 13, 2012.

¹⁵ Dave Bertini, Commander, Menlo Park Police Department, Interview with The Planning Center | DC&E on November 13, 2012.

the Beat 2 area, between Middlefield Road and Highway 101. Table 4.12-2 shows crimes by beat in Menlo Park in 2012.

d. Substation Plans

The City currently operates a police substation east of Highway 101. MPPD is considering improving the substation and has developed several options, including renovating the existing substation, which is easy to implement, or finding a new site for the substation, which could include an expansion of City services.

3. Standard of Significance

The Plan Components would have a significant impact if future development would result in the provision of, or need for, new or physically altered law enforcement facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives.

TABLE 4.12-2 **CRIMES BY BEAT**

Offense	Beat 1	Beat 2	Beat 3	99*	Total
Homicide	0	0	1	0	1
Rape	1	1	1	0	3
Robbery	3	7	5	0	15
Assault (Aggravated)	4	0	8	1	13
Assault (Simple)	22	24	36	1	83
Burglary	47	44	36	0	127
Larceny (Includes Auto Burglary)	151	110	53	1	315
Stolen Vehicle	2	7	9	0	18
Totals	230	193	149	3	575

Note: *Beat 99 represents any crime report taken outside of the City limits of Menlo Park.

Source: Dave Bertini, Commander, Menlo Park Police Department, Interview with The Planning Center | DC&E on November 13, 2012.

4. Impact Discussion

- a. Result in the provision of, or need for, new or physically altered facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives.

A significant environmental impact could result if implementation of the Plan Components would result in a need for the construction of new or physically altered police facilities.

As described in Chapter 3, Project Description, of this EA, implementation of the Plan Components would bring as many as 3,361 new residents to the EA Study Area. This increase in population would likely increase the number of calls for police protection services. Increased population in housing Sites 4 and 5, in the area east of Highway 101, may require additional staffing in Beat 3. To maintain the current staffing ratios, the 3,361 new residents may require three to five additional sworn officers. However, the MPPD has confirmed that no expansion or addition of facilities would be required to accommodate the additional sworn officers or equipment.¹⁶

The following amended General Plan goals and policies would ensure adverse impacts to law enforcement services in the EA Study Area would be minimized.

i. Amended General Plan Seismic Safety and Safety Element

- “ Policy S-1.38: Emergency Vehicle Access. Require that all private roads be designed to allow access for emergency vehicles as a prerequisite to the granting of permits and approvals for construction.
- “ Policy S1.11: Visibility and Access to Address Safety Concerns. Require that residential development be designed to permit maximum visibility and access to law enforcement and fire control vehicles consistent with privacy and other design considerations.
- “ Goal S-1: Assure a Safe Community. Minimize risk to life and damage to the environment and property from natural and human-caused hazards, and assure community emergency preparedness and a high level of public safety services and facilities.

Overall, the MPPD has determined that potential future development under the Plan Components would not require the expansion of MPPD facilities. The MPPD has confirmed that it anticipates addressing re-

¹⁶Dave Bertini, Commander, Menlo Park Police Department, Interview with The Planning Center | DC&E on November 13, 2012.

sponse times through staffing, rather than facility expansion. Therefore, impacts related to the provision of police protection services resulting from adoption of the Plan Components would be *less than significant*.

5. Cumulative Impacts

The MPPD is responsible for providing all police services for Menlo Park. Therefore the changes and growth anticipated under the Plan Components would not have any cumulative impact beyond the service boundary of the MPPD. Growth under the Plan Components, limited to approximately 1,318 households beyond what is accommodated for in the current General Plan, is not expected to significantly increase the degree or incidence of need for mutual aid from neighboring agencies for the MPPD. Therefore, the implementation of the Plan Components would have a *less-than-significant* cumulative impact on the provision of police services.

6. Impacts and Mitigation Measures

The Plan Components would not result in any significant specific or cumulative impacts to the provision of law enforcement service, and therefore no mitigation measures are required.

C. Parks and Recreation

This section describes the regulatory framework and existing conditions, and the potential physical environmental impacts related to parks and recreation.

1. Regulatory Framework

a. Quimby Act

The Quimby Act of 1975 authorizes Cities and Counties to pass ordinances requiring developers to set aside land, donate conservation easements or pay fees for park improvements. The Quimby Act sets a standard park space to population ratio of up to three acres of park space per 1,000 persons. Cities with a ratio of higher than three acres per 1,000 persons can set a standard of up to five acres per 1,000 persons for new development.¹⁷ The calculation of a city's park space to population ratio is based on a comparison of the population count of the last federal census to the amount of city-owned parkland. A 1982 amendment (AB 1600) requires agencies to clearly show a reasonable relationship between the public need for a recreation facility or park land, and the type of development project upon which the fee is imposed.

¹⁷ California Government Code Section 66477, California Park and Recreation Society website, Quimby Act 101: An Abbreviated Overview page, at <http://www.cprs.org>, accessed January 17, 2013.

b. Menlo Park Municipal Code

Section 15.16.020 of the Menlo Park Municipal Code establishes recreation requirements for residential subdivisions. The City requires the dedication of land or the payment of fees, or a combination of both, for park and recreational purposes as a condition to the approval of a tentative subdivision or parcel map for a residential development on one or more parcels of the subdivision. The amount of land dedicated or fees paid will be calculated based upon residential density from the formula under Section 15.16.020(3).

2. Existing Conditions

a. City-owned parks and facilities

The Menlo Park Community Services Department owns and operates parks and recreational facilities in the City of Menlo Park. The City has adopted a goal of maintaining a ratio of five acres of developed parkland per 1,000 residents.¹⁸ Currently, the City provides 220.86 acres of parkland for the residents, with a ratio of 6.79 acres per capita.¹⁹ The detailed list of available facilities in the City is shown in Table 4.12-3.

b. Regional Parks and Preserves

In addition to the City's parks facilities, Menlo Park residents have access to a range of regional parks and open space, including the Don Edwards San Francisco Bay National Wildlife Refuge. Wunderlich County Park, Huddart County Park, and San Francisco Bay Trail also provide recreational opportunities for Menlo Park residents. Flood Park, a 26-acre facility owned by San Mateo County Parks Department, provides a place for picnicking and strolling, the City and the County have discussed transferring it to the City because of the County's budget deficit.²⁰ However, there are no plans to move forward at this time. Furthermore, the residents of Menlo Park have access to the 373-acre Ravenswood Preserve located largely within Menlo Park and owned and managed by the Midpeninsula Regional Open Space District. The southern portion of the preserve offers pedestrian and bicycle access along the shore and levees along the marshland.

¹⁸ City of Menlo Park, General Plan, "General Plan Background Report, Public Facilities and Services, 1994, page B-VI-6.

¹⁹ 220.86 acres divided by 32.513 (existing population as of 2012/1,000)= 6.79 acres per 1,000 residents.

²⁰ Katrina Whiteaker, Community Service Manager, City of Menlo Park, Interview with the Planning Center | DC&E, on November 13, 2012.

TABLE 4.12-3 CITY-OWNED PARKS AND FACILITIES IN MENLO PARK

Name	Location	Size	Description
FACILITIES			
Arrillaga Family Recreation Center	700 Alma Street	10,000 sq2	A kitchen, lobby area, offices, and two patios, 7 main rooms for purposes of banquets, meetings, exercise, dance, and enrichment activities.
Arrillaga Family Gymnasium	600 Alma Street	24,100 sq2	Two full size basketball courts, 3 volleyball courts, 4 badminton courts, and 4 cross-court basketball, a conference room, offices, lobby area, restrooms, and locker rooms.
Arrillaga Family Gymnastics Center	510 Laurel Street	19,380 sq2	(Completed in 2012.) A state of the art gymnastics facility, two multipurpose rooms, office area, lobby, restrooms, and storage.
Burgess Pool	501 Laurel Street	22,700 sq2	Three pools- performance pool, instructional pool (covered during winter months), and kiddie pool (summer only). The facility contracted to Team Sheepeer LLC (Menlo Swim and Sport).
Menlo Children's Center	801 Laurel Street	13,000 sq2	Licensed preschool (18 months to 5 years) and school age (Kindergarten - 5th Grade) services.
Belle Haven Child Development Center	410 Ivy Drive	6,600 sq2	(Licensed by the Department of Social Services.) Quality subsidized, full-time child development services.
Belle Haven After School Center	100 Terminal Ave	2,485 sq2	(Licensed by the Department of Social Services.) Care for children in kindergarten to sixth grade.
Senior Center	110 Terminal Ave	11,000 sq2	Health, recreational, and educational programs, as well as cultural events and social services for older adults. Nutritionally balanced hot meals and door-to-door local transportation to and from the Center are offered on weekdays for minimal cost to the registered patrons. Weekly brown bag through Second Harvest Food Bank, Farmer's Market, monthly free health screenings, HI CAP and tax assistance are also available.
Onetta Harris Community Center	100 Terminal Ave	11,000 sq2	A gym, weight room, computer lab, a large multipurpose room with adjacent kitchen, 3 classrooms, and office space.
Belle Haven Pool	100 Terminal Ave	6,300 sq2	Currently a seasonal pool that is open from mid-June to the end of August; a 25 meter pool with an additional shallow area as well as a small kiddie pool.
PARKS			
Bedwell-Bayfront Park	Bayfront Expressway & Marsh	155 Acres	An extensive trail system, as part of the San Francisco Bay Trail, allowing hiking, running, bicycling, dog walking, bird watching, kite flying, and photography.

TABLE 4.12-3 CITY-OWNED PARKS AND FACILITIES IN MENLO PARK

Name	Location	Size	Description
Burgess Park	Alma & Burgess Ave	9.31 acres	Little League Baseball Field; Soccer Field (300' x 200'); Regulation Baseball Field; Open Play field; Skate Park; Two Lighted Tennis Courts, Children's Playground; Picnic Areas, and Restrooms.
Jack W. Lyle Park	Middle Ave & Fremont Street	4.55 acres	Walking path with benches; Open Play field; Half-court basketball; Children's (5 -12 year old) Playground; and Tot-Lot (2 to 5 year old) Playground.
Fremont Park	Santa Cruz & University Ave	0.38 acres	Lighted walkways; benches; picnic areas, drinking fountain; and open grass areas. It is home to the City of Menlo Park Summer Concert Series and other downtown parties.
Kelly Park	100 Terminal Ave	8.3 acres	(Remodeled in 2011.) A synthetic turf soccer field with lights, full size track with four different exercise apparatuses, lighted tennis courts, lighted basketball court, benches, bleachers, and a full men's and women's bathroom facility.
Marketplace Park		1 acre	Playground, open grass areas, and walkways.
Nealon Park	800 Middle Ave	9 acres	Five lighted tennis courts, softball field, playground, picnic areas, grass areas, and an off-leash dog area.
Seminary Park	Seminary Drive & Santa Monica Avenue	3.51 acres	Walking path with benches; open play field; "Serenity Rock Garden"; children's playground, and tot-lot playground.
Sharon Hills Park	Alameda & Valparaiso	12.5 acres	Walking paths and benches.
Sharon Park	Sharon Park Drive & Monte Rosa Drive	9.83 acres	A small lake with fountain; gazebo; walking path with benches; shaded picnic area; grass areas; natural wooded area; and tot-lot playground.
Stanford Hills Park	Sand Hill Road & Branner Drive	3.11 acres	Benches, walkways, picnic tables, and a large grass area.
Tinkers Park	Santa Cruz Ave & Elder	0.54 acres	Tot-lot playground and picnic area.
Willow Oaks Park	Willow Street & Colmen Ave	2.63 acres	Three lighted tennis courts, children's playground, tot-lot playground, public area, off leash dog area, little league field, and large open play field for soccer and other sports.
Hamilton Park	Hamilton Ave	1.2 acres	A play structure, picnic tables, and open grass area.
Total		232 acres (220.86 acres - parks only)	

Source: Katrina Whiteaker, Community Service Manager, City of Menlo Park, Interview with the Planning Center | DC&E, on November 13, 2012.

c. School Facilities

The City has joint use agreements with La Entrada, Oak Knoll, Belle Haven, and Hillview Schools for use of fields after school hours, as follows:

- “ La Entrada: soccer, basketball, baseball, and tennis courts; playground
- “ Oak Knoll: soccer, basketball and baseball
- “ Belle Haven: basketball and baseball
- “ Hillview: soccer, football, lacrosse, basketball court, track

d. Private Facilities

A few private, fee-based facilities are available in Menlo Park, such as small yoga and dance studios.

3. Standard of Significance

The Plan Components would have a significant impact if future development related to park and recreation services would:

1. Result in substantial adverse impacts associated with the provision of new or physically altered parks or other recreational facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios or other performance objectives.
2. Increase the use of existing neighborhood and regional parks or other recreational facilities such that physical deterioration of the facility would occur or be accelerated.

4. Impact Discussion

- a. Result in substantial adverse impacts associated with the provision of new or physically altered parks or other recreational facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios or other performance objectives.

As described above, Menlo Park currently provides about 6.79 acres of parkland per thousand residents, which is more than the minimum of five acres per thousand residents. The adoption of the Plan Components could bring as many as 3,361 new residents to the city, the existing 220.86 acres of parkland in Menlo Park would still be sufficient to provide 6.16 acres per thousand residents.²¹

The City has not established standards for provision of recreational facilities; however, there is currently some excess capacity in the recreational facilities, especially in the east side of Highway 101. The City ex-

²¹ 220.86 acres divided by 35.874 ((32,513 + 3,361)/1000) = 6.16 acres per thousand residents.

pects the new residents from housing Sites 4 and 5 would better utilize the existing community center and swimming pool in the Belle Haven neighborhood.

As described above, adherence to Chapter 15.15.020 of the City's Municipal Code would require the dedication of land or payment of in-lieu fees to mitigate impacts to park and recreational services in the EA Study Area when a tentative map or parcel map is involved in a project. In addition, the following amended General Plan goals, policies, and programs would ensure adverse impacts to park and recreation services in the EA Study Area would be minimized.

i. Current General Plan Land Use and Circulation Element

- “ 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.
- “ Policy I-G.4: Dedication of land, or payment of fees in lieu thereof, for park and recreation purposes shall be required of all new residential development.

ii. Amended General Plan Open Space and Conservation Element

- “ Goal OSC-2: Provide Parks and Recreation Facilities. Develop and maintain a parks and recreation system to provide areas and facilities conveniently located, sustainable, properly designed and well-maintained to serve the recreation needs and promote healthy living of all residents of Menlo Park.
- “ Policy OSC-2.1: Open Space for Recreation Use. Provide open space lands for a variety of recreation opportunities, make improvements, construct facilities and maintain programs that incorporate sustainable practices that promote healthy living and quality of life.
- “ Policy OSC-2.3: Recreation Requirements for New Development. Require dedication of improved land, or payment of fee in lieu of, for park and recreation land for all residential uses.
- “ Policy OSC-2.6: Pedestrian and Bicycle Paths. Develop pedestrian and bicycle paths consistent with the recommendations of local and regional trail and bicycle route projects, including the Bay Trail.
- “ Policy OSC-2.4: Parkland Standards. Strive to maintain the standard of 5 acres of parkland per 1,000 residents.

- “ Policy OSC-2.2: Planning for Residential Recreational Needs. Work with residential developers to ensure that parks and recreational facilities planned to serve new development will be available concurrently with need.
- “ Policy OSC-2.5: Schools for Recreational Use. Coordinate with the local school districts to continue to operate school sites for local recreation purposes.
- “ Program OSC-2.B: Evaluate Recreational Needs. Evaluate park facilities on a regular basis for their overall function and ability to meet recreational needs. Provide new amenities as needed to support changing needs of the population and recreational trends.

The future development under the Plan Components would be required to pay applicable development impact fees, which would finance improvements to parks and recreational facilities. Therefore, the payment of impact fees and implementation of General Plan goals, policies, and programs would ensure that any future development under the Plan Components would not result in substantial adverse physical impacts associated with the provision of new or physically altered parks and associated impacts would be *less than significant*.

- b. Increase the use of existing neighborhood and regional parks or other recreational facilities such that physical deterioration of the facility would occur or be accelerated.

New residents to the EA Study Area would increase the demand for recreational opportunities and facilities; however, the demand would be distributed throughout the EA Study Area. In addition, the facilities in Belle Haven would be better utilized from new residential land uses on housing Sites 4 and 5. As noted above, there is adequate capacity in the EA Study Area to accommodate the new residents' park and recreational needs, and continue to maintain the five acres per thousand residents ratio set by the City for parks in Menlo Park.

There are a number of open spaces and parklands in the vicinity of Menlo Park, including publicly accessible trails and access to recreation destinations, such as Don Edwards San Francisco Bay National Wildlife Refuge, Wunderlich County Park, Huddart County Park, and San Francisco Bay Trail. Future residents would be expected to increase the use of these existing facilities, but not to the extent that substantial deterioration would occur. Therefore, a *less-than-significant* impact to existing neighborhood and regional parks would occur.

5. Cumulative Impacts

Future growth in the City due to the Plan Components and as projected by ABAG would result in increased demand for park and recreational facilities. If the City's population was to increase to 43,400 as projected by ABAG, and no new parks were created, the City would have available 5.08 acres of park per 1,000 residents, which meets the City's minimum standard of 5 acres per 1,000 residents.

However, the City would potentially expand and construct additional parks and other recreational facilities to meet the increased demand. As described above, the City's parkland ordinance requires additional subdivision development to fund park improvements and dedicate land, which would help ensure the provision of adequate parklands. Because no park expansions or new recreational facilities are specifically identified in the Plan Components, the location and size of additional facilities would be determined as part of future development activity. As specific parkland expansion or improvement projects are identified, additional project-specific, environmental analysis, as necessary, would be completed at that time. As a result, significant cumulative impact associated with parks and recreational facilities would be *less than significant*.

6. Impacts and Mitigation Measures

The Plan Components would not result in any significant impacts to parks and recreational facilities; therefore, no mitigation measures are necessary.

D. Schools

This section describes existing conditions and the potential physical environmental impacts related to school services.

1. Regulatory Framework

a. Senate Bill 50

Senate Bill 50 (SB 50), funded by Proposition 1A, approved in 1998, limits the power of Cities and Counties to require mitigation of school facilities impacts as a condition of approving new development and provides instead for a standardized developer impact fee. SB 50 generally provides for a 50/50 State and local school facilities funding match. SB 50 also provides for three levels of statutory impact fees. The application level depends on whether State funding is available; whether the school district is eligible for State funding and whether the school district meets certain additional criteria involving bonding capacity, year round school, and the percentage of moveable classrooms in use.

b. California Government Code, Section 65995(b), and Education Code Section 17620

SB 50 amended California Government Code Section 65995, which contains limitations on Education Code Section 17620, the statute that authorizes school districts to assess development fees within school district boundaries. Government Code Section 65995(b)(3) requires the maximum square footage assessment for development to be increased every two years, according to inflation adjustments. On January 25, 2012 the State Allocation Board (SAB) approved increasing the allowable amount of statutory school facilities fees (Level I School Fees) from \$2.97 to \$3.20 per square foot of assessable space for residential development of 500 square feet or more, and from \$0.47 to \$0.51 per square foot of chargeable covered and enclosed space for commercial/industrial development.²² School districts may levy higher fees if they apply to the SAB and meet certain conditions.²³

At the time of preparing this EA, the school impact fee for four school districts in the EA Study Area (Menlo Park City School, Las Lomas, Redwood City School and Sequoia High School Districts) was \$3.20 per square foot of residential development. Because these fees are shared between these districts, 60 percent (\$1.92 per square foot) is distributed to the elementary school districts (Menlo Park City School, Las Lomas School and Redwood City School Districts) and 40 percent (\$1.28 per square foot) is applied to the high school district (Sequoia High School District). The other elementary school district in the EA Study Area (Ravenswood City School District) did not increase their fees, as such the fees for development that occur within this district is based on the rate of \$2.97 per square foot of residential development. This equates to 60 percent (\$1.78 per square foot) distributed to Ravenswood City School Districts and 40 percent (\$1.18 per square foot) applied to the Sequoia High School District.

c. Mitigation Fee Act (California Government Code 66000-66008)

Enacted as AB 1600, the Mitigation Fee Act requires a local agency establishing, increasing, or imposing an impact fee as a condition of development to identify the purpose of the fee and the use to which the fee is to be put. The agency must also demonstrate a reasonable relationship between the fee and the purpose for which it is charged, and between the fee and the type of development project on which it is to be levied. This Act became enforceable on January 1, 1989.

²² State Allocation Board Meeting, January 25, 2012, http://www.documents.dgs.ca.gov/opsc/Resources/Index_Adj_Dev.pdf, accessed on January 16, 2013.

²³ EdSource website, http://www.edsource.org/iss_fin_sys_facilities.html, accessed January 16, 2013.

2. Existing Conditions

As noted above, there are four elementary school districts and one high school district serving Menlo Park: Menlo Park City School, Redwood City School, Las Lomas School, Ravenswood City School, and Sequoia Union High School Districts. Figure 4.12-2 shows the boundaries for each district and the location of each school. The Sequoia Union High School District is not shown on Figure 4.12-2 as it serves the entire City. The following subsections provide a brief summary of each school district's enrollment trends, capacity, and facility status.

a. Menlo Park City School District

The Menlo Park City School District (MPCSD) serves the central portion of the EA Study Area (roughly between Orange Avenue and Highway 101), a portion of the Town of Atherton, and a portion of unincorporated area of San Mateo County. The MPCSD operates three elementary schools and one middle school, and owns one unused school site (i.e. the former O'Connor School) that students generated from potential future development under the Plan Components in the MPCSD could attend.

Students in kindergarten to sixth grade could attend Encinal, Oak Knoll, and Laurel Elementary Schools. Students in seventh to ninth grade could attend Hillview Middle School. Each school's approximate current enrollment and capacity (organized by enrollment/capacity) is listed below:²⁴

- Encinal: 755/763
- Laurel: 489/484
- Oak Knoll: 742/763
- Hillview: 812/987

As shown above, most of the schools are at or near capacity. The MPCSD recently completed implementing their Facilities Master Plan, prepared in 2007, to increase the overall capacity to approximately 2,700 students. While the MPCSD adjusted their capacity during the Facilities Master Plan implementation process to keep up with the population growth in the MPCSD, as of 2011, the MPCSD schools remained at or near capacity. Consequently, the MPCSD has started the process of updating its Facilities Master Plan. In their 2012 Enrollment Projection Study Report, the MPCSD projected a total of between 3,026 and 3,336 students by 2022, which includes students that could be generated from future development under the Plan Components and other foreseeable projects in the MPCSD.²⁵

²⁴ Menlo Park City School District, December 2012, *Enrollment Projection Study Report*.

²⁵ Menlo Park City School District, December 2012, *Enrollment Projection Study Report*.

The MPCSD is considering renovating the O'Connor School, built in 1950, to increase their capacity. The O'Connor School was previously operated by the Ravenswood City School District (Ravenswood CSD). A final determination as to the use of the O'Connor School site has not been made at the time of preparing this EA.²⁶

The MPCSD has a policy to maintain a teacher-student ratio of 1:20 for kindergarten to third grade classrooms and 1:24 for fourth to eighth grade classrooms. The MPCSD's typical classroom size is 960 square feet. For the analysis in this EA the MPCSD suggested using the following student generation rates: 0.21 for new single-family homes; 0.26 for attached housing with a high proportion of multiple-bedroom units; and 0.13 for complexes with a high proportion of one-bedroom units.

As previously discussed, the MPCSD share of developer impact fee for residential development is \$1.92 per square foot.

b. Redwood City School District

The Redwood City School District (Redwood CSD) encompasses a small portion of the EA Study Area, around Highway 101 at Marsh Road. Students in kindergarten through ninth grade in this part of the EA Study Area could attend John F. Kennedy Middle or Taft Community Schools. However, since the Redwood CSD is a "district of choice,"²⁷ it is also likely not all students generated from future development under the Plan Components in this area would go to these two schools. The Redwood CSD's attendance report indicated that about 33 percent of students in the Taft Community School boundary went elsewhere in 2011.²⁸

²⁶ Diane White, Menlo Park School District, Interview with The Planning Center | DC&E, on November 19, 2012.

²⁷ The Redwood City School District (RCSd) offers a combination of neighborhood schools and Schools of Choice. Neighborhood schools have residential boundaries and students are generally assigned to them based on where they live. RCSd offers four schools of choice -- Adelante Spanish Immersion School, McKinley Institute of Technology (MIT), North Star Academy, and Orion School -- that do not have neighborhood boundaries. All students within the district are eligible to apply to attend one of the four schools of choice, or a neighborhood school outside their boundary area. From Redwood City School District, <http://www.rcsd.k12.ca.us/site/Default.aspx?PageID=228>, February 13, 2013.

²⁸ Janet Christensen, Redwood City School District, Interview with The Planning Center | DC&E, on November 19, 2012.

Taft Community School's current enrollment is approximately 600 students, which is under its capacity of approximately 950 students. John F. Kennedy Middle School currently has about 800 students enrolled, which is under its capacity of 1,200.²⁹ The Redwood CSD anticipates an enrollment increase in both the Taft Community and John F. Kennedy Middle Schools as a result of a new 400-unit residential development in Redwood City. The Redwood CSD expects 1-percent student growth per year. Based on this projection, the Redwood CSD is currently updating their Facilities Master Plan.³⁰ The Redwood CSD also plans to open a new charter school in the Fair Oaks community in 2013.³¹

The Redwood CSD maintains an average teacher-student ratio of 1:31 for all grades, and the typical classroom size is 960 square feet. The Redwood CSD's student generation rate is an average of 0.3 students per dwelling unit.³² As previously discussed, the Redwood CSD's share of developer impact fee for residential development is \$1.92 per square foot.

c. Las Lomas School District

The Las Lomas School District (LLSD) serves the very western portion of Menlo Park, a portion of the Town of Atherton, and the unincorporated San Mateo County area. The LLSD has two schools that students generated from future development under the Plan Components could attend. Students in kindergarten through third grade in this part of the EA Study Area could attend Las Lomas Elementary School. Students in fourth through eighth grade could attend La Entrada Middle School.

Current enrollment is approximately 1,400 students with approximately 650 at Las Lomas Elementary School and 750 at La Entrada Middle School. According to the LLSD, the elementary and middle schools are at capacity and have added portable classrooms to serve increased students.³³ The LLSD projects the enrollment to increase to approximately 1,570 students; this projection does not include the new develop-

²⁹ Janet Christensen & Don Dias, Redwood City School District, Interview with The Planning Center | DC&E, on November 19, 2012 and January 18, 2013.

³⁰ Donald Dias, Redwood City School District. Interview with The Planning Center | DC&E, on February 13, 2013.

³¹ Janet Christensen, Redwood City School District. Interview with The Planning Center | DC&E on November 19, 2012.

³² Donald Dias, Redwood City School District. Interview with The Planning Center | DC&E on February 13, 2013.

³³ Carolyn Chow, Chief Business Officer, Las Lomas Elementary School District, Interview with The Planning Center | DC&E, on November 19, 2012.

ment under the Plan Components. The LLSD is in the process of developing a Facilities Master Plan to increase its capacity beyond 1,570 students.

The LLSD maintains a current teacher-student ratio size of 1:22. According to the LLSD's Development Impact Fee Justification Study, prepared in 2012, its student generation rate is an average of 0.21 students per dwelling unit.³⁴ As previously discussed, the LLSD share of developer impact fee for residential development is \$1.92 per square foot.

d. Ravenswood City School District

The Ravenswood CSD serves students in kindergarten through eighth grade from the cities of East Palo Alto and east Menlo Park. The Ravenswood CSD has eleven public schools and one child development center. As of fall 2012, the Ravenswood CSD had a district-wide enrollment of approximately 3,482 students.³⁵ Belle Haven Elementary School and Willow Oaks Elementary School are located within Menlo Park, and serve students in kindergarten through eighth grade. According to its 2011 Final Demographic Report, Belle Haven Elementary School's enrollment is expected to decrease from 492 to 424 students while Willow Oaks Elementary School's enrollment is expected to increase from 955 to 1,065 students by the year 2018. Belle Haven Elementary School and Willow Oaks Elementary School can accommodate up to 816 students and 1,075 students, respectively.³⁶

The Ravenswood CSD's student generation rates differ depending on housing types: 0.39 students per single-family unit and 0.12 students per multi-family unit.³⁷ As previously discussed, the Ravenswood CSD's share of developer impact fee for residential development is \$1.92 per square foot.

e. Sequoia Union High School District

Ninth through twelfth grade students generated from future development under the Plan Components could attend Sequoia Union High School District (SUHSD) high schools. The SUHSD serves approximately 8,400 students in the communities of Atherton, Belmont, East Palo Alto, Menlo Park, Portola Valley,

³⁴ Carolyn Chow, Chief Business Officer, Las Lomas Elementary School District, Interview with The Planning Center | DC&E, on November 19, 2012.

³⁵ Ravenswood City School District, 2011, Final Demographic Report.

³⁶ Megan Cutis, Ravenswood City School District. Personal communication with The Planning Center | DC&E, on March 8, 2013.

³⁷ Ravenswood City School District, 2011, Final Demographic Report.

Redwood City, Redwood Shores, San Carlos, and Woodside.³⁸ The SHSD has four comprehensive high schools, a continuation high school, Middle College, and one adult school. The SUHSD expects most students generated from new development under the Plan Components would likely go to Menlo-Atherton High School in Atherton; while some might go to Woodside High in Woodside or Sequoia High in Redwood City.

Student population has been growing rapidly, and the SUHSD has been close to capacity for the last five years. To balance out excess enrollment among schools, the SUHSD plans on changing its school boundary system in August 2013. The SUHSD is also preparing a Facilities Master Plan to increase its overall capacity. Currently, the SUHSD's total enrollment is 8,400 students, with 2,000 at Menlo-Atherton High School, 1,760 at Woodside High, and 2,030 at Sequoia High.³⁹

According to the SUHSD's Impact Fee Justification Study, the SUHSD expects a total of 9,409 students by 2019, with a student generation rate of 0.069 per new dwelling unit and 0.1 per existing home. In 2011, the SUHSD had 8,947 students from 92,270 dwelling units.⁴⁰ Based on the SUHSD's population projection, the Facilities Master Plan aims to increase the total capacity to approximately 10,000 students by the year 2020. However, the SUHSD's population projection does not take into account new students generated under the Plan Components.

As mentioned above, the SUHSD is entitled to levy up to 40 percent of the maximum fee levels: \$1.28 per square foot of residential development.

3. Standard of Significance

The Plan Components would have a significant impact related to schools if it would result in the provision of, or need for, new or physically altered school facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable performance objectives.

³⁸ Sequoia Union High School District, <http://www.sequoiadistrict.org/domain/81>, accessed on January 10, 2013.

³⁹ James Lianides, Sequoia Union High School District, Interview with The Planning Center | DC&E, on November 19, 2012.

⁴⁰ Sequoia Union High School District, Fee Justification Study, June 27, 2012.

4. Impact Discussion

- a. Result in the provision of, or need for, new or physically altered school facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable performance objectives.

This section reviews the need for existing school facilities to accommodate any increases in public school enrollment due to the Plan Components. However, the California State Legislature, under Senate Bill 50 (SB 50), has determined that payment of school impact fees shall be deemed to provide full and complete school facilities mitigation. All new developments pursuant to the adoption of the Plan Components will be required to pay the school impact fees adopted by each school district, and this requirement is considered to fully mitigate the impacts of the Plan Components on school facilities.

i. Menlo Park City School District

The future development permitted under the Plan Components could generate approximately 363 new dwelling units in the MPCSD service area. Applying the suggested MPCSD student generation rates of 0.13 for complexes with a high proportion of one-bedroom units and 0.26 for attached housing with a high proportion of multiple-bedroom units, the 363 units could result in new students ranging between 48 and 95 under future development permitted under the Plan Components, respectively. In order to accommodate these new students, MPCSD schools would need to expand their facilities or renovate the O'Connor School site to increase the overall MPCSD capacity. However, as described above, this growth has been taken into account in the MPCSD's 2012 Enrollment Projection Study Report and consequently their Facilities Master Plan, which is in process.

In conclusion, with the payment of mandatory developer impact fees the impacts to the MPCSD would be *less than significant*.

ii. Redwood City School District

The Plan Components could generate up to 540 new dwelling units in the Redwood CSD service area, projected until 2035. Applying the Redwood CSD's average student generation rate of 0.3 students per unit, the 540 units could result in up to 162 new students. Because the Redwood CSD is the "district of choice," this analysis assumes 70 percent of the 162 students (114 students) would attend Taft Community School and John F. Kennedy Middle Schools. This growth is consistent with the one percent growth per year projected by Redwood CSD (allowing a total of over 250 additional students at these two schools). Therefore, the student growth generated under the Plan Components is taken into account in the Redwood CSD's Fa-

cilities Master Plan, which is being updated. In conclusion, with the payment of mandatory developer impact fees, the impacts to the Redwood CSD would be *less than significant*.

iii. Las Lomas School District

The LLSD schools are at capacity and have added portable classrooms to serve increased students. Current enrollment is over 1,400 students, and the district projects the enrollment to increase up to 1,570 students; this projection does not include the new development under the Housing Element. The LLSD is in the process of developing a Facilities Plan to increase its capacity beyond 1,570 students.

According to the District's Development Impact Fee Justification Study, prepared in 2012, its student generation rate is an average of 0.21 students per unit. With a generation rate of 0.21, the Plan Component's 40 new units could generate up to 9 new students. In conclusion, with the payment of mandatory developer impact fees, the Plan Components would have a *less-than-significant* impact on LLSD schools.

iv. Ravenswood City School District

The Plan Components could result in up to 369 new dwelling units in the Ravenswood CSD service area. Since the types of units (e.g. number of bedrooms) are unknown at the time of preparing this EA, the 369 units could result in new students ranging between 45 and 144 under future development permitted under the Plan Components based on the Ravenswood CSD's student generation rates of 0.12 students per multi-family unit and 0.39 students per single-family unit, respectively. The additional 45 to 144 students would be within the capacity of Ravenswood CSD schools, and the growth would occur incrementally over the 21-year planning horizon. However, adding to the Ravenswood CSD's student projection, the increase in student population may require expansion of the school facilities. In conclusion, with the payment of mandatory developer impact fees, the Plan Components would have a *less-than-significant* impact on Ravenswood CSD schools.

v. Sequoia Union High School District

The Plan Components could generate up to 1,318 new dwelling units in the SUHSD service area. The 1,318 units could result in up to 91 new students, assuming the student generation rates of .069 students per new dwelling unit. The additional 91 students would still be within the capacity of the District's planned facilities, and the growth would occur incrementally over the 21-year planning horizon. However, this increase in student population added to the SUHSD's student projection may require expansion of the school facilities. In conclusion, with the payment of mandatory developer impact fees, the Plan Components would have a *less-than-significant* impact on SUHSD schools.

5. Cumulative Impacts

Regional growth resulting from past, present, and reasonably foreseeable projects would result in increased demand for additional school facilities within the MPCSD, Redwood CSD, LLESD, Ravenswood CSD, and the SUHSD boundaries discussed above. The number of students generated by the Plan Components in each district appears to be consistent with enrollment trends and planned school facility expansions. It is unknown exactly where school facility expansions would occur to support the cumulative increase in population. As specific school expansion or improvement projects are identified, additional project-specific, environmental analyses would be required to be completed by each school district.

In conclusion, with the payment of mandatory developer impact fees, the Plan Components would have a *less-than-significant* impact on school facilities.

6. Impacts and Mitigation Measures

The Plan Components would not result in any significant project-specific or cumulative impacts to the provision of school services, and therefore no mitigation measures are required.

E. Libraries

This section describes the existing conditions and the potential physical environmental impacts with regard to libraries.

1. Regulatory Framework

There are no federal, State, or local regulations pertaining to libraries that apply to the Plan Components.

2. Existing Conditions

There are two public libraries in Menlo Park: the Menlo Park Main Library and the Belle Haven Community Library, which are part of the Peninsula Library System, a consortium of libraries throughout San Mateo County.

The Main Branch, located at 800 Alma Street next to City Hall, is a 34,000 square-foot, 1-story building, expanded and remodeled in 1992, and with minor remodeling in 2010 and 2012. The library provides reader

seats, computers, and meeting rooms. The library's annual circulation in 2011 was 713,000 with a collection of 128,000 books.⁴¹

The Belle Haven Community Library, located in a 3,800 square-foot space at 413 Ivy Drive, was opened in 1999 as part of a joint venture with the Ravenswood City School District. This branch serves primarily the area east of Highway 101, especially students on the Belle Haven Elementary School campus. The library's annual circulation in 2011 was 13,500 with a collection of 18,000 books.⁴²

Both locations provide a range of programs, such as daily children's story times, regular special programs, and a monthly adult Saturday Series, which invite speakers, authors, and performers. Additionally, Wi-Fi access and computer networks are available to all library visitors. Menlo Park residents with a library card can borrow books, magazines, DVDs, and CDs from the 35 public and community college libraries in the Peninsula Library System. Menlo Park residents also have access to E-books and online databases through the Menlo Park Library website.⁴³

The Menlo Park Library indicated that there is a shortage of reading room space and overcrowded children's story times because of increasing number of children. There is also an increasing demand for E-books and access to online services.⁴⁴ Internal bandwidth is at maximum capacity at its current size.

The Belle Haven library is small and has no room to expand to serve a larger population. The Menlo Park Library expects if new housing on the EA Study Sites 12 and 14 is family housing, it will have a larger impact on library service than other types of housing would. Residents in these areas can also use the other neighboring libraries such as the Fair Oaks branch of the Redwood City and the East Palo Alto branch library.

According to the current General Plan, the Menlo Park Library has a goal to maintain a ratio of 3.29 books per capita and a ratio of 1.02 square feet of library space per capita. Currently, the Menlo Park Library is meeting this goal with a ratio of 4.06 books per capita⁴⁵ and 1.05 square feet of library space per capita.⁴⁶

⁴¹ State Library, Public Library Survey Data (2010-11 Fiscal Year), <http://library.ca.gov/lds/librariystats.html>, accessed on December 5, 2012.

⁴² State Library, Public Library Survey Data (2010-11 Fiscal Year), <http://library.ca.gov/lds/librariystats.html>, accessed on December 5, 2012.

⁴³ Menlo Park Library, <http://www.menloparklibrary.org/>, accessed on January 10, 2013.

⁴⁴ Sue Holmer, Director, Menlo Park Library. Interview with The Planning Center | DC&E, on November 13, 2012.

3. Standard of Significance

The Plan Components would have a significant impact with regard to libraries if it would result in substantial adverse physical impacts associated with the provision of or need for new or physically altered library facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, or other performance objectives.

4. Impact Discussion

As previously noted, the Plan Components could generate as many as 3,361 new residents, which may increase the use of library services within Menlo Park.

As indicated above, as development occurs in Menlo Park, new or expanded library facilities may be needed to meet the needs of the associated population growth. The growth generated by the Plan Components, however, does not exceed existing projections.

As specific library expansion or improvement projects are identified, additional project-specific, environmental analysis would be completed under the authority of the Peninsula Library System. Therefore, there would be a *less-than-significant* impact on library services.

5. Cumulative Impacts

The geographic scope of this cumulative analysis is taken as the Menlo Park Library service area, which includes the EA Study Area. The population within the EA Study Area is projected to increase up to 43,400 by 2035, which will increase the demand for library services and facilities. The Menlo Park Library system may need to expand library facilities to meet the increased demand, but existing library services would continue to exceed the goal of 3.29 books per capita for the projected 2035 population. As specific library expansion or improvement projects are identified, additional project-specific, environmental analysis would be completed. Therefore, the cumulative impacts of the Plan Components would not be cumulatively considerable, and there would be a *less-than-significant* cumulative impact.

6. Impacts and Mitigation Measures

The Plan Components would not result in any significant specific or cumulative impacts to the provision of library services, and therefore no mitigation measures are required.

⁴⁵ 146,000 books/35,874 residents = 4.06.

⁴⁶ 37,800 square feet/35,874 residents = 1.05.

4.13 TRANSPORTATION AND TRAFFIC

This chapter describes the existing traffic conditions of the EA Study Area and evaluates the potential environmental consequences of future development that could occur by adopting and implementing the proposed Housing Element Update, General Plan Consistency Update, and associated Zoning Ordinances amendments, together referred to as the “Plan Components” on transportation and traffic. A summary of the relevant regulatory setting and existing conditions is followed by a discussion of Plan Components and cumulative impacts.

The chapter is based on the traffic analysis prepared by TJKM Transportation Consultants dated March 8, 2013, herein referred to as “Traffic Study.” The future baseline traffic volumes have been developed from output of the City/County Association of Governments of San Mateo County (C/CAG) travel demand model run by the Santa Clara Valley Transportation Authority (VTA). The travel demand associated with the Plan Components have been obtained from the C/CAG Model based upon the anticipated future land uses that have been developed resulting from the land use controls under Near-Term 2014 and 2035 conditions.

The complete Traffic Study and technical appendices are included in Appendix F of this EA.

A. Regulatory Framework

1. Federal Laws and Regulations

a. Federal Highway Administration

The Federal Highway Administration (FHWA) is the agency of the United States (U.S.) Department of Transportation (DOT) responsible for the federally-funded roadway system, including the interstate highway network and portions of the primary State highway network, such as Interstate 280 (I-280).

b. Americans with Disabilities Act

The Americans with Disabilities Act (ADA) of 1990 provides comprehensive rights and protections to individuals with disabilities. The goal of the ADA is to assure equality of opportunity, full participation, independent living, and economic self-sufficiency for people with disabilities. To implement this goal, the US Access Board, an independent Federal agency created in 1973 to ensure accessibility for people with disabilities, has created accessibility guidelines for public rights-of-way. While these guidelines have not been formally adopted, they have been widely followed by jurisdictions and agencies nationwide in the last decade. The guidelines, last revised in July 2011, address various issues, including roadway design practices, slope and terrain issues, and pedestrian access to streets, sidewalks, curb ramps, street furnishings, pedestrian sig-

nals, parking, and other components of public rights-of-way. These guidelines would apply to proposed roadways in the EA Study Area.

2. State Laws and Regulations

a. California Department of Transportation

The California Department of Transportation (Caltrans) is the primary State agency responsible for transportation issues. One of its duties is the construction and maintenance of the State highway system. Caltrans approves the planning, design, and construction of improvements for all State-controlled facilities including I-280, US 101, State Route (SR) 82 (El Camino Real), and the associated interchanges for these facilities located in the EA Study Area. Caltrans has established standards for roadway traffic flow and developed procedures to determine if State-controlled facilities require improvements. For projects that may physically affect facilities under its administration, Caltrans requires encroachment permits before any construction work may be undertaken. For projects that would not physically affect facilities, but may influence traffic flow and levels of services at such facilities, Caltrans may recommend measures to mitigate the traffic impacts of such projects.

The following Caltrans procedures and directives are relevant to the Plan Components, particularly State roadway facilities:

- “ **Level of Service Target.** Caltrans maintains a minimum level of service (LOS) at the transition between LOS C and LOS D for all of its facilities.¹ Where an existing facility is operating at less than the LOS C/D threshold, the existing measure of effectiveness should be maintained.²
- “ **Caltrans Project Development Procedures Manual.** This manual outlines pertinent statutory requirements, planning policies, and implementing procedures regarding transportation facilities. It is continually and incrementally updated to reflect changes in policy and procedures. For example, the most recent revision incorporates the Complete Streets policy from Deputy Directive 64-R1, which is detailed below.
- “ **Caltrans Deputy Directive 64.** This directive requires Caltrans to consider the needs of non-motorized travelers, including pedestrians, bicyclists, and persons with disabilities, in all programming, planning, maintenance, construction, operations, and project development activities and products. This includes incorporation of the best available standards in all of the Caltrans’s practices.

¹ Level of service is explained further in Section B.2.a, Level of Service Methodology.

² California Department of Transportation, 2002. *Guide for the Preparation of Traffic Impact Studies.*

- “ **Caltrans Deputy Directive 64-RI.** This directive requires Caltrans to provide for the needs of travelers of all ages and abilities in all planning, programming, design, construction, operations, and maintenance activities and products on the State highway system. Caltrans supports bicycle, pedestrian, and transit travel with a focus on “complete streets” that begins early in system planning and continues through project construction and maintenance and operations.
- “ **Caltrans Director’s Policy 22.** This policy establishes support for balancing transportation needs with community goals. Caltrans seeks to involve and integrate community goals in the planning, design, construction, and maintenance and operations processes, including accommodating the needs of bicyclists and pedestrians.
- “ **Environmental Assessment Review and Comment.** Caltrans, as a responsible agency under the California Environmental Quality Act (CEQA), is available for early consultation on projects to provide guidance on applicable transportation analysis methodologies or other transportation related issues, and is responsible for reviewing traffic impact studies for errors and omissions pertaining to the State highway facilities. In relation to this role, Caltrans published the Guide for the Preparation of Traffic Impact Studies (December 2002), which establishes the Measures of Effectiveness as described under “Level of Service Target” above. The Measures of Effectiveness are used to determine significant impacts on State facilities. This Guide also mandates that traffic analyses include mitigation measures to lessen potential project impacts on State facilities and to meet each project’s fair share responsibility for the impacts. However, the ultimate mitigation measures and their implementations are to be determined based on consultation between Caltrans, the City of Menlo Park, and the project applicants.

b. Complete Streets Act of 2008

The California Complete Streets Act (Assembly Bill 1358) requires cities and counties, when updating their general plans, to ensure that local streets meet the needs of all users.

c. California Transportation Commission

The California Transportation Commission (CTC) consists of nine members appointed by the Governor. The CTC is responsible for the programming and allocation of funds for the construction of highway, passenger rail, and transit improvements throughout the state, including in the EA Study Area. The CTC is also responsible for managing the State Transportation Improvement Program (STIP) and the State Highway Operation and Protection Program (SHOPP) funding programs.

3. Regional Agencies, Plans, and Policies

a. Metropolitan Transportation Commission

The Metropolitan Transportation Commission (MTC) is the transportation planning, coordinating, and financing agency for the nine-county Bay Area, including San Mateo County. It also functions as the federally mandated metropolitan planning organization (MPO) for the region. It is responsible for regularly updating the Regional Transportation Plan (RTP), a comprehensive blueprint for the development of mass transit, highway, airport, seaport, railroad, bicycle, and pedestrian facilities. The current RTP, *Transportation 2035*, was adopted on April 22, 2009. *Transportation 2035* was prepared by MTC in partnership with the Association of Bay Area Governments (ABAG), the Bay Area Air Quality Management District (BAAQMD), and the Bay Conservation and Development Commission (BCDC). MTC updates the RTP every four years. *Transportation 2035* specifies a detailed set of investments and strategies throughout the region from 2010 through 2035 to maintain, manage, and improve the surface transportation system, specifying how anticipated federal, State, and local transportation funds will be spent.

MTC has established its policy on Complete Streets in the Bay Area. The policy states that projects funded all, or in part, with regional funds (e.g. federal, State Transportation Improvement Program, bridge tolls) must consider the accommodation of bicycle and pedestrian facilities, as described in Caltrans Deputy Directive 64. These recommendations do not replace locally-adopted policies regarding transportation planning, design, and construction. Instead, these recommendations facilitate the accommodation of pedestrians, including wheelchair users, and bicyclists into all projects where bicycle and pedestrian travel is consistent with current adopted regional and local plans.

b. San Mateo City/County Association of Governments

i. 2011 Congestion Management Plan

The C/CAG is designated as the Congestion Management Agency for the county. C/CAG's Congestion Management Plan (CMP) identifies strategies to respond to future transportation needs, identifies procedures to alleviate and control congestion, and promotes countywide solutions. Pursuant to the US EPA's transportation conformity regulations and the Bay Area Conformity State Implementation Plan (also known as the Bay Area Air Quality Conformity Protocol), the CMP is required to be consistent with the MTC planning process including regional goals, policies, and projects for the Regional Transportation Improvement Program (RTIP).³ MTC cannot approve any transportation plan, program, or project unless these activities conform to the State Implementation Plan (SIP).

³ City/County Association of Governments of San Mateo (C/CAG), 2011. Final San Mateo County Congestion Management Program (CMP) 2011. http://www.ccag.ca.gov/pdf/Studies/Final%202011%20CMP_Nov11.pdf.

The CMP roadway system is comprised of 53 roadway segments and 16 intersections, including all of the State highways within the County in addition to Mission Street, Geneva Avenue, and Bayshore Boulevard. The intersections are located mostly along El Camino Real.

ii. Countywide Transportation Plan

The Countywide Transportation Plan was adopted by C/CAG in 2001, to reduce traffic congestion, increase demand for transit, decrease demand for automobile travel, and increase capacity for all modes. The plan also targets to increase the safety, reliability, and convenience of all transportation systems.

iii. Comprehensive Bicycle and Pedestrian Plan 2011

The C/CAG, with support from the San Mateo County Transportation Authority (SMCTA) have developed the 2011 San Mateo County Comprehensive Bicycle and Pedestrian Plan (CBPP) to address the planning, design, funding, and implementation of bicycle and pedestrian projects of countywide significance. Relevant goals and policies are listed as following:

- “ Goal 2: More People Riding and Walking for Transportation and Recreation
- “ Policy 2.4: Encourage local agencies and transit operators, such as SamTrans, Caltrain, and BART to work cooperatively to promote bicycling and walking to transit by improving access to and through stations and stops, installing bicycle parking, and maximizing opportunities for on-board bicycle access.
- “ Policy 2.5: Promote integration of bicycle-related and walking-related services and activities into broader countywide transportation demand management and commute alternatives programs.
- “ Policy 2.6: Serve as a resource to county employers on promotional information and resources related to bicycling and walking.
- “ Goal 4: Complete Streets and Routine Accommodation of Bicyclists and Pedestrians
- “ Policy 4.1: Comply with the complete streets policy requirements of Caltrans and the Metropolitan Transportation Commission concerning safe and convenient access for bicyclists and pedestrians, and assist local implementing agencies in meeting their responsibilities under the policy.
- “ Policy 4.2: For local transportation projects funded by county or regional agencies, encourage that local implementing agencies incorporate complete streets principles as appropriate; that they provide at least equally safe and convenient alternatives if they result in the degradation of bicycle or pedestrian access; and that they provide temporary accommodations for pedestrians and bicyclists during construction.

- “ Policy 4.5: Encourage local agencies to adopt policies, guidelines, standards, and regulations that result in truly bicycle-friendly and pedestrian-friendly land use developments, and provide them technical assistance and support in this area.
- “ Policy 4.6: Discourage local agencies from removing, degrading, or blocking access to bicycle and pedestrian facilities without providing a safe and convenient alternative.

c. Bay Area Air Quality Management District

The air quality district that addresses air pollution in the EA Study Area is the BAAQMD. Since a primary source of air pollution in the Menlo Park region is from motor vehicles, air district regulations affect transportation planning in the EA Study Area. The BAAQMD is a public agency tasked with regulating air pollution in the nine-county Bay Area, including San Mateo County. The BAAQMD’s goals include reducing health disparities due to air pollution, achieving and maintaining air quality standards, and implementing exemplary regulatory programs and compliance of federal, State, and regional regulations. Air quality impacts are discussed in detail in Chapter 4.2, Air Quality, of this EA.

4. Local Regulations and Policies

a. Menlo Park General Plan

The City of Menlo Park General Plan Land Use and Circulation (adopted 1994, with amendments through 2012) includes goals, policies, and actions relevant to transportation and traffic that would apply to the Plan Components. These include the following:

- “ Goal II-A: To maintain a circulation system using the Roadway Classification System that will provide for the safe and efficient movement of people and goods throughout Menlo Park for residential and commercial purposes.
- “ Policy II-A-1: Level of Service D (40 seconds average stopped delay per vehicle) 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 US 101.
- “ Policy II-A-2: The City should attempt to achieve and maintain average travel speeds of 14 miles per hour (Level of Service D) or better on El Camino Real and other arterial roadways controlled by the State and at 46 miles per hour (Level of Service D) or better on US 101. The City shall work with Caltrans to achieve and maintain average travel speeds and intersection level of service consistent with standards established by the San Mateo County Congestion Management Plan.

- “ Policy II-A-3: 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 (60 seconds per vehicle).
- “ Policy II-A-4: 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-8: 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-14: The City staff shall work and consult actively with other agencies that have transportation impacts on the City of Menlo Park.

b. Menlo Park Municipal Code

Other than the existing General Plan, the City of Menlo Park Municipal Code is the primary tool that shapes the form and character of physical development in the City. Standards and regulations established in the Municipal Code are used to implement the goals, objectives, and policies of the General Plan and to regulate all land use within the City.

Title 13, Street, Sidewalks, and Utilities establishes the Transportation Impact Fee (TIF) structure in Chapter 13.26.⁴ As described in Section 13.26.020, TIFs are charged as a requirement of development approval to defray the cost of certain transportation improvements required to serve development within the City of Menlo Park. The City levies a TIF, by establishing the nexus among the trips associated with development, their impacts on the transportation system, and the cost to improve the City’s impacted transportation system. The detailed TIF study, the current version of which was developed in 2009, establishes the required nexus between anticipated future development in the City of Menlo Park and the need for certain improvements to the local transportation facilities.

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 the Council over time. A more detailed design would need to be developed for each improvement measure prior to implementation.

⁴ The City of Menlo Park Transportation Impact Fee was enacted pursuant to the Mitigation Fee Act contained in Government Code Section 66000 et seq. (Ordinance 964 Section 2 (part), 2009).

Not every mitigation measure may ultimately be feasible, depending on variables such as right-of-way acquisition.

c. City's Public Works Department

The City of Menlo Park maintains several environmental programs under the City's Public Works Department. The City's Public Works Department is responsible for developing a more functional and efficient roadway network for the effective movement of people and goods. The division promotes the use of public transit, ride sharing, bicycles, and walking as commuting alternatives to single-occupant automobiles. The City operates a trip reduction program and was the first City on the Peninsula to establish a shuttle program. Transit programs are discussed below under Section B.1.c, Existing Roadway Network.

d. City of Menlo Park Comprehensive Bicycle Development Plan

The 2005 Comprehensive Bicycle Development Plan (Bike Plan) provides a broad vision, strategies, and actions for the improvement of bicycling in the City. The Bike 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 Routes⁵ (see Section B.4 below for a description of bike classifications). 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 Capital Improvement Program (CIP). This process incorporates public comment.

The goals of the Bike Plan provide the context for the specific policies and actions discussed in the Bike Plan. The goals provide the long-term vision and serve as the foundation of the Bike Plan, while the policies of the Bike Plan provide more specific descriptions of actions to undertake to implement the Bike Plan.

⁵ City of Menlo Park, 2005. *Menlo Park Comprehensive Bicycle Development Plan*.

The following are the relevant bicycle-related goals and policies:

- “ Goal 1: Expand and Enhance Menlo Park’s Bikeway Network.
- “ Policy 1.1: Complete a network of bike lanes, bike routes, and shared use paths that serve all bicycle user groups, including commuting, recreation, and utilitarian trips.
- “ Goal 2: Plan for the Needs of Bicyclists.
- “ Policy 2.1: Accommodate bicyclists and other non-motorized users when planning, designing, and developing transportation improvements.
- “ Policy 2.2: Review capital improvement projects to ensure that needs of bicyclists and other non-motorized users are considered in programming, planning, maintenance, construction, operations, and project development activities.
- “ Policy 2.3: Encourage traffic calming, intersection improvements, or other similar actions that improve safety for bicyclists and other non-motorized users.
- “ Policy 2.4: Require developers to adhere to the design standards identified in this Comprehensive Bicycle Development Plan.
- “ Goal 3: Provide for Regular Maintenance of the Bikeway Network.
- “ Policy 3.3: Develop a program to ensure that bicycle loop detectors are installed at all signalized intersections on the bike network and are tested regularly to ensure they remain functional.
- “ Goal 4: Encourage and Educate Residents, Businesses, and Employers in Menlo Park on Bicycling.
- “ Policy 4.6: Encourage major Menlo Park employers and retailers to provide incentives and support facilities for existing and potential employees and customers that commute by bicycle.
- “ Policy 4.9: Promote bicycling as a healthy transportation alternative.

e. Sidewalk Master Plan

The Sidewalk Master Plan⁶ 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.⁷ The Sidewalk Master Plan identified priority streets as those roadways

⁶ City of Menlo Park, 2009. *Sidewalk Master Plan*.

⁷ City of Menlo Park, 2009. *Sidewalk Master Plan*.

that provide network connectivity and 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 which incorporates public comment.

f. Menlo Park Complete Streets Policy

The City's Complete Streets policy was adopted by Resolution No. 6123 by the City Council on March 22, 2013 consistent with AB 1358 to ensure that local streets meet the needs of all users. As described in the Complete Streets Policy, the City of Menlo Park is committed to creating and maintaining Complete Streets that provide safe, comfortable, and convenient travel along and across streets (including streets, roads, highways, bridges, and other portions of the transportation system) through a comprehensive, integrated transportation network that serves all categories of users, including pedestrians, bicyclists, persons with disabilities, motorists, movers of commercial goods, users and operators of public transportation, seniors, children, youth, and families, emergency vehicles and freight.

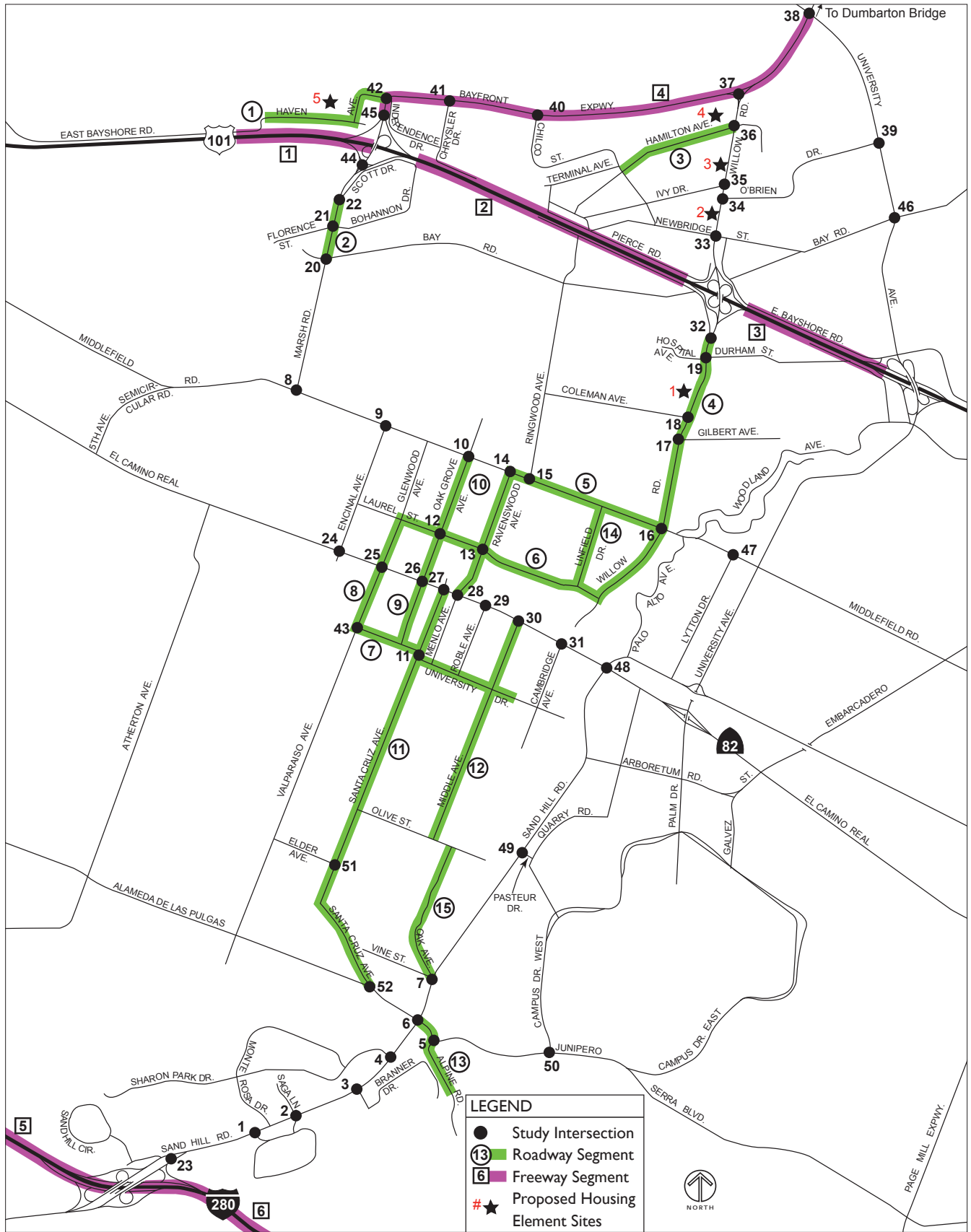
B. Existing Conditions

This section describes the existing transportation environment in the EA Study Area including roadway network, routes of regional significance, City street system, transit facilities, and bicycle facilities. Figure 4.13-1 shows the existing street network serving Menlo Park. The City of Menlo Park General Plan designates a roadway classification system for the existing roadway network within the City of Menlo Park. Such roadway classification system includes Freeway/Expressway, Primary Arterial, Minor Arterial, Collector, and Local.

1. Routes of Regional Significance Roadway Network

The San Mateo County CMP Land Use Analysis Program guidelines require that Routes of Regional Significance be evaluated in land use impact analysis to identify potential candidates for the capital improvement program. Within the City of Menlo Park, the following freeways/expressways/state highways are designated as Routes of Regional Significance:

CITY OF MENLO PARK
HOUSING ELEMENT UPDATE, GENERAL PLAN CONSISTENCY UPDATE, AND
ZONING AMENDMENTS
TRANSPORTATION AND TRAFFIC



Source: TJKM Transportation Consultants.

FIGURE 4.13-1
VICINITY MAP

- “ US 101 (Bayshore Freeway) is an eight-lane north-south freeway that runs between Los Angeles, California and Olympia, Washington and is a major regional freeway on the San Francisco Peninsula. It connects Menlo Park with the other cities in the San Francisco Peninsula from San Jose to San Francisco. There is one high occupancy vehicle (HOV) lane on both directions within the City of Menlo Park. Two interchanges serve Menlo Park at Willow Road and Marsh Road.
- “ I-280 (Junipero Serra Freeway) is an eight-lane north-south freeway that connects San Jose with San Francisco. There is one high occupancy vehicle (HOV) lane on both directions within the City of Menlo Park. One interchange serves Menlo Park at Sand Hill Road.
- “ SR 84 (Bayfront Expressway) is a six-lane east-west expressway that connects the San Francisco Peninsula to the cities on the east side of San Francisco Bay via Dumbarton Bridge. Within the City of Menlo Park, it connects Marsh Road with the Dumbarton Bridge.
- “ SR 82 (El Camino Real) is a primary north-south arterial that connects San Jose with San Francisco. It enters the City of Menlo Park 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.
- “ SR 114 (Willow Road) is a primary four-lane east-west arterial that extends from Bayfront Expressway, becomes a minor two-lane arterial at the US 101 interchange, and ends as a two-lane collector at Alma Street.
- “ SR 109 (University Avenue) is a four-lane east-west street east of US 101 and a two-lane arterial west of US 101 that connects the Bayfront Expressway and the Stanford University. Within the City of Menlo Park, it is a primary four-lane east-west arterial between the City limits and the Bayfront Expressway.

2. City of Menlo Park Street System

a. Freeways and Expressways

As designated in the current City of Menlo Park General Plan, freeways/expressways are access-controlled or limited-access-controlled facilities that carry regional and/or sub-regional traffic. Within the EA Study Area, the following facilities are designated as freeways/expressways:

- “ US 101
- “ I-280
- “ Bayfront Expressway (SR 84)

b. Primary Arterial Streets

Primary Arterial Streets serve major centers of activity and high volume traffic corridors within the urbanized area and accommodate a high proportion of through trips. Within the City, the following streets are designated as primary arterial streets:

- El Camino Real (SR 82)
- Marsh Road between Bohannon Drive and Bayfront Expressway
- Sand Hill Road between I-280 and Santa Cruz Avenue
- University Avenue (SR 109)
- Willow Road (SR 114)

c. Minor Arterial Streets

Minor Arterial Streets interconnect with and augment the freeway and primary arterial street network. Minor Arterial Streets provide greater access to abutting property and carry more locally-oriented traffic than do the Primary Arterial Streets. Within the City, the following streets are designated as minor arterial streets:

- Alameda de las Pulgas
- Alpine Road
- Junipero Serra Boulevard
- Marsh Road between Bay Road and Bohannon Drive
- Middlefield Road
- Newbridge Street between Willow Road and South City Limit
- Ravenswood Avenue
- Sand Hill Road between Santa Cruz Avenue and East City Limit
- Santa Cruz Avenue
- Valparaiso Avenue
- Willow Road between Middlefield Road and Bayshore Expressway

d. Collector Streets

Collector Streets serve to channel the traffic from local streets within residential, commercial, and industrial areas into the arterial system. Within the City, the following streets are designated as collector streets:

- Alma Street
- Avy Road
- Bay Road
- Bohannon Drive

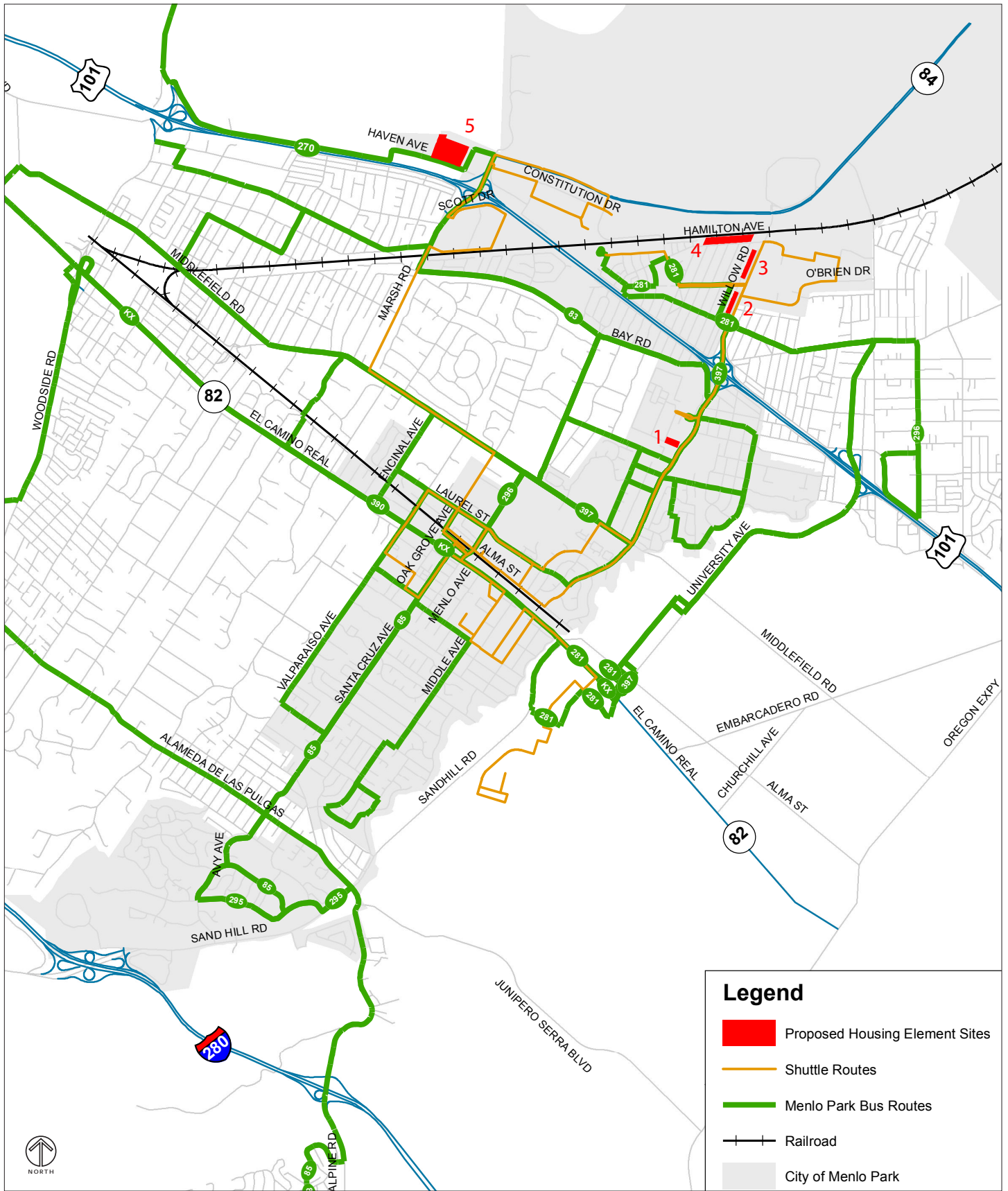
- " Chilco Street
- " Chrysler Drive
- " Constitution Drive
- " Crane Street
- " Encinal Avenue
- " Glenwood Avenue
- " Hamilton Avenue
- " Haven Avenue
- " Laurel Street
- " Menlo Avenue
- " Middle Avenue
- " Newbridge Street between Willow Road and Chilco Street
- " O'Brien Drive
- " Oak Grove Avenue
- " Ringwood Avenue
- " Scott Drive
- " Sharon Park Drive
- " Sharon Road
- " University Drive
- " Willow Road between Alma Street and Middlefield Road

e. Local Streets

Local Streets primarily carry traffic from the immediate land use and typically serve relatively low volumes of short trips. Within Menlo Park, all streets not otherwise classified are designated local streets.

3. Existing Transit Facilities

The EA Study Area is served by two major transit providers as well as some free shuttles services. 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 midday hours by the City. Both shuttles operate on weekdays (Monday through Friday) only. Transit service and facilities, including bus routes, major bus stops, Caltrain tracks, and the Caltrain station are shown in Figure 4.13-2.



Source: TJKM Transportation Consultants.

FIGURE 4.13-2
 EXISTING SHUTTLE AND TRANSIT ROUTES

For fiscal year 2011-2012, Caltrain has proposed a service reduction that could eliminate weekend and off-peak service, among other changes. However, Menlo Park would retain commute-hour service on a par with current service, which would help limit the potential immediate impact on the City. Caltrain and associated transit agencies are currently investigating both short and long-term solutions to restore service to current levels.

a. SamTrans

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 Express and local service to Palo Alto, Menlo Park, Atherton, Redwood City, San Carlos, Belmont, SFO, and San Francisco. In Menlo Park, the route travels through El Camino Real. The mixed-service buses operate approximately every hour through the day.
- “ Route 83 serves public schools in Menlo Park via various roadways. The route operates on school days only, approximately every 3 to 10 minutes during the school peak periods.
- “ Route 85 serves Portola Valley, Woodside and Skyllonda, via Alameda de Las Pulgas, Alpine Road, and Sharon Park Drive. The route operates on Mondays, Tuesday, Thursdays, and Fridays only, with two buses on both directions during the morning peak period and one southbound bus and four northbound buses in the afternoon.
- “ Route 281 serves Stanford Shopping Center, Palo Alto Caltrain Station, East Palo Alto, and Onetta Harris Community Center, via Newbridge Street, Bay Road, and University Avenue in Menlo Park. The route operates approximately every 30 minutes through the day.
- “ Route 295 serves Downtown San Mateo, Hillsdale Shopping Center, Sequoia Hospital, Redwood City, and Menlo Park. In Menlo Park, the route travels through Marsh Road, Bay Road, Willow Road, Middlefield Road, Ravenswood Avenue, Oak Grove Avenue, and Santa Cruz Avenue. The route operates on weekdays only, every 30 to 70 minutes.
- “ Route 296 serves Redwood City, Atherton, Menlo Park, and East Palo Alto. In Menlo Park, the route travels through Middlefield Road and Willow Road, and connects to the Caltrain Menlo Park station. The route operates about every 5 to 10 minutes during the weekday peak hours, and every hour for the rest of operating hours on weekdays and over the weekend.

- “ Route 390 serves Daly City BART, Colma, South San Francisco, San Bruno, Millbrae, Burlingame, San Mateo, Belmont, San Carlos, Redwood City, Atherton, Menlo Park, and Palo Alto, via El Camino Real. The route operates on the weekdays only, with an approximately 30 minutes’ headway.
- “ Route 397 serves San Francisco, South San Francisco, San Francisco International Airport, Burlingame, San Mateo, Belmont, San Carlos, Redwood City, and Palo Alto. In Menlo Park, the route travels through Middlefield Road and Willow Road. The route provides late-night service only, every 60 minutes.
- “ Route ECR serves Daly City BART, Colma BART, South San Francisco, San Bruno, Millbrae Transit Center, Burlingame, San Mateo, Belmont, San Carlos, Redwood City Caltrain, Menlo Park, and Palo Alto Transit Center, via El Camino Real. The route operates only on weekends, with a 20 to 30 minutes’ headway.
- “ Route 270 mainly provides local service and serves as Caltrain connection in Redwood City. In Menlo Park, the route travels through Havens Avenue and Marsh Road. The route operates every 60 minutes through the day.

i. SamTrans Short Range Transit Plan

Planned short-range improvements to SamTrans service focus on optimizing the current system’s condition and performance.⁸ 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.

b. 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 including 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

⁸ San Mateo County Transit District (SamTrans), 2008. *Short Range Transit Plan 2008-2017*.

than 45 minutes or 25 minutes, respectively. Caltrain offers 22 weekday commute-hour express trains, some of which serve Menlo Park southbound in the AM peak period and northbound in the PM 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.⁹

i. 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.¹⁰ 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.

c. Free Shuttles

Two employee shuttles are provided between the Menlo Park Caltrain station and Marsh Road/Willow Road office buildings during the commute hours. These shuttles, which operate during the AM and PM peak hours, take passengers from Caltrain to their workplaces, schools, shopping, or appointments. The Willow and Marsh bus routes carried 51,000 passengers in 2010. These two shuttles are funded jointly by the BAAQMD Transportation Fund for Clean Air, Peninsula Corridor Joint Powers Board, and the City of Menlo Park and local employers. The shuttles operate based on the Caltrain schedule.

The City also provides a free community midday shuttle service during weekdays approximately every hour. The free shuttle is a community service route open to the general public but focusing on the senior community. The major stops include Menlo Park Library, Belle Haven library, Menlo Park Senior Center, downtown Menlo Park, Caltrain, Menlo Medical Clinic, Safeway, Little House, Stanford Shopping Center,

⁹ Peninsula Corridor Joint Powers Board (Caltrain), 2008. *Short Range Transit Plan 2008-2017*.

¹⁰ Peninsula Corridor Joint Powers Board (Caltrain), 2008. *Short Range Transit Plan 2008-2017*.

and Stanford Medical Center. The shuttle stops at all SamTrans stops. It is also a flag down service for the convenience of the passengers. For residents who do not live within an easy walking distance of a SamTrans stop or the Midday shuttle service stop, Menlo Park offers a shuttle service that picks up passengers at their homes and provides rides to specific shopping areas.¹¹

d. Other Transit Services

In addition, *Dumbarton Express Bus Service line DB*, administered and governed by the Alameda-Contra Costa Transit District, serves commuters between Stanford University and the East Bay, via SR 84, Willow Road, and University Avenue. The bus line operates on weekdays only every 30 to 45 minutes.

4. Existing Bicycle Facilities

Bikeway planning and design in California typically relies on the guidelines and design standards established by Caltrans in the Highway Design Manual (Chapter 1000: Bikeway Planning and Design).^{12,13} Chapter 1000 follows standards developed by the American Association of State Highway and Transportation Officials and the 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.

The three types of bikeways identified by Caltrans are described below:

- “ Class I Bikeway. Typically called a “bike path,” a Class I bikeway provides bicycle travel on a paved right-of-way completely separated from any street or highway.
- “ Class II Bikeway. Often referred to as a “bike lane,” a Class II bikeway provides a striped and stenciled lane for one-way travel on a street or highway.
- “ Class III Bikeway. Generally referred to as a “bike route,” a Class III bikeway provides for shared use with pedestrian or motor vehicle traffic and is identified only by signing.

¹¹ City/County Association of Governments of San Mateo (C/CAG), 2011. Final San Mateo County Congestion Management Program (CMP) 2011. http://www.ccag.ca.gov/pdf/Studies/Final%202011%20CMP_Nov11.pdf.

¹² California Department of Transportation, 2002. Guide for the Preparation of Traffic Impact Studies.

¹³ California Department of Transportation, 2006. Highway Design Manual, 6th Edition.

The existing and proposed bicycle facilities in the EA Study Area identified in the Bike Plan are illustrated in Figure 4.13-3. Currently, there are a total of 2.83 miles of bike path in Menlo Park, including Dumbarton Bridge and Bayfront Expressway Bike Path, Bayfront Park Bike Paths, and Alpine Road Class I. In addition, there are a total of 16.44 miles of bike lane and 0.2 miles of bike route along various arterials and collectors in the City.

5. Existing Pedestrian Facilities

A survey of the existing pedestrian facilities was prepared as part of the City of Menlo Park's 2009 Sidewalk Master Plan. The existing pedestrian facilities within the EA Study Area include 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).

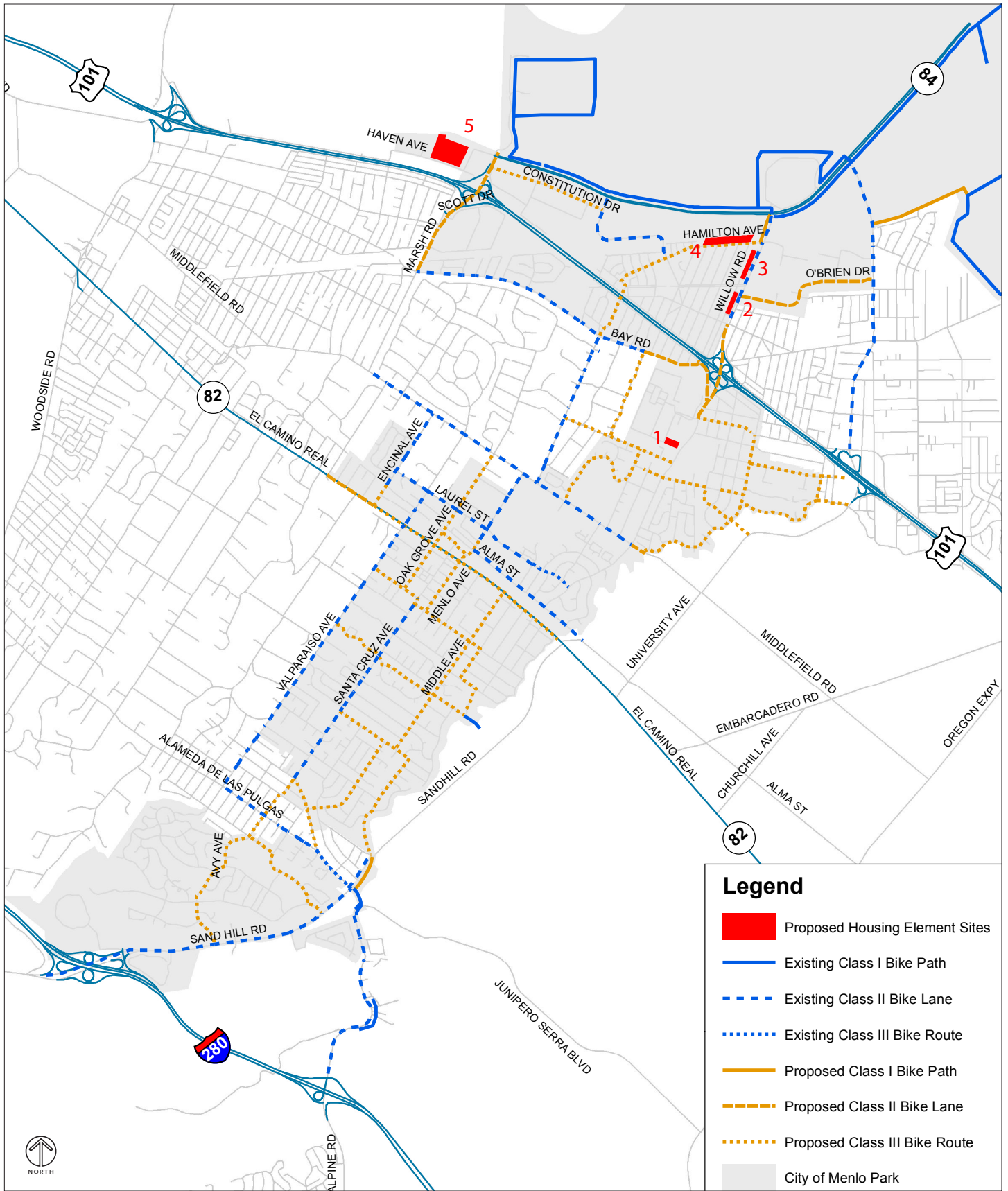
C. Existing Traffic Operations

1. Intersection Peak Hour Traffic Volumes

Intersection operations are evaluated for the weekday AM and PM peak hours. These conditions represent the regularly occurring peak time for the potential land uses under the Plan Components. Under the existing conditions scenario the current 2012 traffic volumes and roadway conditions are based on existing counts provided by City staff, including AM and PM peak hour turning movement counts for the study intersections.

2. Intersection Level of Service

The operational performance of a roadway network is commonly described with the term level of service. The level of service describes the operating conditions experienced by persons on a transportation system. For motorized vehicles, level of service is a qualitative measure of the effects of a number of factors, including speed and travel time, traffic interruptions, freedom to maneuver, driving comfort, and convenience. The level of service are designated LOS A through F, from best to worst, which cover the entire range of traffic operations that might occur. LOS A through E generally represent traffic volumes at less than roadway capacity (free flow conditions), while LOS F represents conditions where traffic demands exceed capacity and the flow of traffic breaks down, resulting in stop-and-go conditions and long queues of vehicles. The level of service methodology is detailed in Appendix A of the Traffic Report (see Appendix F of this EA).



Source: TJKM Transportation Consultants.

FIGURE 4.13-3

EXISTING AND PROPOSED BICYCLE FACILITIES

a. Signalized Intersections

Operating conditions at the EA Study Area intersections were evaluated using the methodology outlined in the 2000 Highway Capacity Manual (HCM 2000) Operations. A signalized intersection's delay measured in seconds-per-vehicle. Control delay includes initial deceleration based on the weighted average control delay measured in seconds-per-vehicle. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration.

Table 4.13-1 summarizes the relationship between the control delay and level of service for signalized intersections.

3. Intersection Levels of Service Standards

a. Caltrans

As previously stated, Caltrans endeavors to maintain a target service level at the transition between LOS C and LOS D on State highway facilities; however, the agency acknowledges that this may not always be feasible, particularly in urban environments where right-of-way is constrained. Where maintaining LOS C/D is not feasible, Caltrans attempts to maintain the existing level of service when assessing the impact of new development. A volume-to-capacity ratio of 0.80 corresponds to the C/D threshold.

b. C/CAG 2011 CMP Intersection Standards

The C/CAG level of service standards for the CMP roadway system are described as below:

- LOS D: Bayfront Expressway (SR 84) between US 101 and Willow Road
- LOS E: Bayfront Expressway (SR 84) between Willow Road and University Avenue
- LOS F: US 101
- LOS D: I-280
- LOS F: Intersection of Bayfront Expressway (SR 84) and University Avenue (SR 109)
- LOS F: Intersection of Bayfront Expressway (SR 84) and Willow Road (SR 114)
- LOS F: Intersection of Bayfront Expressway (SR 84) and Marsh Road

c. Menlo Park Standards for Intersections on Arterial Streets

The addition of project traffic causes an intersection operating at LOS D or better degrade to LOS E or F; or have an increase of 23 seconds or greater in average vehicle delay; or causes an increase of more than 0.8 seconds of average delay to vehicles on the most critical movements for intersections operating at LOS E or F prior to the addition of project traffic.

TABLE 4.13-1 SIGNALIZED INTERSECTION LEVEL OF SERVICE CRITERIA

Level of Service	Description	Average Control Delay (Seconds)
A	Operations with very low delay occurring with favorable traffic signal progression and/or short cycle lengths.	< 10.0
B	Operations with low delay occurring with good progression and/or short cycle lengths.	> 10.0 to 20.0
C	Operations with average delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures begin to appear.	> 20.0 to 35.0
D	Operations with longer delays due to a combination of unfavorable progression, long cycle lengths, or high V/C ratios. Many vehicles stop and individual cycle failures are noticeable.	> 35.0 to 55.0
E	Operations with high delay values indicating poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences. This is considered to be the limit of acceptable delay.	> 55.0 to 80.0
F	Operations with delays unacceptable to most drivers occurring due to over-saturation, poor progression, or very long cycle lengths.	> 80.0

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

d. Menlo Park Standards for State Controlled Intersections

The addition of project traffic causes an intersection operating at LOS D or better degrade to LOS E or F; or have an increase of 23 seconds or greater in average vehicle delay; or causes an increase of more than 0.8 seconds of average delay to vehicles on the most critical movements for intersections operating at LOS E or F prior to the addition of project traffic.

e. Menlo Park Standards for Intersections on Collector Streets

The addition of project traffic causes an intersection operating at LOS C or better degrade to LOS D, E, or F; or have an increase of 23 seconds or greater in average vehicle delay; or causes an increase of more than 0.8 seconds of average delay to vehicles on the most critical movements for intersections operating at LOS D, E, or F prior to the addition of project traffic.

f. Palo Alto Intersection Standards

The addition of project traffic causes an intersection operating at LOS E or better degrade to LOS F; or for intersections currently operating at LOS F causes an increase of more than 4 seconds of average delay to vehicles on the most critical movements, and an increase of more than 0.01 of volume-to-capacity (v/c) ratio.

g. Town of Atherton Intersections Standards

The addition of project traffic causes an intersection operating at LOS D or better degrade to LOS E or F; or causes an intersection operating at LOS E to LOS F; or have an increase of 4 seconds or greater in average vehicle delay for intersections currently operating at LOS F.

h. County of San Mateo Intersection Standards

San Mateo County does not have specific level of service standards for intersections under the County's jurisdiction. Therefore, the Traffic Report prepared for the Plan Components applied the City of Menlo Park standards for intersections under the County's jurisdiction.

i. County of Santa Clara Intersection Standards

The addition of project traffic causes an intersection operating at LOS F an increase of more than 4 seconds of average delay to vehicles on the most critical movements, and an increase of more than 0.01 of volume-to-capacity (v/c) ratio.

4. Existing Levels of Service

The level of service was evaluated for the 52 intersections in the EA Study Area under existing 2012 conditions. Detailed level of service calculations are contained in Appendix C of the Traffic Report (see Appendix F of this EA). Figures 4.13-4a and 4.13-4b illustrates the existing peak hour turning movement volumes at the study intersections, as well as existing lane geometry and traffic controls.

As shown in Table 4.13-2 under existing 2012 conditions, three of the 52 study intersections operate at unacceptable levels of service at the PM peak hour as described below:

- Middlefield Road and Willow Road (Menlo Park) operates at LOS E
- Bayfront Expressway and University Avenue (Caltrans) operates at LOS F
- Bayfront Expressway and Marsh Road (Caltrans) operates at LOS E

5. Roadway and Freeway Volumes

The Average Daily Traffic Volume (ADT) and level of service was analyzed for 15 local roadway and six freeway segments. Appendix B of the Traffic Report (see Appendix F of this EA) includes the data sheets for the roadway segment ADT counts. The selected study roadway and freeway segments are shown on Figure 4.13-1.

6. Roadway and Freeway Standards

a. Menlo Park Standards for Minor Arterial Streets

If the existing ADT is: (1) greater than 18,000 (90 percent 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 percent of capacity) but less than 18,000, and the project related traffic increases the ADT by 12.5 percent 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 percent.

b. Menlo Park Standards for Collector Streets

If the existing ADT is: (1) greater than 9,000 (90 percent 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 percent of capacity) but less than 9,000, and the project related traffic increases the ADT by 12.5 percent 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 percent.

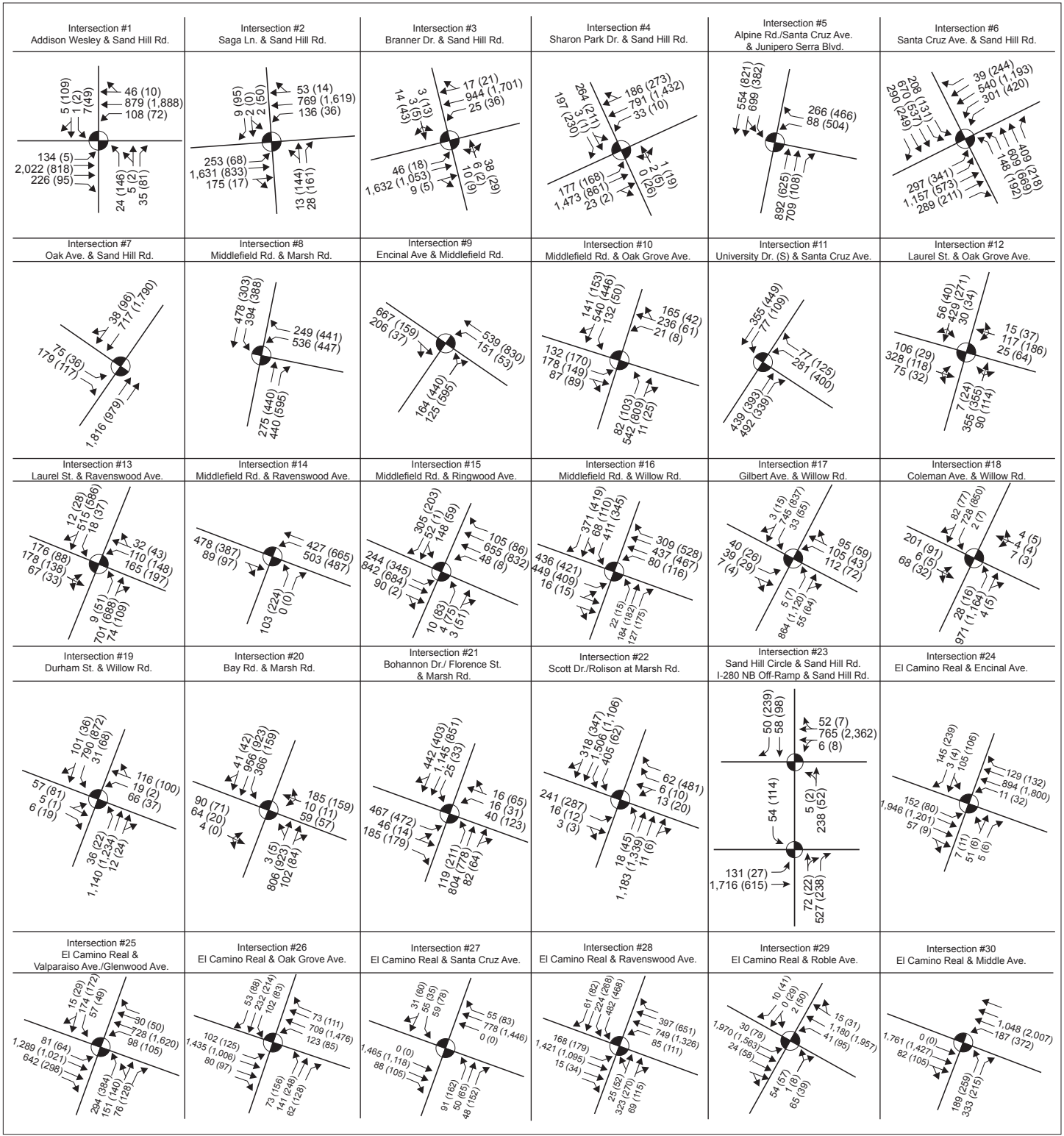
c. Menlo Park Standards for Local Streets

If the existing ADT is: (1) greater than 1,350 (90 percent 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 percent of capacity) but less than 1,350, and the project related traffic increases the ADT by 12.5 percent or the ADT becomes 1,350; or (3) the ADT is less than 750, and the project related traffic increases the ADT by 25 percent.

d. San Mateo County Standards for Freeway Segments

If the addition of project traffic causes a freeway segment to operate at a level of service that violates the standard adopted in the current San Mateo County CMP; or increases traffic demand by an amount equal to one percent or more of the segment's capacity for a segment violating the CMP level of service prior to the addition of project traffic.

CITY OF MENLO PARK
HOUSING ELEMENT UPDATE, GENERAL PLAN CONSISTENCY UPDATE, AND
ZONING AMENDMENTS
TRANSPORTATION AND TRAFFIC



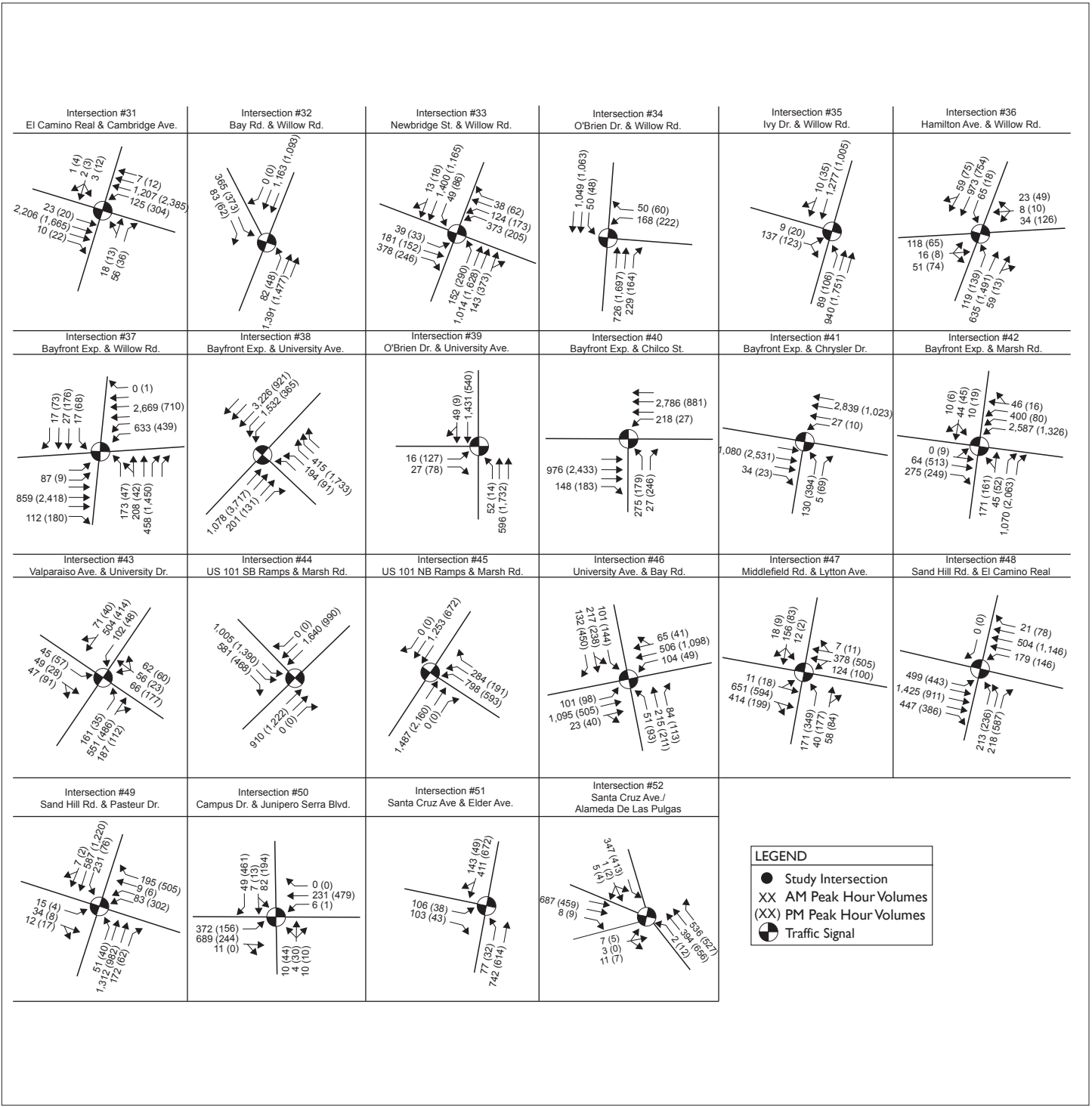
Source: TJKM Transportation Consultants.

LEGEND

- Study Intersection
- XX AM Peak Hour Volumes
- (XX) PM Peak Hour Volumes
- ⊙ Traffic Signal

FIGURE 4.13- 4A

EXISTING CONDITIONS PEAK HOUR VOLUMES AND LANE CONFIGURATIONS



Source: TJKM Transportation Consultants.

FIGURE 4.13-4B

EXISTING CONDITIONS PEAK HOUR VOLUMES AND LANE CONFIGURATIONS

CITY OF MENLO PARK
HOUSING ELEMENT UPDATE, GENERAL PLAN CONSISTENCY UPDATE,
AND ZONING ORDINANCE AMENDMENTS ENVIRONMENTAL ASSESSMENT
TRANSPORTATION AND TRAFFIC

TABLE 4.13-2 INTERSECTION LEVELS OF SERVICE – 2012 EXISTING CONDITIONS

No.	Intersection	Control	Jurisdiction	LOS Threshold	AM Peak Hour		PM Peak Hour	
					LOS	Delay (sec)	LOS	Delay (sec)
1	Addison Wesley and Sand Hill Rd.	Signal	Menlo Park	D	B	11.4	B	17.5
2	Saga Ln. and Sand Hill Rd.	Signal	Menlo Park	D	A	8.4	B	11.8
3	Branner Dr. and Sand Hill Rd.	Signal	Menlo Park	D	A	4.5	A	5.4
4	Sharon Park Dr. and Sand Hill Rd.	Signal	Menlo Park	D	C	21.9	C	25.2
5	Alpine Rd./Santa Cruz Ave. and Junipero Serra Blvd.	Signal	Menlo Park	D	D	52.4	D	48.3
6	Santa Cruz Ave. and Sand Hill Rd.	Signal	Menlo Park	D	D	45.0	D	45.3
7	Oak Ave. and Sand Hill Rd.	Signal	Menlo Park	D	B	10.6	A	6.2
8	Middlefield Rd. and Marsh Rd.	Signal	Atherton	D	C	25.7	C	26.7
9	Encinal Ave. and Middlefield Rd.	Signal	Atherton	D	B	19.8	A	9.8
10	Middlefield Rd. and Oak Grove Ave.	Signal	Atherton	D	B	13.7	B	10.5
11	University Dr. (S) and Santa Cruz Ave.	Signal	Menlo Park	D	B	12.2	B	15.6
12	Laurel St. and Oak Grove Ave.	Signal	Menlo Park	C	B	14.8	B	11.6
13	Laurel St. and Ravenswood Ave.	Signal	Menlo Park	D	B	16.3	B	12.7
14	Middlefield Rd. and Ravenswood Ave.	Signal	Menlo Park	D	C	23.9	D	35.5
15	Middlefield Rd. and Ringwood Ave.	Signal	Menlo Park	D	C	27.4	C	26.3
16	Middlefield Rd. and Willow Rd.	Signal	Menlo Park	D	D	47.6	E	62.2
17	Gilbert Ave. and Willow Rd.	Signal	Menlo Park	D	B	12.9	A	9.4
18	Coleman Ave. and Willow Rd.	Signal	Menlo Park	D	B	17.1	A	9.5
19	Durham St. and Willow Rd.	Signal	Menlo Park	D	B	12.1	B	11.8

TABLE 4.13-2 INTERSECTION LEVELS OF SERVICE – 2012 EXISTING CONDITIONS

No.	Intersection	Control	Jurisdiction	LOS Threshold	AM Peak Hour		PM Peak Hour	
					LOS	Delay (sec)	LOS	Delay (sec)
20	Bay Rd. and Marsh Rd.	Signal	Menlo Park	D	B	17.6	B	13.1
21	Bohannon Dr./Florence St. and Marsh Rd.	Signal	Menlo Park	D	C	33.6	D	39.5
22	Scott Dr./Rolison Rd. and Marsh Rd.	Signal	Menlo Park	D	C	25.3	D	40.1
23	Sand Hill Circle and Sand Hill Rd.	Signal	Menlo Park	D	C	25.8	C	32.5
	I-280 NB Off-Ramp and Sand Hill Rd.	Signal	Caltrans	D	C	22.1	C	21.2
24	El Camino Real and Encinal Ave.	Signal	Caltrans	D	B	15.8	B	18.9
25	El Camino Real and Valparaiso Ave./Glenwood Ave.	Signal	Caltrans	D	C	32.3	C	34.1
26	El Camino Real and Oak Grove Ave.	Signal	Caltrans	D	C	30.3	C	32.6
27	El Camino Real and Santa Cruz Ave.	Signal	Caltrans	D	B	12.6	B	18.3
28	El Camino Real and Ravenswood Ave./Menlo Ave.	Signal	Caltrans	D	D	39.4	D	41.7
29	El Camino Real and Roble Ave.	Signal	Caltrans	D	B	11.9	B	16.7
30	El Camino Real and Middle Ave.	Signal	Caltrans	D	C	29.3	D	45.0
31	El Camino Real and Cambridge Ave.	Signal	Caltrans	D	B	11.4	B	15.2
32	Bay Rd. and Willow Rd.	Signal	Caltrans	D	C	20.0	B	19.5
33	Newbridge St. and Willow Rd.	Signal	Caltrans	D	D	50.2	D	40.7
34	O'Brien Dr. and Willow Rd.	Signal	Caltrans	D	B	15.3	D	37.9
35	Ivy Dr. and Willow Rd.	Signal	Caltrans	D	B	13.7	B	12.6
36	Hamilton Ave. and Willow Rd.	Signal	Caltrans	D	C	24.2	C	22.7

TABLE 4.13-2 INTERSECTION LEVELS OF SERVICE – 2012 EXISTING CONDITIONS

No.	Intersection	Control	Jurisdiction	LOS Threshold	AM Peak Hour		PM Peak Hour	
					LOS	Delay (sec)	LOS	Delay (sec)
37	Bayfront Exp. and Willow Rd.	Signal	Caltrans	D	C	22.1	D	42.0
38	Bayfront Exp. and University Ave.	Signal	Caltrans	D	C	22.0	F	124.6
39	O'Brien Dr. and University Ave.	Signal	Caltrans	D	A	5.5	A	9.5
40	Bayfront Exp. and Chilco St.	Signal	Caltrans	D	B	19.4	B	16.3
41	Bayfront Exp. and Chrysler Dr.	Signal	Caltrans	D	A	8.0	C	21.4
42	Bayfront Exp. and Marsh Rd.	Signal	Caltrans	D	C	34.1	E	67.7
43	Valparaiso Ave. and University Dr.	Signal	Menlo Park	D	B	13.0	B	15.6
44	US 101 SB Ramps and Marsh Rd.	Signal	Caltrans	D	C	23.9	C	21.0
45	US 101 NB Ramps and Marsh Rd.	Signal	Caltrans	D	B	15.8	B	16.3
46	University Ave. and Bay Rd.	Signal	Caltrans	E	C	25.6	C	32.7
47	Middlefield Rd. and Lytton Ave.	Signal	Palo Alto	E	D	35.2	D	36.8
48	Sand Hill Rd. and El Camino Real	Signal	Caltrans	D	C	21.3	C	24.2
49	Sand Hill Rd. and Pasteur Dr.	Signal	Palo Alto	E	C	22.9	C	26.9
50	Campus Dr. and Junipero Serra Blvd.	Signal	Santa Clara Co.	E	B	17.7	C	33.7
51	Santa Cruz Ave. and Elder Ave.	Signal	Menlo Park	D	B	13.2	A	6.0
52	Santa Cruz Ave./ Alameda De Las Pulgas	Signal	San Mateo Co.	D	B	11.9	B	12.2

Notes: 1. LOS = Level of Service, Delay = Average control delay per vehicle
2. Delay/LOS are for overall intersection
3. **Bold** indicates unacceptable operational conditions based on applicable City/Caltrans standards.

Source: TJKM Transportation Consultants, March 2013.

7. Existing Roadway and Freeway Volumes

a. 2012 Roadway Volumes

For the roadway segments, the ADTs are over 32,000 vehicles per day for the primary arterial segments. As shown in Table 4.13-3, one primary and 14 minor arterial segments exceed 90 percent capacity with ADTs over 18,000 vehicles per day, and the remaining four minor arterial segments are at less than 50 percent capacity with ADTs less than 10,000 vehicles per day. Three collector street segments exceed 90 percent capacity with ADTs over 9,000 vehicles per day, and nine collector streets exceed 50 percent capacity with ADTs over 5,000 vehicles per day. The remaining three collector streets have ADTs less than 5,000 vehicles per day. The two local street segments both exceed 90 percent capacity with ADTs over 1,350 vehicles per day.

b. 2012 Freeway Volumes

Per the 2011 CMP Monitoring Report, the freeway segments operate under existing conditions as follows:

- “ US 101 currently operate at LOS F
- “ SR 84 segment between Marsh Road and Willow operates at LOS B
- “ SR 84 segment between Willow Road and University Avenue operates at LOS F
- “ I-280 segments operate at LOS E

All the study freeway segments currently meet the CMP level of service standards except for the SR 84 segment between Willow Road and University Avenue.

D. Impact Analysis Methodology

This section describes the key elements of the transportation impact analysis methodology, including:

- “ Scenarios Analyzed
- “ Traffic Operations and Capacity Analysis
- “ Project Trip Generation, Distribution and Assignment

1. Scenarios Analyzed

The traffic generated from the Plan Components was estimated through a process that involved vehicle trip generation, trip distribution, and assignment of the trips to the roadway network using the C/CAG travel demand model run by the Santa Clara VTA the various study scenarios. This analysis takes a conservative

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TABLE 4.13-3 ROADWAY TRAFFIC VOLUMES – EXISTING 2012 CONDITIONS

No.	Roadway	Segment	Classification	Existing ADT
1	Haven Ave	City Limits-Bayfront Expwy/Marsh Rd	Collector	5,751
2-1	Marsh Rd	Bay Rd-Bohannon Dr/Florence St	Minor Arterial	27,013
2-2		Bohannon Dr/Florence St-Scott Dr	Primary Arterial	32,768
3	Hamilton Ave	Chilco St-Willow Rd	Collector	3,010
4-1	Willow Rd	Laurel St-Middlefield Rd	Collector	5,181
4-2		Middlefield Rd-Gilbert Ave	Minor Arterial	26,213
4-3		Gilbert Ave-Coleman Ave	Minor Arterial	26,336
4-4		Coleman Ave-Durham St/Hospital Ave	Minor Arterial	28,038
4-5		Durham St/Hospital Ave-Bay Rd	Minor Arterial	32,148
5	Middlefield Rd	Ravenswood Ave-Willow Rd	Minor Arterial	20,668
6-1	Laurel St	Glenwood Ave-Oak Grove Ave	Collector	3,916
6-2		Oak Grove Ave-Ravenswood Ave	Collector	4,404
6-3		Ravenswood Ave-Willow Rd	Collector	4,917
7-1	University Dr	Middle Ave-Menlo Ave	Collector	5,666
7-2		Menlo Ave-Santa Cruz Ave	Collector	17,641
7-3		Santa Cruz Ave-Oak Grove Ave	Collector	7,052
7-4		Oak Grove Ave-Valparaiso Ave	Collector	5,376
8-1	Valparaiso Ave/ Glenwood Ave	University Dr-El Camino Real	Minor Arterial	13,238
8-2		El Camino Real-Laurel St	Collector	5,899
9-1	Oak Grove Ave	University Dr -El Camino Real	Collector	10,038
9-2		El Camino Real-Laurel St	Collector	9,677
9-3		Laurel St-Middlefield Rd	Collector	8,556
10-1	Ravenswood Ave	El Camino Real-Alma St	Minor Arterial	24,076
10-2		Alma St-Laurel St	Minor Arterial	19,912
10-3		Laurel St-Middlefield Rd	Minor Arterial	17,977

No.	Roadway	Segment	Classification	Existing ADT
11-1		Alameda de las Pulgas- Avy Ave/Orange Ave	Minor Arterial	9,238
11-2		Avy Ave/Orange Ave-Olive St	Minor Arterial	16,097
11-3	Santa Cruz Ave	Olive St-University Dr	Minor Arterial	17,179
11-4		University Dr-Crane St	Minor Arterial	8,895
11-5		Crane St-El Camino Real	Minor Arterial	8,074
12-1	Middle Ave	Olive St-University Dr	Collector	7,222
12-2		University Dr-El Camino Real	Collector	7,519
13-1	Alpine Rd/	Junipero Serra Blvd-City Limits	Minor Arterial	23,406
13-2	Santa Cruz Ave	Sand Hill Rd-Junipero Serra Blvd	Minor Arterial	30,187
14	Linfield Dr	Middlefield Rd - Laurel St	Local	1,583
15	Oak Ave	Sand Hill Rd - Olive St	Local	2,518

Source: TJKM Transportation Consultants, March 2013.

approach by applying both a one percent compound growth per year and the traffic generated by the pending/approved projects within the City of Menlo Park shown on Table 4.13-4. The following four scenarios were modeled with and without the future trips that could be generated Plan Components:

- “ *Near-Term 2014 without Plan Components Condition.* Under this scenario a one percent compound growth per year is assumed for the increase in traffic volume within two years plus the traffic generated by the pending/approved projects within the City of Menlo Park.
- “ *Near-Term 2014 plus Plan Components Conditions.* This scenario adds traffic generated by the future development to the one percent compound growth per year assumed for the increase in traffic volume within two years plus traffic generated by the pending/approved projects within Menlo.
- “ *2035 Without Plan Components Conditions.* Under this scenario a one percent compound growth per year is assumed for the increase in traffic volume within 23 years plus traffic generated by the pending/approved projects within Menlo Park.

TABLE 4.13-4 LIST OF APPROVED/PENDING PROJECTS IN THE EA STUDY AREA

Project Address	Type of Use	Size	Units of Measure	Status
1283 Willow Road (Police/City Service Center)	Office	3.8	ksf	Under Construction
	Retail	5.1	ksf	Under Construction
1460 El Camino Real	Residential	16	Du	Approved New Construction
	Office	26.8	ksf	Approved New Construction
	Commercial	-12.0	ksf	Replace
1300 El Camino Real	Commercial	110.1	ksf	Approved New Construction
	Commercial	-28.6	ksf	Demolished
1906 El Camino Real	Medical Office	9.8	ksf	Shell Complete; No Tenant Improvements
	Restaurant	-5.7	ksf	Demolished
1706 El Camino Real	Medical Office	10.2	ksf	Approved New Construction
	Restaurant	-6.9	ksf	Demolished
100-155 Constitution Drive and 100-190 Independence Drive (Menlo Gateway)	Office	694.7	ksf	Approved New Construction
	Health Club	69.0	ksf	Approved New Construction
	Restaurant	4.3	ksf	Approved New Construction
	Hotel	230	rooms	Approved New Construction
	Office	-133.7	ksf	Replace on Constitution Site
	Office	-63.4	ksf	Replace on Independence Site
	100 Middlefield Road	Office	9.0	ksf

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Project Address	Type of Use	Size	Units of Measure	Status
2484 Sand Hill Road (Quadrus Bldg. 9)	Office	11.3	ksf	Approved New Construction
		-1.8	ksf	Replace (Demolition at Building #1)
		-0.7	ksf	Replace (Demolition at Building #4)
389 El Camino Real	Residential	26	du	Approved New Construction
	Residential	-4	du	Replace
Facebook East 1601 Willow Road	Office	n/a	n/a	Employee increase from 3,600 to 6,600
Facebook West 312-314 Constitution Drive	Office	433.7	ksf	Proposed Construction
Commonwealth Corp. Center 151 Commonwealth - Sobrato	Office	260.0	ksf	Proposed Construction
	Office	-19.2	ksf	Proposed Demolition
	Warehouse	-55.6	ksf	Proposed Demolition
	Manufacturing	-163.1	ksf	Proposed Demolition
VA/Core	Residential	60	du	Proposed Construction

Notes: du = dwelling unit

ksf = thousand square feet

Source: City of Menlo Park, August 2012.

- “ *2035 Plus Plan Components Conditions.* This scenario adds traffic generated by the future development to the one percent compound growth per year assumed for the increase in traffic volume within 23 years plus traffic generated by the pending/approved projects within Menlo Park and the El Camino Real/Downtown Specific Plan project, plus the Stanford University Medical Center (SUMC), a City of Palo Alto project, which consists of a net increase of 854,970 square feet of hospital space and 24,330 square feet of medical office. For the SUMC project, it is only the trips that go through Menlo Park that were considered under this scenario.

2. Traffic Operations and Capacity Evaluation

a. Near-Term 2014 without Plan Components Conditions

Figures 4.13-5a and 4.13-5b illustrates the peak hour turning movement traffic volumes at the study intersections under Near-Term 2014 without Plan Components conditions. Anticipated traffic controls and lane geometries for the 52 study intersections are also included in this figure. Detailed level of service calculations are contained in Appendix D of the Traffic Report (see Appendix F of this EA).

i. Intersection Levels of Service

Under Near-Term 2014 without Plan Components conditions, ten intersections operate at unacceptable levels as described below:

- “ Alpine Road/Santa Cruz Avenue and Junipero Serra Boulevard operates at LOS E during AM peak hour.
- “ Middlefield Road and Marsh Road (Atherton) operates at LOS E during AM peak hour.
- “ Middlefield Road and Willow Road operates at LOS E during AM peak hour and operates at LOS F during PM peak hour.
- “ Scott Drive/Rolison Road and Marsh Road operates at LOS E during PM peak hour.
- “ Newbridge Street and Willow Road (Caltrans) operates at LOS F during both AM and PM peak hours.
- “ Bayfront Expressway and Willow Road (Caltrans) operates at LOS F during both AM and P.M peak hours.
- “ Bayfront Expressway and University Avenue (Caltrans) operates at LOS F during PM peak hour.
- “ Bayfront Expressway and Marsh Road (Caltrans) operates at LOS F during AM and PM peak hours.

- “ Bohannon Drive/Florence Street and Marsh Road: LOS E during PM peak hour
- “ US 101 NB Ramps & Marsh Road (Caltrans): LOS E during AM peak hour

The Near-Term 2014 without Plan Components conditions for the study intersections are identified and compared to Near-Term 2014 plus Plan Components are shown in Table 4.13-7. See Section F, Impacts Discussion, below.

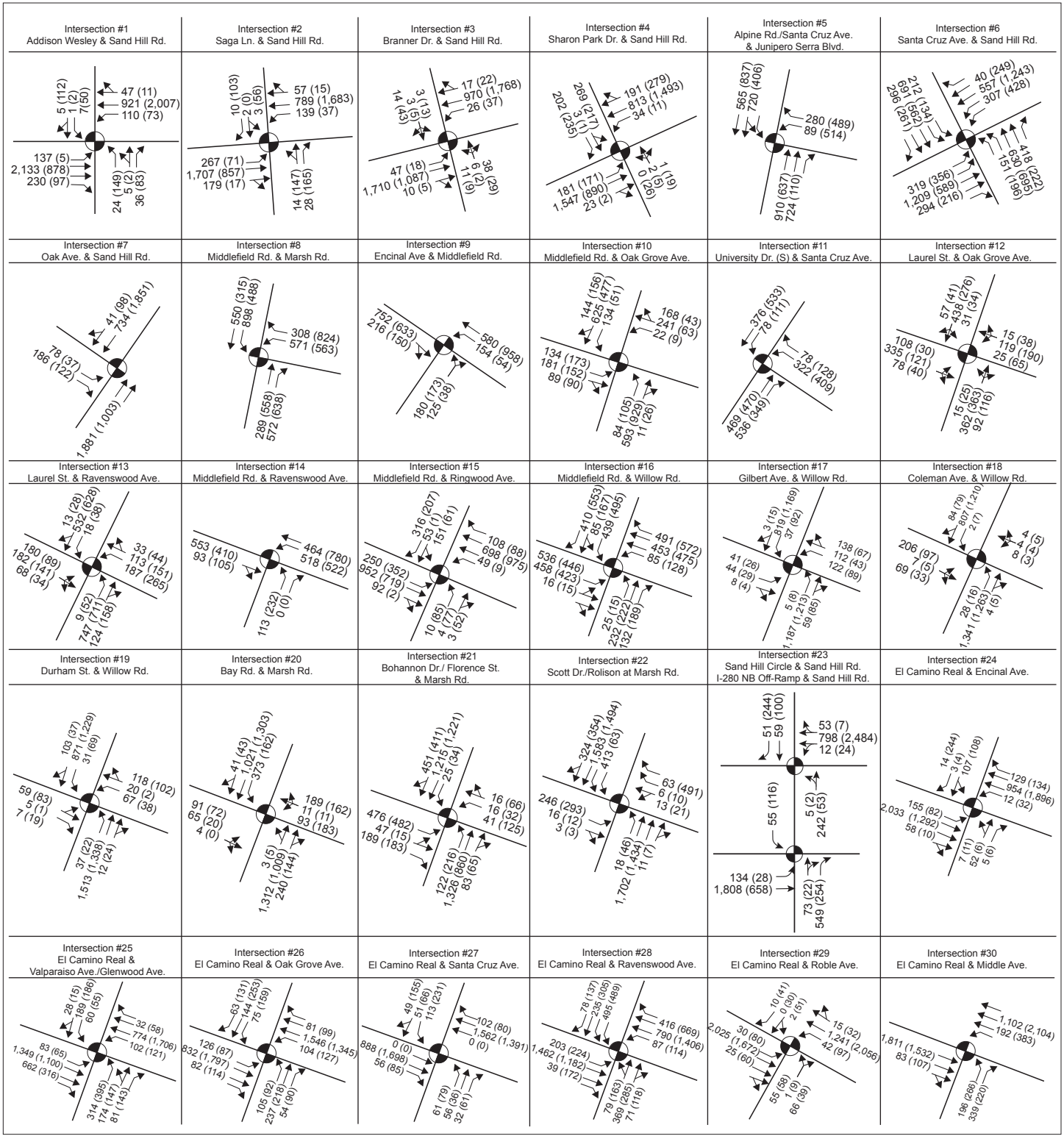
ii. Roadway Traffic Volumes

a) Arterial Streets

The following arterial segments (primary and minor) exceed 90 percent capacity with ADTs over 18,000 vehicles per day and under Near-Term 2014 conditions more than 100 trips would be added to each of these segments, which would exceed the City’s threshold of significance for arterial streets.

- “ Marsh Road from Bohannon Drive/Florence St to Scott Drive
- “ Marsh Road from Bay Road to Bohannon Drive/Florence Street
- “ Willow Road from Middlefield Road to Bay Road
- “ Willow Road from Gilbert Ave-Coleman Ave
- “ Willow Road from Coleman Ave-Durham St/Hospital Ave
- “ Willow Road from Durham St/Hospital Ave to Bay Road
- “ Middlefield Road from Ravenswood Avenue to Willow Road
- “ Ravenswood Avenue from El Camino Real to Alma Street
- “ Ravenswood Avenue from Alma Street to Laurel Street
- “ Ravenswood Avenue from Laurel Street to Middlefield Road
- “ Santa Cruz Avenue from Olive Street to University Drive
- “ Alpine Road/Santa Cruz Avenue from Junipero Serra Boulevard to City Limits
- “ Alpine Road/Santa Cruz Avenue from Sand Hill Road to Junipero Serra Boulevard

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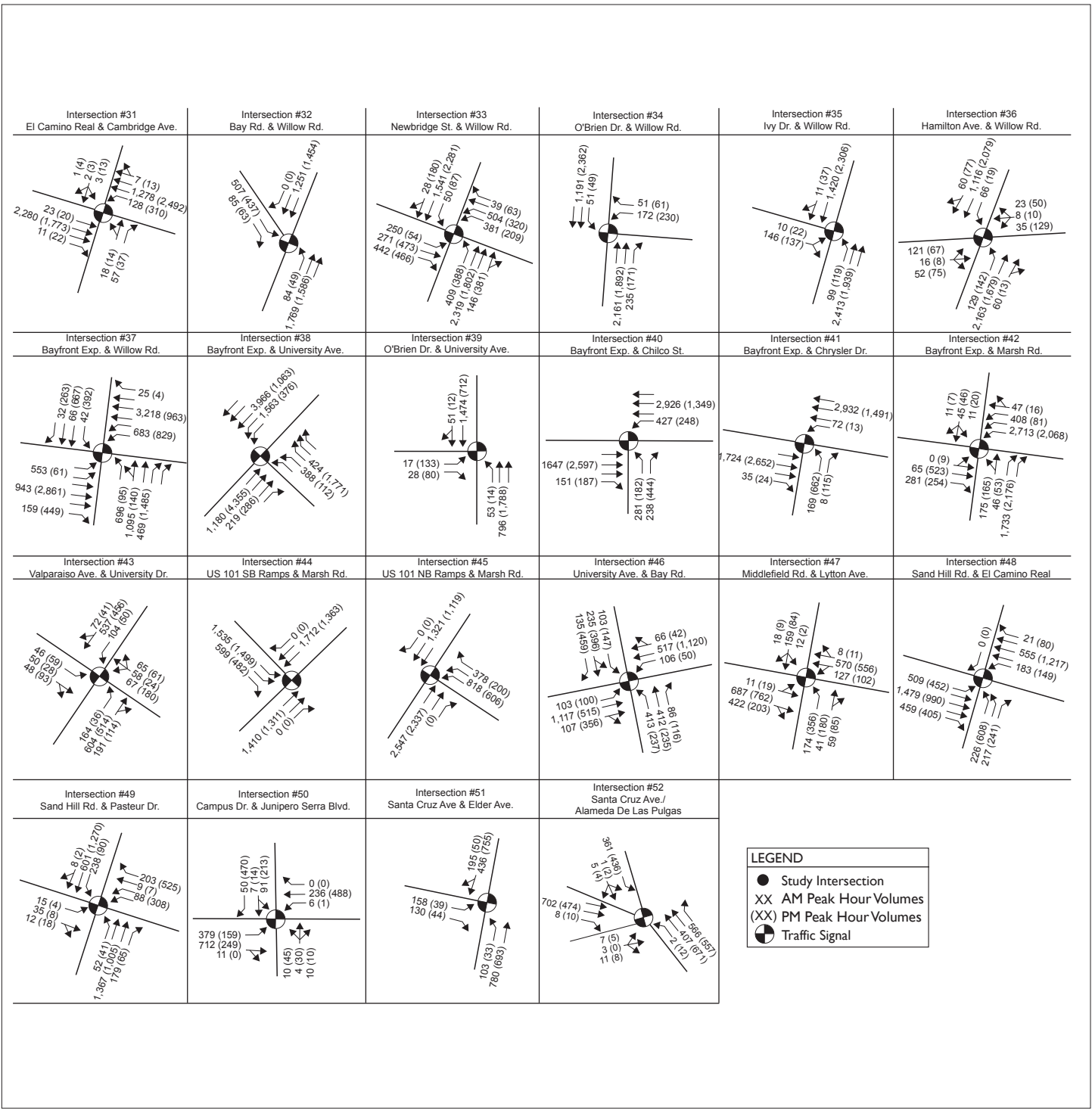
Source: TKM Transportation Consultants.

LEGEND

- Study Intersection
- XX AM Peak Hour Volumes
- (XX) PM Peak Hour Volumes
- ⊙ Traffic Signal

FIGURE 4.13-5A

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Source: TJKM Transportation Consultants.

FIGURE 4.13-5B

NEAR-TERM 2014 WITHOUT PLAN COMPONENTS PEAK HOUR VOLUMES AND
LANE CONFIGURATIONS

b) Collector Streets

Under Near-Term 2014 without Plan Components conditions more than a net total of 50 trips would be added to the following collector streets that are currently at 90 percent capacity with ADTs over 9,000 vehicles per day:

- “ University Drive from Menlo Avenue to Santa Cruz Avenue
- “ Oak Grove Avenue from University Drive to El Camino Real
- “ Oak Grove Avenue from El Camino Real to Laurel Street

c) Local Streets

Under Near-Term 2014 without Plan Components conditions future trips more than a net total of 25 trips would be added to the following local streets that are currently at 90 percent capacity with ADTs over 1,350 vehicles per day:

- “ Linfield Drive from Middlefield Road to Laurel Street
- “ Oak Avenue from Sand Hill Road to Olive Street

iii. Freeway Traffic Volumes

The freeway segments would continue to operate the same as under the existing 2012 conditions as follows:

- “ US 101 currently operate at LOS F
- “ SR 84 segment between Marsh Road and Willow operates at LOS B
- “ SR 84 segment between Willow Road and University Avenue operates at LOS F
- “ I-280 segments operate at LOS E

All the study freeway segments would continue to meet the CMP level of service standards except for the SR 84 segment between Willow Road and University Avenue, which would remain at LOS F.

The Near-Term 2014 without Plan Components conditions for roadway and freeway segments are identified and compared to Near-Term 2014 plus Plan Components conditions in Table 4.13-8 and 4.13-9, respectively. See Section F, Impacts Discussion, below.

b. 2035 Without Plan Components Conditions

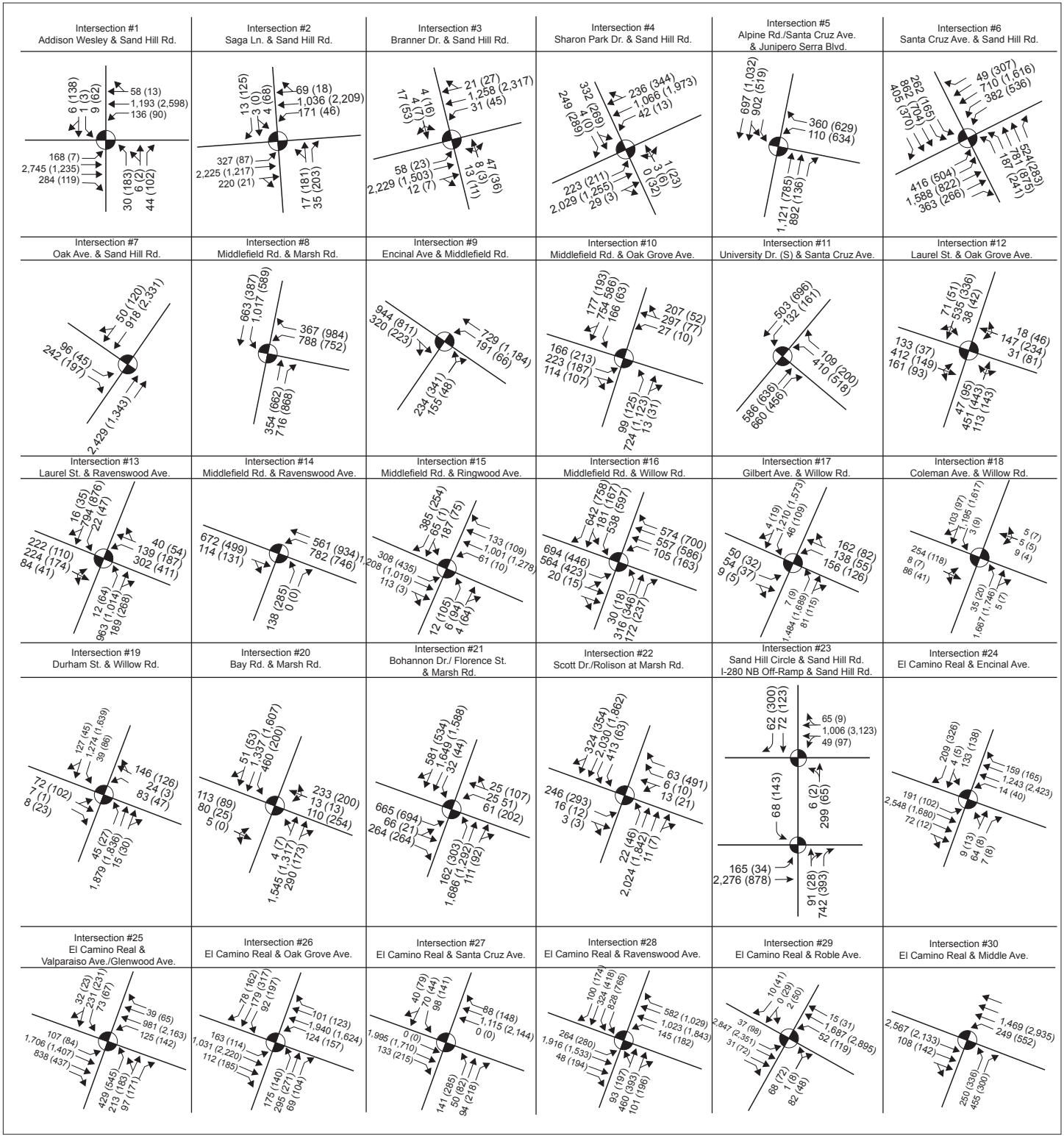
Figures 4.13-6a and 4.13-6b illustrates the peak hour turning movement volumes at the study intersections, as well as lane geometry and traffic controls under 2035 without Plan Components conditions. Anticipated traffic controls and lane geometries for the study intersections are also included in the figure. Detailed level of service calculations are contained in Appendix F of the Traffic Study (see Appendix F of this EA).

i. Intersection Levels of Service

Under 2035 without Plan Components conditions, 29 of the EA Study intersections are anticipated to operate at unacceptable levels as described below:

- Addison Wesley and Sand Hill Road operates at LOS E during AM peak hour.
- Sharon Park Drive and Sand Hill Road operates at LOS E during PM peak hour.
- Alpine Road/Santa Cruz Avenue and Junipero Serra Boulevard operates at LOS F during AM peak hour and operates at LOS E during PM peak hour.
- Santa Cruz Avenue and Sand Hill Road operates at LOS E during both AM and PM peak hours.
- Middlefield Road and Marsh Road (Atherton) operates at LOS F during both AM and PM peak hours.
- Middlefield Road and Ravenswood Avenue operates at LOS E during PM peak hour.
- Middlefield Road and Willow Road operates at LOS F during both AM and PM peak hours.
- Gilbert Avenue and Willow Road operates at LOS E during PM peak hour.
- Coleman Avenue and Willow Road operates at LOS F during both AM and PM peak hour.
- Durham Street and Willow Road operates at LOS E during PM peak hour.
- Bay Road and Marsh Road operates at LOS E during AM peak hour.
- Bohannon Drive/Florence Street and Marsh Road operates at LOS E during AM peak hour and operates at LOS F during PM peak hour.
- Scott Drive/Rolison Road and Marsh Road operates at LOS E during AM peak hour and LOS F during PM peak hour.
- Sand Hill Circle and Sand Hill Road (Caltrans) operates at LOS F during PM peak hour.
- El Camino Real and Valparaiso Avenue/Glenwood Avenue (Caltrans) operates at LOS E during PM peak hour.

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Source: TKM Transportation Consultants.

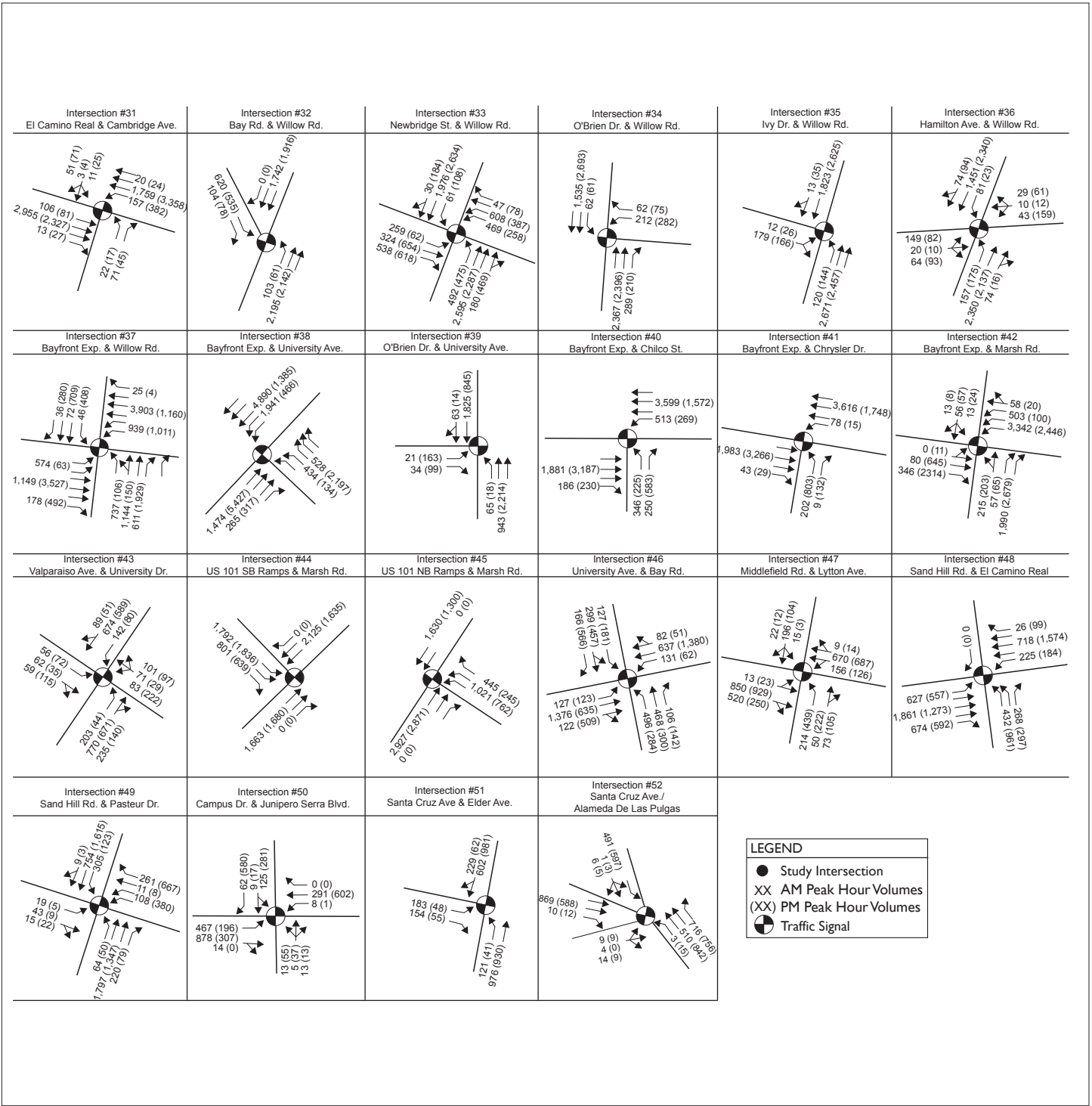
LEGEND

- Study Intersection
- XX AM Peak Hour Volumes
- (XX) PM Peak Hour Volumes
- ⊙ Traffic Signal

FIGURE 4.13-6A

**2035 WITHOUT PLAN COMPONENTS PEAK HOUR VOLUMES AND
LANE CONFIGURATIONS**

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Source: TJKM Transportation Consultants.

FIGURE 4.13-6B

- “ El Camino Real and Ravenswood Avenue/Menlo Avenue (Caltrans) operates at LOS F during both AM and PM peak hours.
- “ El Camino Real and Middle Avenue (Caltrans) operates at LOS F during PM peak hour.
- “ Bay Road and Willow Road (Caltrans) operates at LOS E during AM peak hour.
- “ Newbridge Street and Willow Road (Caltrans) operates at LOS F during both AM and PM peak hours.
- “ Hamilton Avenue and Willow Road (Caltrans) operates at LOS E during AM peak hour.
- “ Bayfront Expressway and Willow Road (Caltrans) operates at LOS F during both AM and PM peak hours.
- “ Bayfront Expressway and University Avenue (Caltrans) operates at LOS F during both AM and PM peak hours.
- “ Bayfront Expressway and Chilco Street (Caltrans) operates at LOS F during PM peak hour.
- “ Bayfront Expressway and Chrysler Drive (Caltrans) operates at LOS F during PM peak hour.
- “ Bayfront Expressway and Marsh Road (Caltrans) operates at LOS F during both AM and PM peak hour.
- “ US 101 SB Ramps and Marsh Road (Caltrans) operates at LOS F during AM peak hour and LOS E during PM peak hour.
- “ US 101 NB Ramps and Marsh Road (Caltrans) operates at LOS F during AM peak hour and LOS E during PM peak hour.
- “ University Avenue and Bay Road (Caltrans) operates at LOS E during both AM and PM peak hours.
- “ Middlefield Road and Lytton Avenue (Palo Alto) operates at LOS E during both AM and PM peak hours.

The 2035 without Plan Components for the study intersections are identified and compared to 2035 plus Plan Components Table 4.13-10. See Section F, Impacts Discussion, below.

ii. Roadway Traffic Volumes

a) Arterial Streets

The following arterial segments (primary and minor) exceed 90 percent capacity with ADTs over 18,000 vehicles per day and under 2035 without Plan Components conditions more than 100 trips would be added to each of these segments; therefore, City's threshold of significance for arterial streets would be exceeded.

- Marsh Road from Bohannon Drive/Florence Street to Scott Drive (primary arterial)
- Marsh Road from Bay Road to Bohannon Drive/Florence Street
- Willow Road from Middlefield Road to Gilbert Avenue
- Willow Road from Gilbert Avenue to Coleman Avenue
- Willow Road from Coleman Avenue to Durham Street/Hospital Avenue
- Willow Road from Durham Street/Hospital Ave to Bay Road
- Middlefield Road from Ravenswood Avenue to Willow Road
- Ravenswood Avenue from El Camino Real to Alma Street
- Ravenswood Avenue from Alma Street to Laurel Street
- Ravenswood Avenue from Laurel Street to Middlefield Road
- Alpine Road/Santa Cruz Avenue from Junipero Serra Boulevard to City Limits
- Alpine Road/Santa Cruz Avenue from Sand Hill Road to Serra Boulevard

Future trips would exceed the City's threshold by adding more than 12.5 percent additional trips or resulting in an ADT that would exceed 18,000 vehicles per day for the minor arterial segments which exceed 50 percent capacity with ADTs over 10,000 vehicles per day at the following segments:

- Valparaiso Ave/Glenwood Ave from University Drive to El Camino Real
- Santa Cruz Ave from Avy Avenue/Orange Ave to Olive Street
- Santa Cruz Ave from Olive Street to University Drive

b) Collector Streets

More than a net total of 50 trips would be added to the following collector streets that are currently at 90 percent capacity with ADTs over 9,000 vehicles per day:

- “ University Drive from Menlo Avenue to Santa Cruz Avenue
- “ Oak Grove Avenue from University Drive to El Camino Real
- “ Oak Grove Avenue from El Camino Real to Laurel Street

Future trips would exceed the City’s threshold by adding more than 12.5 percent additional trips or resulting in an ADT that would exceed 9,000 vehicles per day for the collector streets which exceed 50 percent capacity with ADTs over 5,000 vehicles per day.

- “ Haven Avenue from City Limits to Bayfront Expressway/Marsh Road
- “ University Drive from Middle Avenue to Menlo Avenue
- “ Valparaiso Ave/Glenwood Ave from El Camino Real to Laurel Street
- “ Oak Grove Avenue from Laurel Street to Middlefield Road
- “ Middle Avenue from Olive Street to University Drive
- “ Middle Avenue from University Drive to El Camino Real

Future trips would exceed the City’s threshold by adding more than 25 percent additional trips for the collector streets with ADTs of less than 5,000 vehicles per day at the following collector street segments:

- “ Hamilton Avenue from Chilco Street to Willow Road
- “ Willow Road from Laurel Street to Middlefield Rd
- “ Laurel Street from Glenwood Avenue to Oak Grove Avenue
- “ Laurel Street from Oak Grove Avenue to Ravenswood Avenue
- “ Laurel Street from Ravenswood Avenue to Willow Road

c) Local Streets

Future trips more than a net total of 25 trips would be added to the following local streets that are currently at 90 percent capacity with ADTs over 1,350 vehicles per day:

- “ Linfield Drive from Middlefield Road to Laurel Street
- “ Oak Avenue from Sand Hill Road to Olive Street

iii. Freeway Traffic Volumes

The freeway segments would continue to operate the same as under the existing 2012 and Near-Term 2014 conditions as follows:

- US 101 currently operate at LOS F
- SR 84 segment between Marsh Road and Willow operates at LOS B
- SR 84 segment between Willow Road and University Avenue operates at LOS F
- I-280 segments operate at LOS E

All the study freeway segments would continue to meet the CMP level of service standards except for the SR 84 segment between Willow Road and University Avenue, which would remain at LOS F.

The 2035 without Plan Components conditions for roadway and freeway segments are identified and compared to 2035 plus Plan Components conditions in Table 4.13-11 and 4.13-12, respectively. See Section F, Impacts Discussion, below.

3. Project Trip Generation, Distribution and Assignment

a. Plan Components Trip Generation

Table 4.13-5 summarizes the potential future residential development under the Plan Components. Also shown in Table 4.13-5, the traffic generated from the Plan Components was calculated based on ITE Trip Generation rates.

b. Plan Components Trip Distribution and Assignment

Trip distribution is a process that determines in what proportion vehicles would travel between a particular site and various destinations outside a study area. The process of trip assignment determines the various routes that vehicles would take from a site to each destination using the calculated trip distribution.

The City of Menlo Park has developed the origins and destinations of Menlo Park residential trips for four subareas within the City, based on the reported household travel diary and interview survey conducted in 1999. Table 4.13-6 shows the percentages of trips for each neighborhood for residential, employment and commercial trips. For the Plan Components, traffic generated by the housing planned for under the Plan Components was assigned to the roadway network based on different distribution patterns depending on the analysis subarea.

TABLE 4.13-5 TRIP GENERATION ESTIMATES

No.	Site Name	Net Potential Dwelling	Daily Trips ^a	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
1	I-280 and Sand Hill Road (Banana Site)	52	346	5	21	27	21	11	32
2	Hewlett Foundation	98	652	10	40	50	39	21	61
3	Corpus Christi	30	200	3	12	15	12	7	19
4	401-445 Burgess Drive	16	106	2	7	8	6	3	10
5	8 Homewood Place	25	166	3	10	13	10	5	16
6	St. Patrick's Seminary	25	166	3	10	13	10	5	16
7	125-135 Willow Road	10	67	1	4	5	4	2	6
8	555 Willow Road	8	53	1	3	4	3	2	5
9	Veterans Affairs Clinic	60	399	6	24	31	24	13	37
10	MidPen's Gateway Apts	42	279	4	17	21	17	9	26
11	MidPen's Gateway Apts	36	239	4	15	18	15	8	22
12	Hamilton Avenue East	216	1,436	22	88	110	87	47	134
13	Main Post Office	76	502	8	31	39	30	16	47
14	Haven Avenue	464	3,086	47	189	237	187	101	288
	Downtown Infill Units	118	785	12	48	60	48	26	73
	Second Units ^b	40	266	4	16	20	16	9	25
	Total	1,316	8,748	134	537	671	530	285	816

^a ITE Land Use Code 220 (Apartment) is used for all project sites

^v Second Units have been distributed throughout the City.

Source: Institute of Transportation Engineers (ITE), *Trip Generation, 8th Edition*, 2008. TJKM Transportation Consultants, March 2013.

TABLE 4.13-6 TRIP DISTRIBUTION PATTERN

Gateway	Residential				Employment				Commercial			
	SH	WM	w/o 101	e/o 101	SH	WM	w/o 101	e/o 101	SH	WM	w/o 101	e/o 101
1. I-280 North	10%	5%	2%	-	20%	12%	4%	-	13%	7%	2%	-
2. I-280 South	18	9	-	-	33	16	-	-	6	3	-	-
3. Sand Hill West	1	1	1	1	1	1	1	1	1	1	1	1
4. SR 84 East	2	2	2	2	20	20	20	20	1	1	1	1
5. US 101 South	-	9	18	26	-	17	33	37	-	3	6	13
6. US 101 North	-	2	5	7	-	4	12	10	-	2	7	7
7. Alameda North	13	6	2	-	7	4	-	-	6	4	-	-
8. El Camino North	-	10	5	4	-	7	5	3	-	6	5	2
9. Alpine South	-	-	-	-	-	-	-	-	-	-	-	-
10. Junipero South	8	5	-	-	4	3	-	-	7	4	-	-
11. Sand Hill East	14	3	-	-	7	1	-	-	15	3	-	-
12. Middlefield South	-	-	19	12	-	-	10	5	-	-	19	10
14. El Camino South	1	14	3	1	-	7	1	1	-	15	3	1
15. Middlefield North	-	-	9	13	-	-	6	14	-	-	5	10
16. Local Sharon Hts	10	5	2	-	2	1	-	-	15	8	3	-
17. Local Downtown	20	26	25	5	5	6	6	1	31	38	38	8
18. Local Willows	3	3	7	3	1	1	2	1	5	5	10	5
19. Local Belle Haven	-	-	-	26	-	-	-	7	-	-	-	42
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Notes: SH = Sharon Heights Local (Sharon Park Drive/Shopping Center Area)
 WM = West Menlo/Downtown Local (Downtown area bounded by University Drive, El Camino Real, Menlo Avenue, Roble Avenue)
 w/o 101 = West of US 101 Local (Willows area east of Willow Road near Gilbert Avenue)
 e/o 101 = East of US 101 Local (Belle Haven area near Newbridge Street and Chilco Street)
 Source: Adoption of City of Menlo Park Circulation System Assessment Update, 2004.

E. Standards of Significance

The City of Menlo Park, the City of Palo Alto, the Town of Atherton, the County of San Mateo, and the County of Santa Clara each has traffic impact guidelines and standards of significance that apply to the EA Study Area. The standard of significance criteria from these agencies was previously described in Section C.3 and C.6 above. The transportation items of the CEQA checklist are addressed through these local, regional, and state guidelines. Therefore, the Plan Components would have a significant impact with regard to transportation and traffic if they would:

1. Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit.
2. Conflict with an applicable congestion management program, including but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways.
3. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.
4. Substantially increase hazards due to a design feature (e.g. sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment).
5. Result in inadequate emergency access.
6. Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

F. Impact Discussion

This section presents the potentially significant impacts as a result of implementation of the Plan Components, and the mitigation measures that would reduce the future effects of the planned for development. For a discussion of impacts relating to increased traffic noise associated with increased traffic volumes, see Chapter 4.10, Noise, of this EA.

1. **Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation**

including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit.

a. Near-Term 2014 Plus Plan Components Conditions

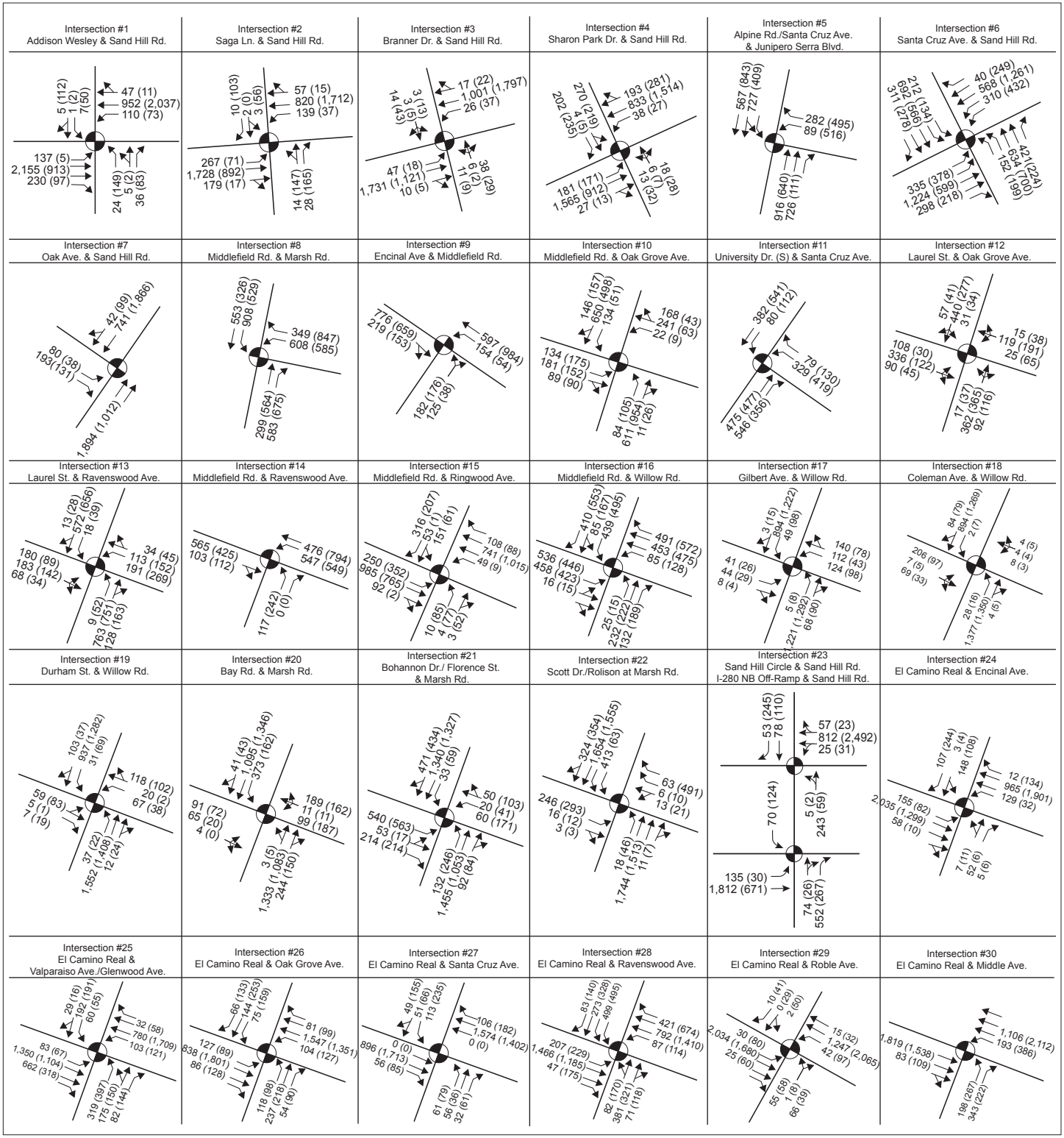
i. *Intersection Level of Service Analysis*

Figures 4.13-7a and 4.13-7b illustrate intersection peak hour turning movement traffic volumes under Near-Term 2014 plus Plan Components conditions. Anticipated traffic controls and lane geometries for the 52 study intersections are also included in this figure. Table 4.13-7 shows the corresponding intersection service levels. Detailed level of service calculations are contained in Appendix E of the Traffic Study (see Appendix F of this EA).

Under Near-Term 2014 plus Plan Components conditions, all study intersections operate within acceptable standards, with the exception of the intersections listed below:

- “ Alpine Road/Santa Cruz Avenue and Junipero Serra Boulevard operates at LOS E during AM peak hour.
- “ Middlefield Road and Marsh Road (Atherton) operates at LOS E during AM peak hour.
- “ Middlefield Road and Willow Road operates at LOS E during AM peak hour and operates at LOS F during PM peak hour.
- “ Scott Drive/Rolison Road and Marsh Road operates at LOS E during PM peak hour.
- “ Newbridge Street and Willow Road (Caltrans) operates at LOS F during both AM and P.M peak hours.
- “ Bayfront Expressway and Willow Road (Caltrans) operates at LOS F during both AM and P.M peak hours.
- “ Bayfront Expressway and University Avenue (Caltrans) operates at LOS F during PM peak hour.
- “ Bayfront Expressway and Marsh Road (Caltrans) operates at LOS F during both AM and PM peak hour.
- “ Bohannon Drive/Florence Street and Marsh Road operates at LOS E during PM peak hour.
- “ 101 NB Ramps and Marsh Road (Caltrans) operates at LOS E during AM peak hour.

**CITY OF MENLO PARK
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Source: TKM Transportation Consultants.

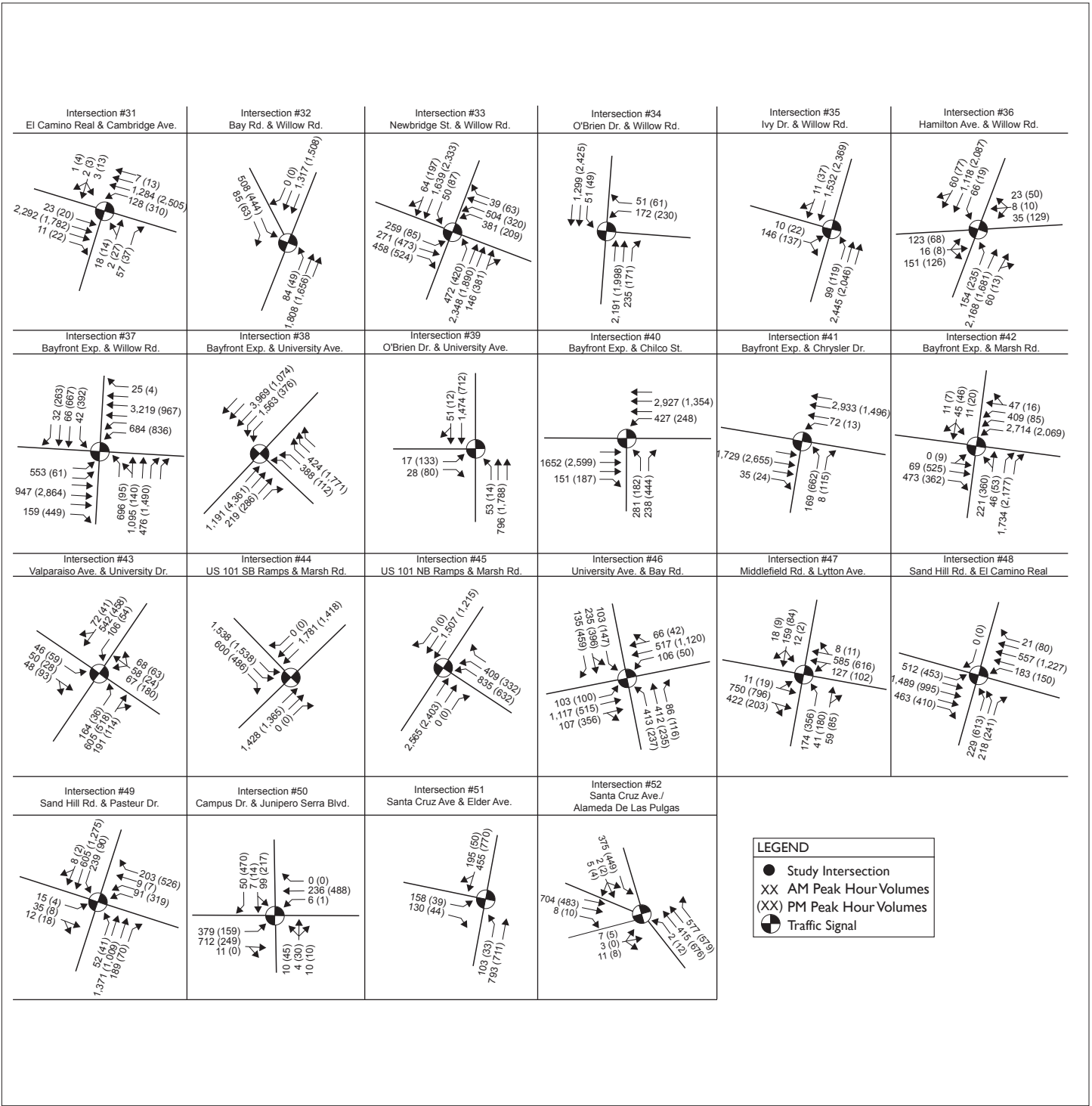
LEGEND

- Study Intersection
- XX AM Peak Hour Volumes
- (XX) PM Peak Hour Volumes
- ⊙ Traffic Signal

FIGURE 4.13-7A

**NEAR-TERM 2014 PLUS PLAN COMPONENTS PEAK HOUR VOLUMES AND
LANE CONFIGURATIONS**

CITY OF MENLO PARK
HOUSING ELEMENT UPDATE, GENERAL PLAN CONSISTENCY UPDATE, AND
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Source: TJKM Transportation Consultants.

FIGURE 4.13-7B

NEAR-TERM 2014 PLUS PLAN COMPONENTS PEAK HOUR VOLUMES AND
LANE CONFIGURATIONS

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TABLE 4.13-7 PEAK HOUR INTERSECTION LEVELS OF SERVICE – EXISTING AND NEAR-TERM 2014 CONDITIONS

No.	Intersection	Control	Jurisdiction	LOS Threshold	AM Peak Hour					PM Peak Hour						
					LOS	Delay (sec)	Near-Term Plus Project		Delay Diff (sec)	Sig. Impact?	LOS	Delay (sec)	Near-Term Plus Project		Delay Diff (sec)	Sig. Impact?
							LOS	Delay (sec)					LOS	Delay (sec)		
1	Addison Wesley and Sand Hill Rd.	Signal	Menlo Park	D	B	12.8	B	13.1	0.3	No	B	18.2	B	18.3	0.1	No
2	Saga Ln. and Sand Hill Rd.	Signal	Menlo Park	D	A	8.6	A	8.6	0.0	No	B	12.1	B	12.0	-0.1	No
3	Branner Dr. and Sand Hill Rd.	Signal	Menlo Park	D	A	4.5	A	4.5	0.0	No	A	5.5	A	5.5	0.0	No
4	Sharon Park Dr. and Sand Hill Rd.	Signal	Menlo Park	D	C	22.4	C	23.1	0.7	No	C	26.4	C	27.3	0.9	No
5	Alpine Rd./Santa Cruz Ave. and Junipero Serra Blvd.	Signal	Menlo Park	D	E	55.7	E	56.3	0.6	Yes	D	49.2	D	49.5	0.3	No
	WB Critical Approach on Junipero Serra Blvd.				F	96.6	F	97.6	1.0							
6	Santa Cruz Ave. and Sand Hill Rd.	Signal	Menlo Park	D	D	45.7	D	45.9	0.2	No	D	46.0	D	46.5	0.5	No
7	Oak Ave. and Sand Hill Rd.	Signal	Menlo Park	D	B	10.9	B	11.3	0.4	No	A	6.4	A	6.9	0.5	No
8	Middlefield Rd. and Marsh Rd.	Signal	Atherton	D	E	59.0	E	65.2	6.2	No	D	41.8	D	47.6	5.8	No
9	Encinal Ave. and Middlefield Rd.	Signal	Atherton	D	C	20.2	C	20.7	0.5	No	B	10.0	B	10.2	0.2	No
10	Middlefield Rd. and Oak Grove Ave.	Signal	Atherton	D	B	14.7	B	15.1	0.4	No	B	11.4	B	11.6	0.2	No
11	University Dr. (S) and Santa Cruz Ave.	Signal	Menlo Park	D	B	13.1	B	13.3	0.2	No	B	15.7	B	15.9	0.2	No

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No.	Intersection	Control	Jurisdiction	LOS Threshold	AM Peak Hour					PM Peak Hour						
					LOS	Delay (sec)	Near-Term Plus Project		Delay Diff (sec)	Sig. Impact?	LOS	Delay (sec)	Near-Term Plus Project		Delay Diff (sec)	Sig. Impact?
							LOS	Delay (sec)					LOS	Delay (sec)		
12	Laurel St. and Oak Grove Ave.	Signal	Menlo Park	C	B	15.2	B	15.5	0.3	No	B	11.7	B	11.8	0.1	No
13	Laurel St. and Ravenswood Ave.	Signal	Menlo Park	D	B	18.3	B	18.9	0.6	No	B	14.0	B	14.5	0.5	No
14	Middlefield Rd. and Ravenswood Ave.	Signal	Menlo Park	D	C	25.7	C	27.2	1.5	No	D	38.8	D	41.5	2.7	No
15	Middlefield Rd. and Ringwood Ave.	Signal	Menlo Park	D	C	27.4	C	27.2	-0.2	No	C	26.3	C	25.9	-0.4	No
16	Middlefield Rd. and Willow Rd.	Signal	Menlo Park	D	E	66.3	E	73.8	7.5	Yes	F	90.0	F	105.8	15.8	Yes
17	Gilbert Ave. and Willow Rd.	Signal	Menlo Park	D	B	19.3	C	21.0	1.7	No	B	12.2	B	15.5	3.3	No
18	Coleman Ave. and Willow Rd.	Signal	Menlo Park	D	C	33.3	D	36.3	3.0	No	B	13.5	B	16.4	2.9	No
19	Durham St. and Willow Rd.	Signal	Menlo Park	D	B	12.0	B	12.5	0.5	No	B	15.3	B	16.7	1.4	No
20	Bay Rd. and Marsh Rd.	Signal	Menlo Park	D	C	27.6	C	28.7	1.1	No	B	17.6	B	17.9	0.3	No
21	Bohannon Dr./ Florence St. and Marsh Rd.	Signal	Menlo Park	D	C	32.9	D	41.4	8.5	No	D	46.4	E	68.3	21.9	Yes
22	Scott Dr./Rolison Rd. and Marsh Rd.	Signal	Menlo Park	D	C	27.8	C	30.5	2.7	No	E	69.8	E	74.6	4.8	Yes
23	Sand Hill Circle and Sand Hill Rd.	Signal	Menlo Park	D	C	25.6	C	26.5	0.9	No	D	41.4	D	45.1	3.7	No

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TABLE 4.13-7 PEAK HOUR INTERSECTION LEVELS OF SERVICE – EXISTING AND NEAR-TERM 2014 CONDITIONS

No.	Intersection	Control	Jurisdiction	LOS Threshold	AM Peak Hour					PM Peak Hour						
					Near-Term		Near-Term Plus Project		Delay Diff (sec)	Sig. Impact?	Near-Term		Near-Term Plus Project		Delay Diff (sec)	Sig. Impact?
					LOS	Delay (sec)	LOS	Delay (sec)			LOS	Delay (sec)	LOS	Delay (sec)		
	I-280 NB Off-Ramp and Sand Hill Rd.	Signal	Caltrans	D	C	24.0	C	26.3	2.3	No	C	21.9	C	22.7	0.8	No
24	El Camino Real and Encinal Ave.	Signal	Caltrans	D	B	15.8	B	15.8	0.0	No	B	19.1	B	19.0	-0.1	No
25	El Camino Real and Valparaiso Ave./ Glenwood Ave.	Signal	Caltrans	D	C	34.8	D	35.2	0.4	No	C	34.9	D	35.4	0.5	No
26	El Camino Real and Oak Grove Ave.	Signal	Caltrans	D	C	30.0	C	30.2	0.2	No	C	33.0	C	33.2	0.2	No
27	El Camino Real and Santa Cruz Ave.	Signal	Caltrans	D	B	13.3	B	13.2	-0.1	No	B	19.8	B	20.0	0.2	No
28	El Camino Real and Ravenswood Ave./ Menlo Ave.	Signal	Caltrans	D	D	42.9	D	44.0	1.1	No	D	49.6	D	53.1	3.5	No
29	El Camino Real and Roble Ave.	Signal	Caltrans	D	B	11.9	B	11.9	0.0	No	B	17.2	B	17.2	0.0	No
30	El Camino Real and Middle Ave.	Signal	Caltrans	D	C	29.6	C	29.9	0.3	No	D	48.9	D	49.5	0.6	No
31	El Camino Real and Cambridge Ave.	Signal	Caltrans	D	B	11.4	B	11.4	0.0	No	B	15.3	B	15.3	0.0	No
32	Bay Rd. and Willow Rd.	Signal	Caltrans	D	C	27.0	C	27.7	0.7	No	C	22.7	C	23.4	0.7	No
33	Newbridge St. and Willow Rd.	Signal	Caltrans	D	F	144.8	F	162.0	17.2	Yes	F	192.7	F	211.7	19.0	Yes

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No.	Intersection	Control	Jurisdiction	LOS Threshold	AM Peak Hour					PM Peak Hour						
					Near-Term		Near-Term Plus Project		Delay Diff (sec)	Sig. Impact?	Near-Term		Near-Term Plus Project		Delay Diff (sec)	Sig. Impact?
					LOS	Delay (sec)	LOS	Delay (sec)			LOS	Delay (sec)	LOS	Delay (sec)		
	SB Critical Local Approach on Newbridge St.				F	240.2	F	281.7	41.5		F	321.1	F	356.4	35.3	
34	O'Brien Dr. and Willow Rd.	Signal	Caltrans	D	B	13.5	B	13.6	0.1	No	B	17.4	B	18.2	0.8	No
35	Ivy Dr. and Willow Rd.	Signal	Caltrans	D	B	14.4	B	14.7	0.3	No	B	18.5	B	19.5	1.0	No
36	Hamilton Ave. and Willow Rd.	Signal	Caltrans	D	C	24.0	C	34.4	10.4	No	C	29.4	D	45.9	16.5	No
	Bayfront Exp. and Willow Rd.			D	F	111.3	F	111.3	0.0	No	F	136.6	F	137.2	0.6	
37	WB Critical Approach on Willow Rd.	Signal	Caltrans								F	199.5	F	200.3	.84	Yes
	SB Critical Approach on Bayfront Exp.										F	166.0	F	167.0	1.0	
38	Bayfront Exp. and University Ave.	Signal	Caltrans	D	C	32.4	C	32.5	0.1	No	F	172.1	F	172.4	0.3	No
39	O'Brien Dr. and University Ave.	Signal	Caltrans	D	A	5.4	A	5.4	0.0	No	A	9.5	A	9.5	0.0	No
40	Bayfront Exp. and Chilco St.	Signal	Caltrans	D	C	26.0	C	26.1	0.1	No	D	44.4	D	44.5	0.1	No
41	Bayfront Exp. and Chrysler Dr.	Signal	Caltrans	D	B	10.1	B	10.1	0.0	No	D	43.2	D	43.3	0.1	No
42	Bayfront Exp. and Marsh Rd.	Signal	Caltrans	D	D	38.7	F	86.8	48.1	Yes	F	81.1	F	105.3	24.2	Yes

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TABLE 4.13-7 PEAK HOUR INTERSECTION LEVELS OF SERVICE – EXISTING AND NEAR-TERM 2014 CONDITIONS

No.	Intersection	Control	Jurisdiction	LOS Threshold	AM Peak Hour					PM Peak Hour						
					Near-Term		Near-Term Plus Project		Delay Diff (sec)	Sig. Impact?	Near-Term		Near-Term Plus Project		Delay Diff (sec)	Sig. Impact?
					LOS	Delay (sec)	LOS	Delay (sec)			LOS	Delay (sec)	LOS	Delay (sec)		
43	Valparaiso Ave. and University Dr.	Signal	Menlo Park	D	B	13.2	B	13.3	0.1	No	B	15.8	B	15.9	0.1	No
44	US 101 SB Ramps and Marsh Rd.	Signal	Caltrans	D	D	40.2	D	44.5	4.3	No	C	26.1	C	27.8	1.7	No
45	US 101 NB Ramps and Marsh Rd.	Signal	Caltrans	D	D	44.1	E	57.5	13.4	Yes	C	21.4	C	30.0	8.6	No
46	University Ave. and Bay Rd.	Signal	Caltrans	D	D	37.1	D	37.1	0.0	No	D	39.9	D	39.9	0.0	No
47	Middlefield Rd. and Lytton Ave.	Signal	Palo Alto	D	D	39.4	D	40.7	1.3	No	D	39.8	D	41.6	1.8	No
48	Sand Hill Rd. and El Camino Real	Signal	Caltrans	D	C	21.2	C	21.1	-0.1	No	C	25.3	C	25.3	0.0	No
49	Sand Hill Rd. and Pasteur Dr.	Signal	Palo Alto	D	C	23.2	C	23.2	0.0	No	C	28.1	C	28.1	0.0	No
50	Campus Dr. and Junipero Serra Blvd.	Signal	Santa Clara Co.	D	B	17.2	B	17.6	0.4	No	C	34.3	C	34.3	0.0	No
51	Santa Cruz Ave. and Elder Ave.	Signal	Menlo Park	D	B	16.3	B	16.3	0.0	No	A	5.9	A	5.9	0.0	No
52	Santa Cruz Ave./ Alameda De Las Pulgas	Signal	San Mateo Co.	D	B	11.6	B	11.8	0.2	No	B	12.4	B	12.6	0.2	No

Note: **Bold** indicates unacceptable operational conditions based on applicable City/Caltrans standards, as well as potentially significant impacts.

^a LOS= Level of Service, Delay = Average control delay per vehicle

^b Delay / LOS are for overall intersection

Source: TJKM Transportation Consultants, March 2013.

ii. Roadway Traffic Volumes

a) Arterial Streets

The following arterial segments (primary and minor) exceed 90 percent capacity with ADTs over 18,000 vehicles per day and under Near-Term 2014 plus Plan Components conditions more than 100 trips would be added to each of these segments; therefore, City's threshold of significance for arterial streets would be exceeded. As shown in Table 4.13-8, the future development would result in *significant* impacts on the following arterial roadway segments:

- Marsh Road from Bohannon Drive/Florence St to Scott Drive
- Marsh Road from Bay Road to Bohannon Drive/Florence Street
- Willow Road from Middlefield Road to Bay Road
- Willow Road from Gilbert Ave-Coleman Ave
- Willow Road from Coleman Ave-Durham St/Hospital Ave
- Willow Road from Durham St/Hospital Ave to Bay Road
- Middlefield Road from Ravenswood Avenue to Willow Road
- Ravenswood Avenue from El Camino Real to Alma Street
- Ravenswood Avenue from Alma Street to Laurel Street
- Ravenswood Avenue from Laurel Street to Middlefield Road
- Santa Cruz Avenue from Avy Ave/Orange Avenue to Olive Street
- Santa Cruz Avenue from Olive Street to University Drive
- Alpine Road/Santa Cruz Avenue from Junipero Serra Boulevard to City Limits
- Alpine Road/Santa Cruz Avenue from Sand Hill Road to Serra Boulevard

b) Collector Streets

Under Near-Term 2014 without Plan Components conditions more than a net total of 50 trips would be added to the following collector streets that are currently at 90 percent capacity with ADTs over 9,000 vehicles per day:

- University Drive from Menlo Avenue to Santa Cruz Avenue
- Oak Grove Avenue from El Camino Real to Laurel Street

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TABLE 4.13-8 ROADWAY AVERAGE DAILY TRAFFIC VOLUMES – EXISTING AND NEAR-TERM 2014 CONDITIONS

Segment No.	Roadway	Segment	Classification	Existing ADT	Near-Term ADT	Near-Term Plus Project ADT	Future Trip ADT Contribution		Significant Impact
							Added Daily Volume	% of Near-Term	
1	Haven Ave	City Limits-Bayfront Expwy/Marsh Rd	Collector	5,751	5,873	7,512	1,639	27.9%	Yes
2-1	Marsh Rd	Bay Rd-Bohannon Dr/Florence St	Minor Arterial	27,013	33,251	34,534	1,284	3.9%	Yes
2-2		Bohannon Dr/Florence St-Scott Dr	Primary Arterial	32,768	39,414	41,033	1,619	4.1%	Yes
3	Hamilton Ave	Chilco St-Willow Rd	Collector	3,010	3,101	4,219	1,117	36.0%	Yes
4-1	Willow Rd	Laurel St-Middlefield Rd	Collector	5,181	6,181	6,245	64	1.0%	No
4-2		Middlefield Rd-Gilbert Ave	Minor Arterial	26,213	32,189	34,046	1,857	5.8%	Yes
4-3		Gilbert Ave-Coleman Ave	Minor Arterial	26,336	32,581	34,448	1,867	5.7%	Yes
4-4		Coleman Ave-Durham St/Hospital Ave	Minor Arterial	28,038	34,239	35,932	1,694	4.9%	Yes
4-5		Durham St/Hospital Ave-Bay Rd	Minor Arterial	32,148	38,225	39,722	1,496	3.9%	Yes
5	Middlefield Rd	Ravenswood Ave-Willow Rd	Minor Arterial	20,668	22,789	23,658	869	3.8%	Yes
6-1	Laurel St	Glenwood Ave-Oak Grove Ave	Collector	3,916	4,060	4,180	120	3.0%	No
6-2		Oak Grove Ave-Ravenswood Ave	Collector	4,404	4,497	4,507	10	0.2%	No
6-3		Ravenswood Ave-Willow Rd	Collector	4,917	6,231	6,293	62	1.0%	No
7-1	University Dr	Middle Ave-Menlo Ave	Collector	5,666	5,857	6,148	290	5.0%	No
7-2		Menlo Ave-Santa Cruz Ave	Collector	17,641	18,675	19,028	353	1.9%	Yes
7-3		Santa Cruz Ave-Oak Grove Ave	Collector	7,052	7,199	7,310	111	1.5%	No
7-4		Oak Grove Ave-Valparaiso Ave	Collector	5,376	5,499	5,560	61	1.1%	No
8-1	Valparaiso Ave/	University Dr-El Camino Real	Minor Arterial	13,238	14,119	14,243	124	0.9%	No
8-2	Glenwood Ave	El Camino Real-Laurel St	Collector	5,899	6,363	6,459	95	1.5%	No

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Segment No.	Roadway	Segment	Classification	Existing ADT	Near-Term ADT	Near-Term Plus Project ADT	Future Trip ADT Contribution		Significant Impact
							Added Daily Volume	% of Near-Term	
9-1		University Dr -El Camino Real	Collector	10,038	10,246	10,296	50	0.5%	No
9-2	Oak Grove Ave	El Camino Real-Laurel St	Collector	9,677	9,967	10,175	208	2.1%	Yes
9-3		Laurel St-Middlefield Rd	Collector	8,556	8,728	8,754	26	0.3%	No
10-1		El Camino Real-Alma St	Minor Arterial	24,076	26,451	27,189	738	2.8%	Yes
10-2	Ravenswood Ave	Alma St-Laurel St	Minor Arterial	19,912	22,044	22,695	651	3.0%	Yes
10-3		Laurel St-Middlefield Rd	Minor Arterial	17,977	18,742	19,332	590	3.1%	Yes
11-1		Alameda de las Pulgas- Avy Ave/Orange Ave	Minor Arterial	9,238	9,723	10,025	303	3.1%	No
11-2		Avy Ave/Orange Ave-Olive St	Minor Arterial	16,097	18,020	18,399	379	2.1%	Yes
11-3	Santa Cruz Ave	Olive St-University Dr	Minor Arterial	17,179	18,911	19,234	323	1.7%	Yes
11-4		University Dr-Crane St	Minor Arterial	8,895	9,858	10,004	146	1.5%	No
11-5		Crane St-El Camino Real	Minor Arterial	8,074	9,899	9,998	99	1.0%	No
12-1		Olive St-University Dr	Collector	7,222	7,583	7,796	212	2.8%	No
12-2	Middle Ave	University Dr-El Camino Real	Collector	7,519	7,716	7,787	71	0.9%	No
13-1	Alpine Rd/	Junipero Serra Blvd-City Limits	Minor Arterial	23,406	23,868	23,988	120	0.5%	Yes
13-2	Santa Cruz Ave	Sand Hill Rd-Junipero Serra Blvd	Minor Arterial	30,187	31,077	31,306	229	0.7%	Yes
14	Linfield Dr	Middlefield Rd - Laurel St	Local	1,583	1,615	1,756	141	8.7%	Yes
15	Oak Ave	Sand Hill Rd - Olive St	Local	2,518	2,615	2,759	143	5.5%	Yes

Notes: **Bold** indicates potentially significant impacts.
 Source: TJKM Transportation Consultants, March 2013.

Future trips would exceed the City's threshold by adding 12.5 percent additional trips or resulting in an ADT that would exceed 9,000 vehicles per day for the collector streets which exceed 50 percent capacity with ADTs greater than 5,000 vehicles per day at the following intersection:

- Haven Avenue from City Limits to Bayfront Expressway/Marsh Road

Future trips would exceed the City's threshold by adding more than 25 percent additional trips for the collector streets with ADTs of less than 5,000 vehicles per day at the following collector street segment:

- Hamilton Avenue from Chilco Street to Willow Road

c) Local Streets

Under Near-Term 2014 without Plan Components conditions future trips more than a net total of 25 trips would be added to the following local streets that are currently at 90 percent capacity with ADTs over 1,350 vehicles per day:

- Linfield Drive from Middlefield Road to Laurel Street
- Oak Avenue from Sand Hill Road to Olive Street

a) Freeway Peak Hour Volumes

The six selected freeway segments are all considered as Routes of Regional Significance by the San Mateo County CMP. As shown in Table 4.13-9, all study segments currently operate at their CMP level of service standards or worse, with the exception of SR 84 between Marsh Road and Willow Road. The results shown in Table 4.13-9 also show that the addition of the traffic volumes generated by the future development permitted under the Plan Components would result in *significant* impacts on US 101 South of Marsh Road.

Within these intersections, the intersections of Bohannon Drive/Florence Street and Marsh Road and US 101 NB Ramps and Marsh Road operate at acceptable level of service prior to the addition of the future development under the Plan Components. The intersection of Bayfront Expressway and Marsh Road operates at acceptable level of service during the AM peak hour prior to the addition of the future housing under the Plan Components.

As shown in Table 4.13-9, eight intersections listed below would have *significant* impacts with the addition of trips from future residential development under Near-Term 2014 plus Plan Components conditions during AM or PM peak hour.

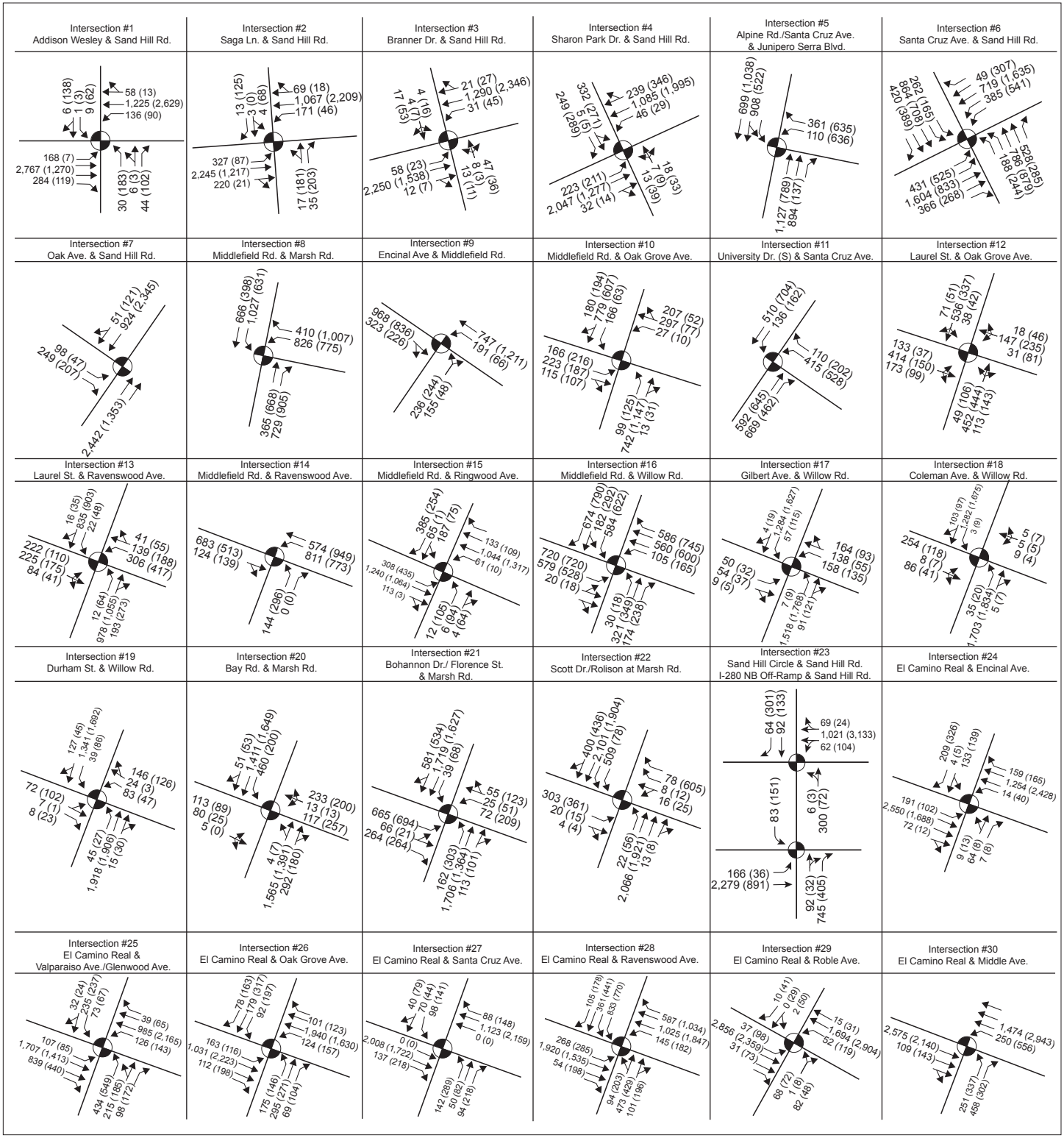
- “ Alpine Road/Santa Cruz Avenue and Junipero Serra Boulevard during AM peak hour delay increases by more than 0.8 seconds.
- “ Middlefield Road and Willow Road during both AM and PM peak hour delay increases by more than 0.8 seconds.
- “ Bohannon Drive/Florence Street and Marsh Road during PM peak hour level of service degrades from LOS D to LOS E.
- “ Scott Drive/Rolison Road and Marsh Road during PM peak hour delay increases by more than 0.8 seconds.
- “ Newbridge Street and Willow Road (Caltrans) during both AM and PM peak hours delay increases by more than 0.8 seconds.
- “ Bayfront Expressway and Willow Road (Caltrans) during PM peak hour delay increases by more than 0.8 seconds.
- “ Bayfront Expressway and Marsh Road (Caltrans) during both AM and PM peak hour level of service degrades from LOS D to LOS F during AM Peak hour and delay increases by 23 seconds for PM peak hour.
- “ US 101 NB Ramps and Marsh Road (Caltrans) during AM peak hour level of service degrades from LOS D to LOS E.

b. 2035 Plus Plan Components Conditions

i. *Intersection Levels of Service Analysis*

Figures 4.13-8a and 4.13-8b illustrate the peak hour turning movement volumes at the study intersections, as well as lane geometry and traffic controls under 2035 plus Plan Components conditions. Anticipated traffic controls and lane geometries for the study intersections are also included in this figure. The roadway segment and freeway segment ADTs for 2035 plus Plan Components conditions were estimated based on the existing ADTs and the traffic volumes for the intersections along the segments.

CITY OF MENLO PARK
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Source: TKM Transportation Consultants.

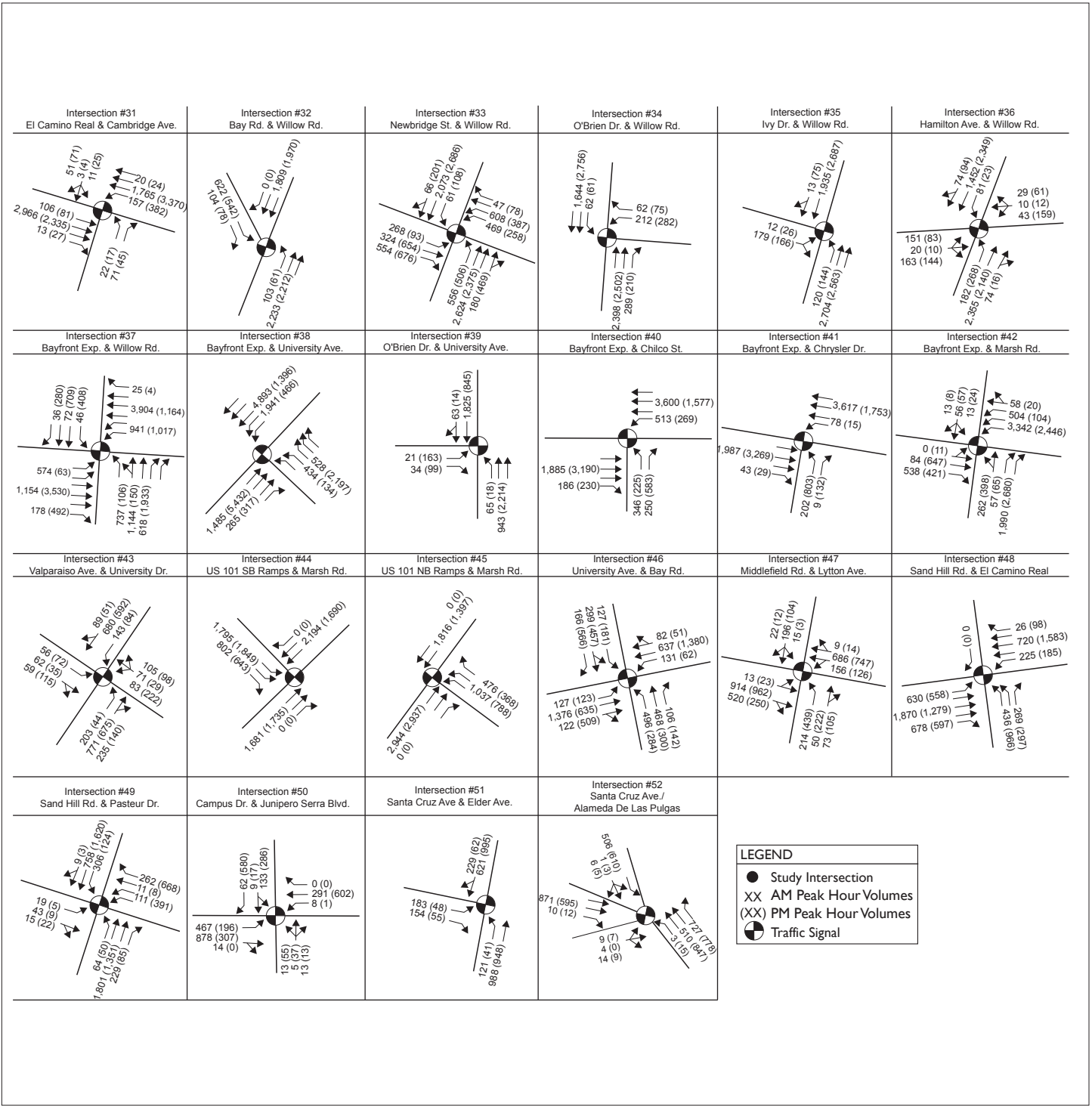
LEGEND

- Study Intersection
- XX AM Peak Hour Volumes
- (XX) PM Peak Hour Volumes
- ⊙ Traffic Signal

FIGURE 4.13-8A

2035 PLUS PLAN COMPONENTS PEAK HOUR VOLUMES AND
LANE CONFIGURATIONS

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Source: TJKM Transportation Consultants.

FIGURE 4.13-8B

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 AND ZONING ORDINANCE AMENDMENTS ENVIRONMENTAL ASSESSMENT
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TABLE 4.13-9 FREEWAY LEVELS OF SERVICE – EXISTING AND NEAR-TERM 2014 CONDITIONS

Segment No.	Roadway	Segment	Existing LOS ^a	CMP LOS Standards	Capacity ^b	Project Trips	% of Capacity	Significant Impact?
1	US 101	N/O Marsh Rd	F	F	9,200	20	0.21%	No
2	US 101	S/O Marsh Rd	F	F	9,200	134	1.46%	Yes
3	US 101	S/O Willow Rd	F	F	9,200	88	0.96%	No
4-1	SR 84	Marsh Rd – Willow Rd	B	D	4,500	4	0.09%	No
4-2	SR 84	Willow Rd – University Ave	F	E	4,500	10	0.22%	No
5	I-280	N/O Sand Hill	E	D	9,200	9	0.10%	No
6	I-280	S/O Sand Hill	E	D	9,200	12	0.13%	No

Note: **Bold** indicates unacceptable operational conditions based on applicable City/Caltrans standards, as well as potentially significant impacts.

^a Source: 2011 CMP Monitoring Report. Based on average speed.

^b Capacity is based on number of lanes and 2,200 vehicles per hour per lane (vphpl) for four lane segments and 2,300 vphpl for six lane and more segments for US 101 and I-280. Capacity of 1,500 vphpl is used for SR 84 segments.

Source: TJKM Transportation Consultants, March 2013.

The level of service was evaluated for the study intersections under 2035 plus Plan Components conditions. Table 4.13-10 summarizes the results. Detailed level of service calculations are contained in Appendix G of the Traffic Report (see Appendix F of this EA).

As previously discussed, under 2035 without Plan Components conditions all study intersections operate within acceptable standards, with the exception of 29 intersections. With the addition of trips generated by future development under the Plan Components, no additional intersections operate at unacceptable levels of service. However, the levels of service for the five intersections listed below would be degraded:

- “ Laurel Street & Ravenswood Avenue operates at LOS E during AM peak hour
- “ Middlefield Road and Ravenswood Avenue operates at LOS E during AM peak hour.
- “ Gilbert Avenue and Willow Road operates at LOS E during AM peak hour and LOS F during PM peak hour.
- “ Bohannon Drive/Florence Street and Marsh Road operates at LOS F during AM peak hour.
- “ Hamilton Avenue and Willow Road (Caltrans) operates at LOS E during AM peak hour and LOS F during PM peak hour.
- “ US 101 NB Ramps and Marsh Road (Caltrans) operates at LOS F during PM peak hour.

As shown in Table 4.13-11, 25 intersections have *significant* impacts with the addition of trips from future development to the 2035 conditions during the AM or PM peak hours to the following intersections:

- “ Addison Wesley and Sand Hill Road during AM peak hour delay increases by more than 0.8 seconds.
- “ Sharon Park Drive and Sand Hill Road during PM peak hour delay increases by more than 0.8 seconds.
- “ Alpine Road/Santa Cruz Avenue and Junipero Serra Boulevard during both AM and PM peak hours delay increases by more than 0.8 seconds.
- “ Santa Cruz Avenue and Sand Hill Road during both AM and PM peak hours delay increases by more than 0.8 seconds.
- “ Middlefield Road and Marsh Road (Atherton) during both AM and PM peak hours delay increases by 4 seconds at LOS F.
- “ Laurel Street and Ravenswood Avenue during AM peak hour the LOS degrades from LOS D to LOS E.

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TABLE 4.13-10 PEAK HOUR INTERSECTION LEVELS OF SERVICE – EXISTING AND 2035 CONDITIONS

Int. No.	Intersection	Control	Jurisdiction	LOS Threshold	AM Peak Hour					PM Peak Hour						
					Cumulative		2035 Plus Project		Delay Diff (sec)	Sig. Impact?	Cumulative		2035 Plus Project		Delay Diff (sec)	Sig. Impact?
					LOS	Delay (sec)	LOS	Delay (sec)			LOS	Delay (sec)	LOS	Delay (sec)		
1	Addison Wesley and Sand Hill Rd.	Signal	Menlo Park	D	E	57.2	E	59.4	2.2	Yes	D	42.5	D	44.6	2.1	No
2	Saga Ln. and Sand Hill Rd.	Signal	Menlo Park	D	B	11.1	B	11.3	0.2	No	B	15.5	B	15.7	0.2	No
3	Branner Dr. and Sand Hill Rd.	Signal	Menlo Park	D	A	5.4	A	5.4	0.0	No	A	7.9	A	8.1	0.2	No
4	Sharon Park Dr. and Sand Hill Rd.	Signal	Menlo Park	D	D	43.9	D	47.4	3.5	No	E	64.3	E	69.2	4.9	Yes
5	Alpine Rd./Santa Cruz Ave. and Junipero Serra Blvd.	Signal	Menlo Park	D	F	108.1	F	109.2	1.1	Yes	E	69.1	E	70.4	1.3	Yes
6	Santa Cruz Ave. and Sand Hill Rd.	Signal	Menlo Park	D	E	61.6	E	62.7	1.1	Yes	E	58.0	E	60.4	2.4	Yes
7	Oak Ave. and Sand Hill Rd.	Signal	Menlo Park	D	B	14.3	B	14.9	0.6	No	B	10.2	B	10.8	0.6	No
8	Middlefield Rd. and Marsh Rd.	Signal	Atherton	D	F	116.4	F	124.3	7.9	Yes	F	87.5	F	99.5	12.0	Yes
9	Encinal Ave. and Middlefield Rd.	Signal	Atherton	D	D	45.9	D	48.8	2.9	No	B	15.2	B	15.8	0.6	No
10	Middlefield Rd. and Oak Grove Ave.	Signal	Atherton	D	C	32.9	C	33.8	0.9	No	B	16.9	B	17.6	0.7	No
11	University Dr. (S) and Santa Cruz Ave.	Signal	Menlo Park	D	B	18.2	B	18.6	0.4	No	C	20.0	C	20.5	0.5	No
12	Laurel St. and Oak Grove Ave.	Signal	Menlo Park	C	C	24.1	C	25.3	1.2	No	B	14.3	B	14.7	0.4	No

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TABLE 4.13-10 PEAK HOUR INTERSECTION LEVELS OF SERVICE – EXISTING AND 2035 CONDITIONS

Int. No.	Intersection	Control	Jurisdiction	LOS Threshold	AM Peak Hour					PM Peak Hour						
					2035 Plus Cumulative		Delay Diff (sec)	Sig. Impact?	2035 Plus Cumulative		Delay Diff (sec)	Sig. Impact?				
					LOS	Delay (sec)			LOS	Delay (sec)			LOS	Delay (sec)		
13	Laurel St. and Ravenswood Ave.	Signal	Menlo Park	D	D	52.9	E	55.7	2.8	Yes	D	41.3	D	47.3	6.0	No
14	Middlefield Rd. and Ravenswood Ave.	Signal	Menlo Park	D	D	50.1	E	57.0	6.9	Yes	E	69.4	E	78.3	8.9	Yes
15	Middlefield Rd. and Ringwood Ave.	Signal	Menlo Park	D	C	29.9	C	29.9	0.0	No	C	29.0	C	29.0	0.0	No
16	Middlefield Rd. and Willow Rd.	Signal	Menlo Park	D	F	144.3	F	156.0	11.7	Yes	F	187.8	F	207.2	19.4	Yes
17	Gilbert Ave. and Willow Rd.	Signal	Menlo Park	D	D	51.6	E	58.5	6.9	Yes	E	63.9	F	81.0	17.1	Yes
18	Coleman Ave. and Willow Rd.	Signal	Menlo Park	D	F	93.5	F	103.7	10.2	Yes	F	80.9	F	97.4	16.5	Yes
19	Durham St. and Willow Rd.	Signal	Menlo Park	D	C	26.9	C	32.5	5.6	No	E	55.1	E	61.6	6.5	Yes
20	Bay Rd. and Marsh Rd.	Signal	Menlo Park	D	E	63.7	E	66.2	2.5	Yes	C	31.8	D	35.8	4.0	No
21	Bohannon Dr./Florence St. and Marsh Rd.	Signal	Menlo Park	D	E	76.3	F	86.9	10.6	Yes	F	128.1	F	132.9	4.8	Yes
22	Scott Dr./Rolison Rd. and Marsh Rd.	Signal	Menlo Park	D	E	74.5	F	80.8	6.3	Yes	F	138.9	F	144.0	5.1	Yes
23	Sand Hill Circle and Sand Hill Rd.	Signal	Menlo Park	D	C	27.2	C	28.1	0.9	No	F	142.7	F	148.4	5.7	Yes
	F										140.3	F	146.1	5.8		

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TABLE 4.13-10 PEAK HOUR INTERSECTION LEVELS OF SERVICE – EXISTING AND 2035 CONDITIONS

Int. No.	Intersection	Control	Jurisdiction	LOS Threshold	AM Peak Hour					PM Peak Hour						
					2035 Plus Cumulative		2035 Plus Project		Delay Diff (sec)	Sig. Impact?	2035 Plus Cumulative		2035 Plus Project		Delay Diff (sec)	Sig. Impact?
					LOS	Delay (sec)	LOS	Delay (sec)			LOS	Delay (sec)	LOS	Delay (sec)		
	I-280 NB Off-Ramp and Sand Hill Rd.	Signal	Caltrans	D	E	68.1	E	76.6	8.4	Yes	C	26.1	C	26.8	0.7	No
	EB Critical Approach on Sand Hill Rd.				E	60.2	E	69.1	8.9							
24	El Camino Real and Encinal Ave.	Signal	Caltrans	D	B	18.7	B	18.7	0.0	No	C	31.8	C	32.0	0.2	No
25	El Camino Real and Valparaiso Ave./Glenwood Ave.	Signal	Caltrans	D	D	48.8	D	49.8	1.0	No	E	57.3	E	58.9	1.6	Yes
	EB Critical Local Approach on Valparaiso Ave.				F	99.4	F	101.3	1.9		F	99.4	F	101.3	1.9	
26	El Camino Real and Oak Grove Ave.	Signal	Caltrans	D	D	38.3	D	39.2	0.9	No	D	52.1	D	52.6	0.5	No
27	El Camino Real and Santa Cruz Ave.	Signal	Caltrans	D	B	16.5	B	16.5	0.0	No	C	31.5	C	32.2	0.7	No
28	El Camino Real and Ravenswood Ave./Menlo Ave.	Signal	Caltrans	D	F	82.2	F	84.6	2.4	Yes	F	123.4	F	130.1	6.7	Yes
	WB Critical Local Approach on Ravenswood Ave.				F	114.7	F	117.1	2.4		F	223.0	F	235.0	12.0	
29	El Camino Real and Roble Ave.	Signal	Caltrans	D	B	14.0	B	14.0	0.0	No	D	47.6	D	48.1	0.5	No
30	El Camino Real and Middle Ave.	Signal	Caltrans	D	D	52.9	D	53.9	1.0	No	F	134.8	F	136.5	1.7	Yes

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TABLE 4.13-10 PEAK HOUR INTERSECTION LEVELS OF SERVICE – EXISTING AND 2035 CONDITIONS

Int. No.	Intersection	Control	Jurisdiction	LOS Threshold	AM Peak Hour					PM Peak Hour						
					2035 Plus Cumulative		2035 Plus Project		Delay Diff (sec)	Sig. Impact?	2035 Plus Cumulative		2035 Plus Project		Delay Diff (sec)	Sig. Impact?
					LOS	Delay (sec)	LOS	Delay (sec)			LOS	Delay (sec)	LOS	Delay (sec)		
	EB Critical Local Approach on Middle Ave.										F	223.8	F	225.6	2.8	
31	El Camino Real and Cambridge Ave.	Signal	Caltrans	D	B	16.0	B	16.1	0.1	No	C	22.1	C	22.1	0.0	No
32	Bay Rd. and Willow Rd.	Signal	Caltrans	D	E	63.0	E	68.1	5.1	Yes	D	48.0	D	54.4	6.4	No
	EB Critical Approach on Willow Rd.			E	71.5	E	76.3	4.8								
33	Newbridge St. and Willow Rd.	Signal	Caltrans	D	F	235.3	F	255.1	19.8	Yes	F	292.4	F	315.4	23.0	Yes
	SB Critical Local Approach on Newbridge St.			F	380.4	F	423.2	42.8								
34	O'Brien Dr. and Willow Rd.	Signal	Caltrans	D	B	18.3	B	18.6	0.3	No	C	34.3	D	39.6	5.3	No
35	Ivy Dr. and Willow Rd.	Signal	Caltrans	D	C	22.3	C	23.5	1.2	No	D	37.6	D	41.8	4.2	No
36	Hamilton Ave. and Willow Rd.	Signal	Caltrans	D	D	37.6	E	55.7	18.1	Yes	E	57.8	F	83.1	25.3	Yes
37	Bayfront Exp. and Willow Rd.	Signal	Caltrans	D	F	156.8	F	156.7	-0.1	No	F	235.2	F	235.9	0.7	Yes
	WB Critical Approach on Willow Road	F	322.9	F	323.8	0.9										
38	Bayfront Exp. and University Ave.	Signal	Caltrans	D	F	82.8	F	83.3	0.5	No	F	293.1	F	293.2	0.1	No

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TABLE 4.13-10 PEAK HOUR INTERSECTION LEVELS OF SERVICE – EXISTING AND 2035 CONDITIONS

Int. No.	Intersection	Control	Jurisdiction	LOS Threshold	AM Peak Hour					PM Peak Hour						
					2035 Plus Cumulative		Delay Diff (sec)	Sig. Impact?	2035 Plus Cumulative		Delay Diff (sec)	Sig. Impact?				
					LOS	Delay (sec)			LOS	Delay (sec)			LOS	Delay (sec)		
39	O'Brien Dr. and University Ave.	Signal	Caltrans	D	A	6.7	A	6.7	0.0	No	B	12.3	B	12.3	0.0	No
40	Bayfront Exp. and Chilco St.	Signal	Caltrans	D	D	37.4	D	37.4	0.0	No	F	103.9	F	104.0	0.1	No
41	Bayfront Exp. and Chrysler Dr.	Signal	Caltrans	D	B	13.8	B	13.8	0.0	No	F	102.6	F	102.7	0.1	No
42	Bayfront Exp. and Marsh Rd.	Signal	Caltrans	D	F	94.6	F	159.2	64.6	Yes	F	178.9	F	197.3	18.4	Yes
	EB Critical Approach on Marsh Rd.										F	174.7	F	213.3	38.6	
43	Valparaiso Ave. and University Dr.	Signal	Menlo Park	D	B	19.4	B	19.7	0.3	No	C	21.2	C	21.5	0.3	No
44	US 101 SB Ramps and Marsh Rd.	Signal	Caltrans	D	F	104.8	F	111.7	6.9	Yes	E	70.8	E	78.4	7.6	Yes
	WB Critical Approach on Marsh Rd.				F	129.0	F	139.0	10.0		E	69.7	E	77.5	7.8	
45	US 101 NB Ramps and Marsh Rd.	Signal	Caltrans	D	F	95.8	F	112.5	16.7	Yes	E	74.6	F	89.1	14.5	Yes
	EB Critical Approach on Marsh Rd.				F	122.0	F	145.0	23.0		F	94.5	F	109.0	14.5	
46	University Ave. and Bay Rd.	Signal	Caltrans	D	E	60.0	E	60.0	0.0	No	E	69.0	E	69.0	0.0	No
47	Middlefield Rd. and Lytton Ave.	Signal	Palo Alto	D	E	64.1	E	69.9	5.8	No	E	63.6	E	70.3	6.7	No

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TABLE 4.13-10 PEAK HOUR INTERSECTION LEVELS OF SERVICE – EXISTING AND 2035 CONDITIONS

Int. No.	Intersection	Control	Jurisdiction	LOS Threshold	AM Peak Hour					PM Peak Hour						
					2035 Plus Cumulative		Delay Diff (sec)	Sig. Impact?	2035 Plus Cumulative		Delay Diff (sec)	Sig. Impact?				
					LOS	Delay (sec)			LOS	Delay (sec)			LOS	Delay (sec)		
48	Sand Hill Rd. and El Camino Real	Signal	Caltrans	D	C	23.5	C	23.6	0.1	No	C	34.0	C	34.3	0.3	No
49	Sand Hill Rd. and Pasteur Dr.	Signal	Palo Alto	D	C	34.5	C	34.7	0.2	No	D	46.3	D	46.7	0.4	No
50	Campus Dr. and Junipero Serra Blvd.	Signal	Santa Clara Co.	D	B	19.9	C	20.2	0.3	No	D	50.3	D	50.3	0.0	No
51	Santa Cruz Ave. and Elder Ave.	Signal	Menlo Park	D	B	19.0	B	19.1	0.1	No	A	7.2	A	7.2	0.0	No
52	Santa Cruz Ave./Alameda De Las Pulgas	Signal	San Mateo Co.	D	B	13.5	B	13.8	0.3	No	B	14.7	B	15.0	0.3	No

Note: **Bold** indicates unacceptable operational conditions based on applicable City/Caltrans standards, as well as potentially significant impacts.

^a LOS = Level of Service. Delay = Average control delay per vehicle.

^b Delay / LOS are for overall intersection

Source: TJKM Transportation Consultants, March 2013.

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TABLE 4.13-11 ROADWAY AVERAGE DAILY TRAFFIC VOLUMES – EXISTING AND 2035 CONDITIONS

No.	Roadway	Segment	Classification	Existing ADT	2035 ADT	2035 Plus Plan ADT	Trip ADT Contribution		
							Added Daily Volume	% of 2035	Significant Impact
1	Haven Ave	City Limits-Bayfront Expwy/Marsh Rd	Collector	5,751	7,235	8,874	1,639	22.7%	Yes
2-1	Marsh Rd	Bay Rd-Bohannon Dr/Florence St	Minor Arterial	27,013	43,338	44,616	1,278	2.9%	Yes
2-2		Bohannon Dr/Florence St-Scott Dr	Primary Arterial	32,768	51,195	52,817	1,622	3.2%	Yes
3	Hamilton Ave	Chilco St-Willow Rd	Collector	3,010	3,812	4,929	1,117	29.3%	Yes
4-1	Willow Rd	Laurel St-Middlefield Rd	Collector	5,181	8,964	9,048	85	0.9%	No
4-2		Middlefield Rd-Gilbert Ave	Minor Arterial	26,213	43,774	45,626	1,852	4.2%	Yes
4-3		Gilbert Ave-Coleman Ave	Minor Arterial	26,336	43,885	45,747	1,862	4.2%	Yes
4-4		Coleman Ave-Durham St/Hospital Ave	Minor Arterial	28,038	45,853	47,549	1,697	3.7%	Yes
4-5		Durham St/Hospital Ave-Bay Rd	Minor Arterial	32,148	50,607	52,108	1,500	3.0%	Yes
5	Middlefield Rd	Ravenswood Ave-Willow Rd	Minor Arterial	20,668	29,610	30,467	856	2.9%	Yes
6-1	Laurel St	Glenwood Ave-Oak Grove Ave	Collector	3,916	5,717	5,840	123	2.1%	No
6-2		Oak Grove Ave-Ravenswood Ave	Collector	4,404	5,540	5,554	14	0.3%	No
6-3		Ravenswood Ave-Willow Rd	Collector	4,917	9,481	9,599	118	1.2%	Yes
7-1	University Dr	Middle Ave-Menlo Ave	Collector	5,666	8,087	8,372	285	3.5%	No
7-2		Menlo Ave-Santa Cruz Ave	Collector	17,641	24,577	24,930	353	1.4%	Yes
7-3		Santa Cruz Ave-Oak Grove Ave	Collector	7,052	9,210	9,335	125	1.4%	Yes
7-4		Oak Grove Ave-Valparaiso Ave	Collector	5,376	7,197	7,253	56	0.8%	No
8-1	Valparaiso Ave/	University Dr-El Camino Real	Minor Arterial	13,238	18,279	18,422	143	0.8%	Yes
8-2	Glenwood Ave	El Camino Real-Laurel St	Collector	5,899	7,854	7,957	102	1.3%	No

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No.	Roadway	Segment	Classification	Existing ADT	2035 ADT	Trip ADT Contribution			Significant Impact
						2035 Plus Plan ADT	Added Daily Volume	% of 2035	
9-1		University Dr -El Camino Real	Collector	10,038	12,808	12,851	43	0.3%	No
9-2	Oak Grove Ave	El Camino Real-Laurel St	Collector	9,677	13,196	13,399	203	1.5%	Yes
9-3		Laurel St-Middlefield Rd	Collector	8,556	10,710	10,742	31	0.3%	No
10-1		El Camino Real-Alma St	Minor Arterial	24,076	37,525	38,471	946	2.5%	Yes
10-2	Ravenswood Ave	Alma St-Laurel St	Minor Arterial	19,912	31,116	31,972	856	2.8%	Yes
10-3		Laurel St-Middlefield Rd	Minor Arterial	17,977	25,237	25,827	589	2.3%	Yes
11-1		Alameda de las Pulgas- Avy Ave/ Orange Ave	Minor Arterial	9,238	12,973	13,282	308	2.4%	No
11-2		Avy Ave/Orange Ave-Olive St	Minor Arterial	16,097	23,277	23,644	367	1.6%	Yes
11-3	Santa Cruz Ave	Olive St-University Dr	Minor Arterial	17,179	24,391	24,720	329	1.4%	Yes
11-4		University Dr-Crane St	Minor Arterial	8,895	13,298	13,466	168	1.3%	No
11-5		Crane St-El Camino Real	Minor Arterial	8,074	12,969	13,087	118	0.9%	No
12-1		Olive St-University Dr	Collector	7,222	9,936	10,162	226	2.3%	Yes
12-2	Middle Ave	University Dr-El Camino Real	Collector	7,519	10,450	10,530	80	0.8%	Yes
13-1	Alpine Rd/	Junipero Serra Blvd-City Limits	Minor Arterial	23,406	29,425	29,550	125	0.4%	Yes
13-2	Santa Cruz Ave	Sand Hill Rd-Junipero Serra Blvd	Minor Arterial	30,187	38,793	39,026	233	0.6%	Yes
14	Linfield Dr	Middlefield Rd - Laurel St	Local	1,583	1,990	2,131	141	7.1%	Yes
15	Oak Ave	Sand Hill Rd - Olive St	Local	2,518	3,482	3,645	163	4.7%	Yes

Notes: **Bold** indicates potentially significant impacts.

Source: TJKM Transportation Consultants, March 2013.

- “ Middlefield Road and Ravenswood Avenue during both AM and PM peak hours level of service degrades from LOS D to LOS E during AM peak hour and delay increases by more than 0.8 seconds during PM peak hour.
- “ Middlefield Road and Willow Road during both AM and PM peak hour delay increases by more than 0.8 seconds.
- “ Gilbert Avenue and Willow Road during both AM and PM peak hour level of service degrades from LOS D to LOS E during AM peak hour and delay increases by more than 0.8 seconds during PM peak hour.
- “ Coleman Avenue and Willow Road during both AM and PM peak hours delay increases by more than 0.8 seconds.
- “ Durham Street and Willow Road during PM peak hour delay increases by more than 0.8 seconds
- “ Bay Road and Marsh Road during AM peak hour delay increases by more than 0.8 seconds.
- “ Bohannon Drive/Florence Street and Marsh Road during both AM and PM peak hours delay increases by more than 0.8 seconds.
- “ Scott Drive/Rolison Road and Marsh Road during both AM and PM peak hours delay increases by more than 0.8 seconds.
- “ I-280 NB Off-Ramp/Sand Hill Circle and Sand Hill Road (Caltrans) during both AM and PM peak hours delay increases by more than 0.8 seconds.
- “ El Camino Real and Valparaiso Avenue/Glenwood Avenue (Caltrans) during PM peak hour delay increases by more than 0.8 seconds
- “ El Camino Real and Ravenswood Avenue/Menlo Avenue (Caltrans) during both AM and PM peak hours delay increases by more than 0.8 seconds
- “ El Camino Real and Middle Avenue (Caltrans) during PM peak hour delay increases by more than 0.8 seconds
- “ Bay Road and Willow Road (Caltrans) during AM peak hour delay increases by more than 0.8 seconds
- “ Newbridge Street and Willow Road (Caltrans) during both AM and PM peak hours delay increases by more than 0.8 seconds during AM peak hour delay increases by 23 seconds for PM peak hour
- “ Hamilton Avenue and Willow Road (Caltrans) during both AM and PM peak hour level of service degrades from LOS D to LOS E during AM peak hour delay increases by 23 seconds for PM peak hour

- “ Bayfront Expressway and Willow Road (Caltrans) during PM peak hour delay increases by more than 0.8 seconds
- “ Bayfront Expressway and Marsh Road (Caltrans) during both AM and PM peak hour delay increase by 23 seconds during AM Peak hour
- “ The most critical movement delay increases by more than 0.8 seconds during PM peak hour
- “ US 101 SB Ramps and Marsh Road (Caltrans) during both AM and PM peak hours delay increases by more than 0.8 seconds
- “ US 101 NB Ramps and Marsh Road (Caltrans) during both AM and PM peak hours delay increases by more than 0.8 seconds

ii. Roadway Traffic Volumes

a) Arterial Streets

The following arterial segments (primary and minor) exceed 90 percent capacity with ADTs over 18,000 vehicles per day and under 2035 plus Plan Components conditions more than 100 trips would be added to each of these segments; therefore, City’s threshold of significance for arterial streets would be exceeded.

- “ Marsh Road from Bohannon Drive/Florence Street to Scott Drive (primary arterial)
- “ Marsh Road from Bay Road to Bohannon Drive/Florence Street
- “ Willow Road from Middlefield Road to Gilbert Avenue
- “ Willow Road from Gilbert Avenue to Coleman Ave
- “ Willow Road from Coleman Avenue to Durham St/Hospital Avenue
- “ Willow Road from Durham Street/Hospital Ave to Bay Road
- “ Middlefield Road from Ravenswood Avenue to Willow Road
- “ Valparaiso Avenue/Glenwood Avenue from University Drive to El Camino Real
- “ Ravenswood Avenue from El Camino Real to Alma Street
- “ Ravenswood Avenue from Alma Street to Laurel Street
- “ Ravenswood Avenue from Laurel Street to Middlefield Road
- “ Santa Cruz Ave from Avy Avenue/Orange Ave to Olive Street
- “ Santa Cruz Ave from Olive Street to University Drive

- “ Alpine Road/Santa Cruz Avenue from Junipero Serra Boulevard to City Limits
- “ Alpine Road/Santa Cruz Avenue from Sand Hill Road to Serra Boulevard

b) Collector Streets

More than a net total of 50 trips would be added to the following collector streets that are currently at 90 percent capacity with ADTs over 9,000 vehicles per day:

- “ University Drive from Menlo Avenue to Santa Cruz Avenue
- “ University Drive from Santa Cruz Avenue to Oak Grove Avenue
- “ Oak Grove Avenue from University Drive to El Camino Real
- “ Oak Grove Avenue from El Camino Real to Laurel Street
- “ Middle Avenue from Olive Street to University Drive
- “ Middle Avenue from University Drive to El Camino Real

Future trips would exceed the City’s threshold by adding more than 12.5 percent additional trips or resulting in an ADT that would exceed 9,000 vehicles per day for the collector streets which exceed 50 percent capacity with ADTs over 5,000 vehicles per day at the following segment.

- “ Haven Avenue from City Limits to Bayfront Expressway/Marsh Road

Future trips would exceed the City’s threshold by adding more than 25 percent additional trips for the collector streets with ADTs of less than 5,000 vehicles per day at the following collector street segment:

- “ Hamilton Avenue from Chilco Street to Willow Road

c) Local Streets

Future trips more than a net total of 25 trips would be added to the following local streets that are currently at 90 percent capacity with ADTs over 1,350 vehicles per day:

- “ Linfield Drive from Middlefield Road to Laurel Street
- “ Oak Avenue from Sand Hill Road to Olive Street

d) Freeway Traffic Volumes

The six selected freeway segments are all considered as Routes of Regional Significance by the San Mateo County CMP. As shown in Table 4.13-12, all study segments currently operate at their CMP level of ser-

vice standards or worse, with the exception of SR 84 between Marsh Road and Willow Road. The results shown in Table 4.13-12 also show that the addition of the traffic volumes generated by the future development under the Plan Components would bring potentially significant impact on US 101 South of Marsh Road.

2. Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways.

As discussed above in Section F.1, selected roadway and freeway segments on the C/CAG's CMP system were assessed to determine compliance with the C/CAG's CMP standards. The results for roadway and freeway segments are presented in Table 4.13-5 and Table 4.13-6, respectively.

As shown in Table 4.13-5, the future development would result in *significant* impacts on 12 roadway segments under Near-Term 2014 plus Plan Components conditions. Out of the six freeway segments analyzed, as shown on Table 4.13-6, the addition of the traffic volumes generated by the future development permitted under the Plan Components would result in *significant* impacts on the freeway segment on US 101 South of Marsh Road.

3. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.

The EA Study Area is located approximately two miles from Palo Alto Airport, but no portions of the City are within the airport safety zones identified in the Comprehensive Land Use Plan for the airport.¹⁴ Menlo Park is located more than two miles from the San Francisco International and San Carlos Airports to the north and Moffett Federal Airfield to the south. The Plan Components do not propose any land uses which could disrupt air traffic patterns and *no impact* would occur.

¹⁴ Santa Clara County Airport Land Use Commission, 2008. Palo Alto Airport Comprehensive Land Use Plan, Figure 7, <http://www.sccgov.org/sites/planning/Plans%20-%20Programs/Airport%20Land-Use%20Commission/Documents/PAO-adopted-11-19-08-CLUP.pdf>, accessed on September 6, 2012.

CITY OF MENLO PARK
 HOUSING ELEMENT UPDATE, GENERAL PLAN CONSISTENCY UPDATE,
 AND ZONING ORDINANCE AMENDMENTS ENVIRONMENTAL ASSESSMENT
 TRANSPORTATION AND TRAFFIC

TABLE 4.13-12 **FREEWAY TRAFFIC VOLUMES – EXISTING AND 2035 CONDITIONS**

Segment No.	Roadway	Segment	Existing LOS ^a	CMP LOS Standards	Capacity ^b	Project Trips	% of Capacity	Significant Impact?
1	US 101	N/O Marsh Rd	F	F	11,500	20	0.17%	No
2	US 101	S/O Marsh Rd	F	F	11,500	134	1.17%	Yes
3	US 101	S/O Willow Rd	F	F	11,500	88	0.77%	No
4 -1	SR 84	Marsh Rd – Willow Rd	B	D	4,500	4	0.09%	No
4-2	SR 84	Willow Rd – University Ave	F	E	4,500	10	0.22%	No
5	I-280	N/O Sand Hill	E	D	9,200	7	0.08%	No
6	I-280	S/O Sand Hill	E	D	9,200	14	0.16%	No

Note: **Bold** indicates unacceptable operational conditions based on applicable City/Caltrans standards, as well as potentially significant impacts.

^a Source: 2011 CMP Monitoring Report. Based on average speed.

^b Capacity is based on number of lanes and 2,200 vphpl for four lane segments and 2,300 vphpl for six lane and more segments for US 101 and I-280. Capacity of 1,500 vphpl is used for SR 84 segments.

Source: TJKM Transportation Consultants, March 2013.

4. Substantially increase hazards due to a design feature (e.g. sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment).

The Plan Components would result in an increase of residential and some mixed-use land uses. As these land uses develop, construction of new roadways would not be necessary; however, modifications to existing roadways may be necessary to support the growth. As with current practice, the improvements would be designed and reviewed in accordance with the City's Public Works Department Transportation Program. In addition, the future housing would be concentrated on sites either already developed and/or in close proximity to existing residential and residential-serving development, where impacts related to incompatible traffic related land uses would not likely occur with the exception of housing Site 5 (Haven Avenue).

Housing Site 5 (Haven Avenue) is located in an area surrounded by limited industrial uses and would not be compatible with the surrounding land uses. However, the General Plan contains policies that would reduce potential hazards due to roadway design or incompatible uses through establishing acceptable levels of service, travel speeds, and promote land use compatibility as follows:

a. Current General Plan Land Use and Circulation Element

- “ Policy II-A-1: Level of service D (40 seconds average stopped delay per vehicle) 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 US 101.
- “ Policy II-A-2: The City should attempt to achieve and maintain average travel speeds of 14 miles per hour (Level of Service D) or better on El Camino Real and other arterial roadways controlled by the State, and at 46 miles per hour (Level of Service D) or better on US 101. The City shall work with Caltrans to achieve and maintain average travel speeds and intersection level of service consistent with standards established by the San Mateo County Congestion Management Plan.
- “ Policy II-A-3: 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 (60 seconds per vehicle).
- “ Policy II-A-4: 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-8: 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 I-A-2: New residential developments shall be designed to be compatible with Menlo Park’s residential character.
- “ 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-7: Development of secondary residential units on existing developed residential lots shall be encouraged consistent with adopted City standards

Future developments and roadway improvements would be designed in accordance to City standards and will be subject to the General Plan policies. Compliance with the City standards and policies would ensure that the future housing would not significantly increase hazards due to design features or incompatible uses. Therefore, the Plan Components impact is *less than significant*.

5. Result in inadequate emergency access.

Development permitted under the Plan Components would be dispersed throughout the City and does not propose any new major roadways or other physical features through existing neighborhoods that would obstruct emergency access to evacuation routes. Substantial land use changes would occur to the land use map with regards to potential housing Site 5 (Haven Avenue) where the Limited Industry land use designation would change to a Residential land use designation allowing up to 40 dwelling units per acre. However, housing Site 5 (Haven Avenue) would rely on existing roadway infrastructure and would not obstruct existing emergency access to evacuation routes. In addition, buildings and site design for individual projects would be designed and built according to local Fire District standards and State Building Code standards, further ensuring that emergency access by fire or emergency services personnel would not be impaired. The Plan Components do not propose any new major roadways or other physical features through existing neighborhoods that would create new barriers in the EA Study Area under the Plan Components would be reviewed by City Planning, Engineering and Building Departments as well as the Menlo Park Fire Protection District for compliance with the Zoning and Building Code and Engineering Standards and Fire Code to ensure adequate emergency vehicle access. Accordingly, emergency access impacts would be *less than significant*.

6. Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

The new residential development permitted under the Plan Components is anticipated to generate new transit riders, bicyclists, and pedestrians. The General Plan includes current goals, policies, and programs that provide for an integrated network of bicycle and pedestrian facilities as well as for the needs of transit users. The future housing would be concentrated on sites either already developed and/or in close proximity to existing residential and residential-serving development, and would be served by existing transit, bicycle, and pedestrian infrastructure.

The additional transit ridership on the transit network is estimated to be approximately 0.37 riders/unit, a total of 430 transit riders, based on the transit mode share for the multi-family residential in Menlo Park.¹⁵ Considering that the potential future residential development is dispersed throughout the City, the current transit service system is expected to have enough capacity to accommodate these additional riders.¹⁶ In addition, as shown in Figure 4.13-2, most of the future housing would be located along the current transit or shuttle routes, so most of the riders would be able to walk or bike to the closest transit station. Therefore, the Plan Components would have a *less-than-significant* impact to the transit system.

The additional bicycle ridership is estimated to be approximately 0.26 riders/unit, a total of 300 bicycle riders, based on the bike mode share for the multi-family residential in Menlo Park.¹⁷ Considering that the potential future residential development is dispersed throughout the City, the current bicycle network should be able to accommodate these additional bicycle riders. In addition, as illustrated in Figure 4.13-3, the current bikeways are along the major roadways of the City. There are also many bikeways proposed to fill in the current gap in the City. Housing Sites 2 and 3 are located along the existing Class II Bike Lanes and Sites 1, 4 and 4 are located along the proposed Class I and Class II Bike Lanes. Therefore, the future development under the Plan Components would have a *less-than-significant impact* to the bicycle system.

Implementation of the Plan Components would continue to promote the use of public transit, promote the safe use of bicycles as a commute alternative and for recreation and promotes walking as a commute alternative and for short trips, under Goals II-B, II-D and II-E, respectively. In addition, the Plan Components

¹⁵ C/CAG Model, 2013. Santa Clara County VTA.

¹⁶ Personal correspondence with TJKM staff and Ted Yurek, Senior Planner, at SamTrans, February 2013.

¹⁷ C/CAG Model, 2013. Santa Clara County VTA.

would be consistent with the following current, modified, and new General Plan goals, policies, and programs regarding public transit, bicycle, and pedestrian facilities.

a. Transit (Rail and Bus Service)

- “ 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-5: The City shall work with appropriate agencies to agree on long-term peninsula transit service that reflects Menlo Park's desires and is not disruptive to the City.

i. *Pedestrian and Bicycle Facilities*

- “ Policy I-G-11: Well-designed pedestrian facilities should be included in areas of intensive pedestrian activity.
- “ Policy II-D-2: The City shall, within available funding, work to complete a balanced system of bikeways within Menlo Park and implement the Comprehensive Bicycle Plan.
- “ Policy II-D-3: The design of streets within Menlo Park shall consider the impact of street cross section, intersection geometries and traffic control devices on bicyclists.
- “ Policy II-D-5: The City shall encourage transit providers within San Mateo County to provide improved bicycle access to transit including secure storage at transit stations and on-board storage where feasible.
- “ Policy II-E-1: The City shall require all new development to incorporate safe and attractive pedestrian facilities on-site.
- “ Policy II-E-2: The City shall endeavor to maintain safe sidewalks and walkways where existing within the public right-of-way.
- “ Policy II-E-3: Appropriate traffic control shall be provided for pedestrians at intersections
- “ Policy II-E-4: 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-5: The City shall 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.

ii. Land Use and Transportation

- “ Policy I-I-2: 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.
- “ Policy II-C-4: The City shall coordinate its transportation demand management efforts with other agencies providing similar services within San Mateo County.

a) Amended General Plan Open Space and Conservation Element

- “ Policy OSC-4.1: Sustainable Approach to Land Use Planning to Reduce Resource Consumption. Encourage, to the extent feasible, (1) a balance and match between jobs and housing, (2) higher density residential and mixed-use development to be located adjacent to commercial centers and transit corridors, and (3) retail and office areas to be located within walking and biking distance of transit or existing and proposed residential developments.
- “ Goal OSC-4: Promote Sustainability and Climate Action Planning. Promote a sustainable energy supply and implement City's Climate Action Plan to reduce greenhouse gas emissions and improve the sustainability of actions by City government, residents, and businesses in Menlo Park. This includes promoting land use patterns that reduce the number and length of motor vehicle trips and promotion of recycling, reduction, and reuse programs.

Furthermore, the introduction of additional residential land uses would not conflict with the City's Sidewalk Master Plan, Bike Plan and Complete Streets Policy. Implementation of the Plan Components would therefore support and would not conflict with plans, programs, and policies regarding bicycle or pedestrian facilities, or decrease the performance and safety of such facilities. Therefore, the Plan Components impact is *less than significant*.

7. Cumulative Impacts

As discussed under Section D.1, this analysis takes a conservative approach by applying both a one percent compound growth per year and the traffic generated by the pending/approved projects within the City of Menlo Park shown on Table 4.13-3 under both the Near-Term 2014 plus Plan Components conditions and the 2035 plus Plan Components conditions. Therefore, the impact discussion above incorporates the cumulative scenario by default and no further discussion is warranted.

G. Impacts and Mitigation Measures

1. Intersections

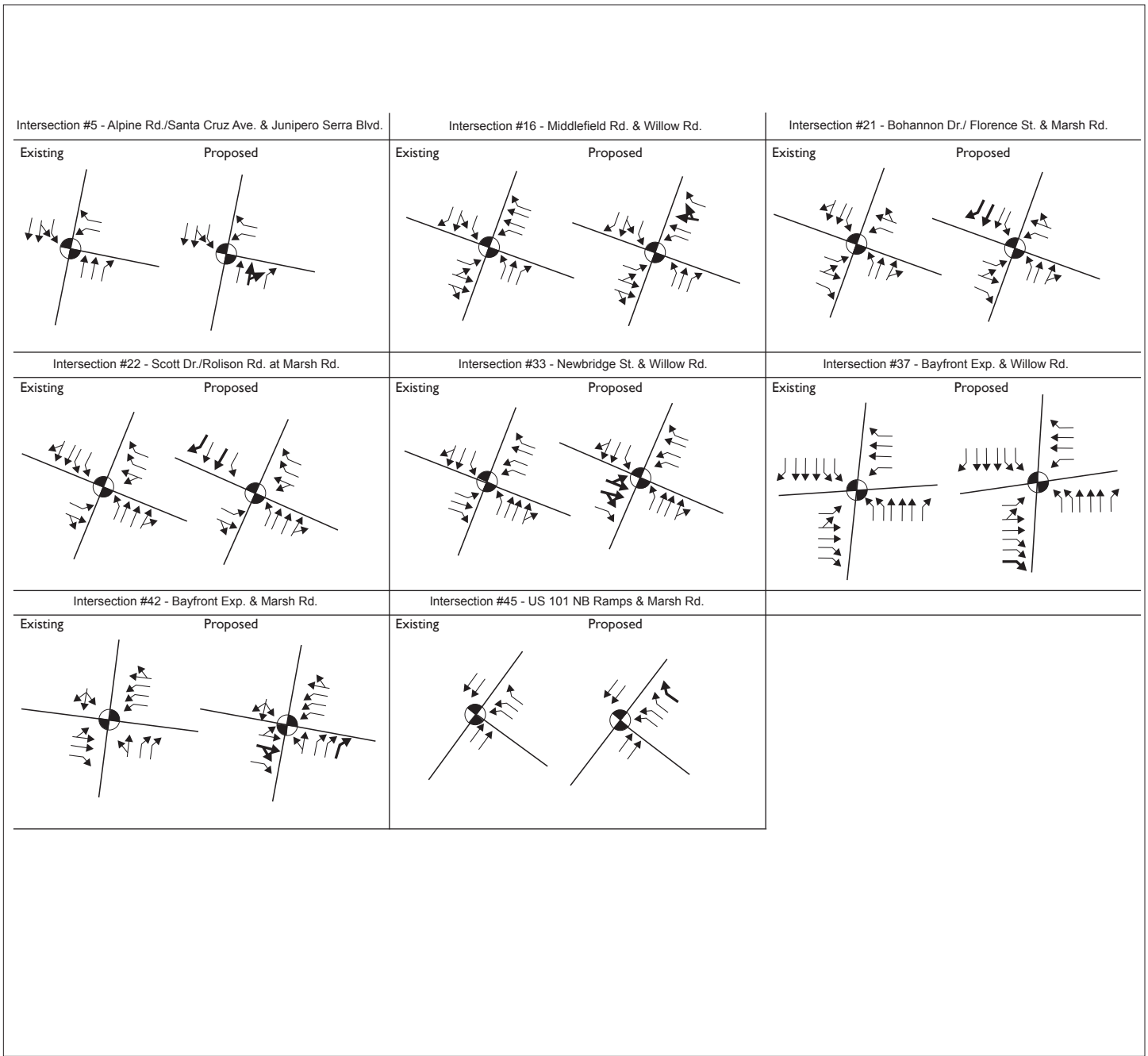
Impact TR-1: As shown in Table 4.13-10, eight intersections have *significant* impacts with the addition of trips from future residential development during both AM or PM peak hours under Near-Term 2014 plus Plan Components conditions. Figure 4.13-9 illustrates the recommended geometry improvements to reduce these impacts.

Mitigation Measure TR-1a: At the intersection of Alpine Road/Santa Cruz Avenue and Junipero Serra Boulevard, the necessary mitigation measure is to re-stripe the northbound approach on Alpine Road from two through lanes and one right turn lane to one through lane, one shared through/right turn lane and one right turn lane. A bike lane is currently striped between the right-most thru lane and the right turn lane.

With the mitigation measure, the intersection level of service improves to LOS D during the AM peak hour, under the Near-Term 2014 plus Plan Components conditions. However, the re-striping for the northbound approach may not be feasible since this may create a challenge by placing bicyclists between two right turn lanes and may, therefore, require further analysis for the existing bike lane. Therefore, this impact would remain *significant and unavoidable*.

Mitigation Measure TR-1b: At the intersection of Middlefield Road and Willow Road, the necessary mitigation measure is to re-stripe the northbound approach on Middlefield Road from one left turn lane, two through lanes and one right turn lane to one left turn lane, one through lane, one shared through/right turn lane and one right turn lane.

With the mitigation measure, the intersection level of service improves to LOS D during the AM peak hour and improves to LOS E during the PM peak hour, under the Near-Term 2014 plus Plan Components conditions. According to the 1601 Willow Road Development Agreement for the Facebook East Campus Project (FECPPDA), Facebook is responsible for implementing this necessary mitigation measure. Therefore, after applying the mitigation measure, the impact is *less than significant*.



Source: TJKM Transportation Consultants.

FIGURE 4.13-9

NEAR-TERM 2014 WITH PLAN COMPONENTS INTERSECTION MITIGATIONS MEASURES

Mitigation Measure TR-1c: At the intersection of Bohannon Drive/Florence Street and Marsh Road, the necessary mitigation measure is to add one exclusive westbound right turn lane on Marsh Road.

With the mitigation measure, the intersection level of service improves to LOS D during the AM peak hour, under the Near-Term 2014 plus Plan Components conditions. Through the Development Agreement for the Menlo Gateway Project (MGDA), Bohannon Development Agreement is responsible for implementing the necessary mitigation measure. Therefore, after applying the mitigation measures, this impact is *less than significant*.

Mitigation Measure TR-1d: At the intersection of Scott Drive/Rolison Road and Marsh Road, the necessary mitigation measure is to re-stripe the westbound approach on Marsh Road from two left turn lanes, one through lane and one shared through/right turn lane to one left turn lane, two through lanes and one right turn lane.

With the mitigation measure, the intersection level of service improves to LOS D while the average queue for the westbound left turn movement remains as one vehicle during the PM peak hour, under the Near-Term 2014 plus Plan Components conditions. The improvements may appear feasible in the existing right-of-way, but the intersection is under both City and Caltrans jurisdiction and coordination between the two jurisdictions would be required. As such, the City cannot guarantee implementation of the mitigation measure. Therefore, this impact remains *significant and unavoidable*.

Mitigation Measure TR-1e: At the intersection of Newbridge Street and Willow Road, the necessary mitigation measure is to re-stripe the southbound approach on Newbridge Street from one left turn lane, one through lane and one right-turn lane to one shared left turn/through lane, one shared through/right turn lane and one right turn lane, and to add one additional receiving lane on the south leg on Newbridge Street accordingly.

With the mitigation measure, the intersection still operates at LOS F during both the AM and PM peak hours, but the delay for the most critical movements are reduced to be less than under the Near-Term 2014 plus Plan Components conditions. However, the improvements may not be feasible due to right-of-way constraints on the south leg of the intersection, which would impact private property in East Palo Alto. In addition, this intersection is under Caltrans jurisdiction, and the City cannot guarantee implementation of the mitigation measure. Therefore, this impact remains *significant and unavoidable*.

It should be noted that FECPPDA also suggests a mitigation measure for this intersection, which includes an additional eastbound left-turn lane, an additional northbound receiving lane for the eastbound left turning traffic, an additional westbound through/right-turn lane, and an additional receiving lane for the westbound through traffic. With this mitigation measure, the intersection still operates at LOS F during both the AM and PM peak hours. The delay for the most critical movements are reduced to be less than under the Near-Term condition during the PM peak hour; however, during the AM peak hour, the delay for the eastbound through critical movement is 70 seconds higher than under the Near-Term 2014 plus Plan Components condition even though the overall delay of the intersection was reduced. Therefore, this potential FPDA mitigation measure could be considered as a partial mitigation measure, under the Near-Term 2014 plus Plan Components conditions, and this impact remains *significant and unavoidable*.

Mitigation Measure TR-1f: At the intersection of Bayfront Expressway and Willow Road, the necessary mitigation measure is to add a third right turn lane for the eastbound approach on Willow Road.

With the mitigation measure, the intersection still operates at LOS F during the PM peak hour, but the delay for the most critical movements are reduced to be less than under 2014 plus Plan Components condition. According to the FECPPDA, Facebook is responsible for implementing this mitigation measure. However, since this intersection is under Caltrans jurisdiction and the City cannot guarantee implementation of the mitigation measure, this impact remains *significant and unavoidable*.

Mitigation Measure TR-1g: At the intersection of Bayfront Expressway and Marsh Road, the necessary mitigation measure is to re-stripe the southbound approach on Bayfront Expressway from one shared left turn/through lane, one through lane and one right turn lane to one left turn/through lane, one through/right turn lane and one right turn lane and to add a third right turn lane for the eastbound approach on Marsh Road.

With the mitigation measure, the intersection operates at LOS D during both AM and PM peak hours, under the Near-Term 2014 plus Plan Components conditions. However, this intersection is included in the City's TIF Program and the improvements to each approach may appear feasible in the existing right-of-way. Since the intersection is under Caltrans jurisdiction, the City cannot guarantee implementation of the mitigation measure. Therefore, this impact remains *significant and unavoidable*.

Mitigation Measure TR-1h: At the intersection of US 101 NB Ramps and Marsh Road, the necessary mitigation measure is to widen the northbound off-ramp on the western side of the approach and add an additional left-turn lane along with adding a second right-turn lane by restriping one of the existing left-turn lanes. This improvement will require relocation of existing traffic signal poles, utility relocation, and reconstruction of the curb ramp on the southwest corner of the intersection.

With the mitigation measure, the intersection operates at LOS D during the AM peak hour, under the Near-Term 2014 plus Plan Components conditions. According to the FECPDA, Facebook is responsible for implementing this mitigation measure. However, since this intersection is under Caltrans jurisdiction, the City cannot guarantee implementation of the mitigation measure. Therefore this impact remains *significant and unavoidable*.

Impact TR-2: 2035 Plus Plan Components Condition. As shown in Table 4.13-10, 25 intersections would have significant impacts with the addition of project trips to 2035 plus Plan Components Condition during the AM or PM peak hours. Figure 4.13-10a and 4.13-10b illustrates the recommended geometry improvements to reduce these impacts.

Mitigation Measure TR-2a: At the intersection of Addison Wesley and Sand Hill Road, the necessary mitigation measure is to restripe the eastbound approach on Sand Hill Road from one left turn lane, two through lanes and one right turn lane to one left turn lane, two through lanes and one shared through/right turn lane. One additional receiving lane on Sand Hill Road is recommended to be added accordingly. A bike lane currently exists between the right-most through lane and the right turn lane.

With the mitigation measure, the intersection level of service improves to LOS B during the AM peak hour, under the 2035 plus Plan Components conditions. However, the improvements may not be feasible due to right-of-way constraints affecting private property. In addition, the re-striping for the eastbound approach is not be feasible since this could result in increased safety hazards to bicyclist by placing bicyclists between two through lanes. Therefore, this impact remains *significant and unavoidable*.

Mitigation Measure TR-2b: At the intersection of Sharon Park Drive and Sand Hill Road, the necessary mitigation measure is to add one exclusive westbound right turn lane on Sand Hill Road.

With the mitigation measure, the intersection level of service improves to LOS D during the PM peak hour, under the 2035 plus Plan Components conditions. However, the improvements may not be fea-

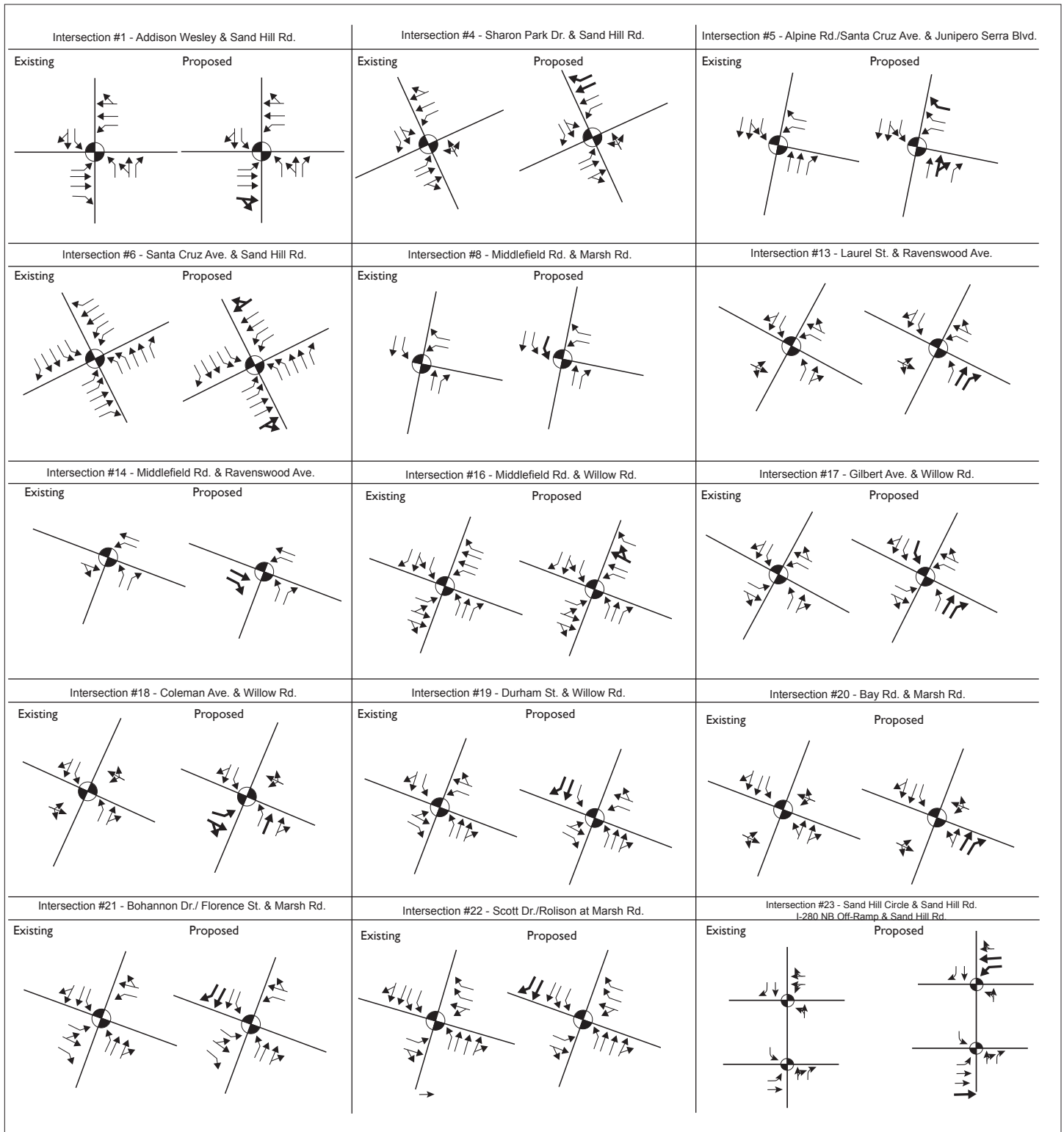
sible due to right-of-way constraints and the presence of a dozen mature evergreen trees. Even though this impact remains *significant and unavoidable*, it should be noted that the width of the westbound bike lane of 10.5 feet enables this lane to function as a right turn lane in compliance with the California Manual on Uniform Traffic Control Devices (California MUTCD).

Mitigation Measure TR-2c: At the intersection of Alpine Road/Santa Cruz Avenue and Junipero Serra Boulevard, the necessary mitigation measure is to re-stripe the northbound approach on Alpine Road from two through lanes and one right turn lane to one through lane, one shared through/right turn lane and one right turn lane. In addition, a second westbound right turn lane is recommended to be added on Junipero Serra Boulevard.

With the mitigation measure, the intersection level of service improves to LOS D during the AM peak hour, under the 2035 plus Plan Components conditions; and remains LOS E during PM peak hour, with the delay for the most critical movements reduced to be less than under the 2035 plus Plan Components conditions. However, the re-striping for the northbound approach may not be feasible since this may create a challenge by placing bicyclists between two right turn lanes and may, therefore, require further analysis for the existing bike lane. Therefore, this impact remains *significant and unavoidable*.

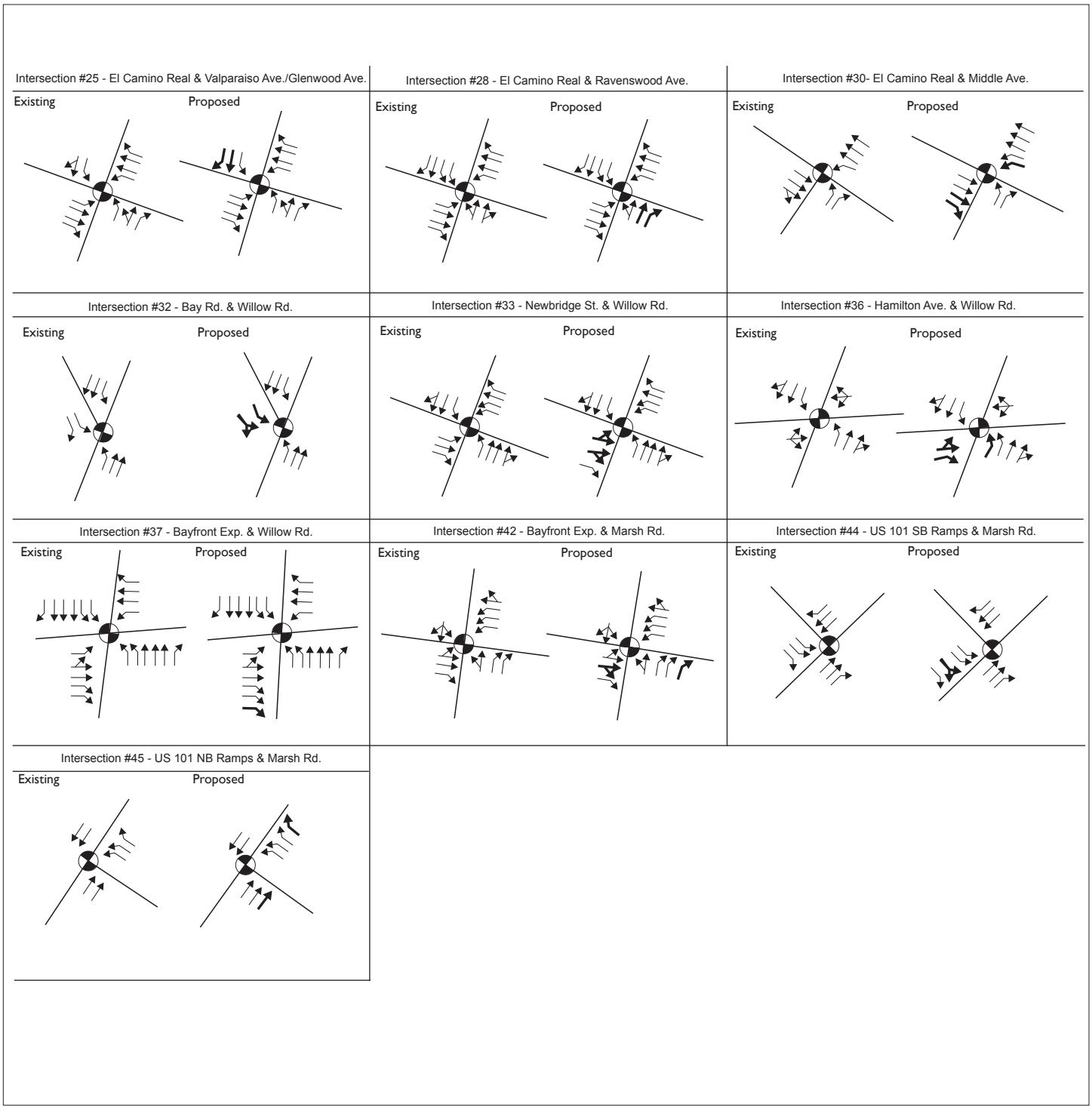
Mitigation Measure TR-2d: At the intersection of Santa Cruz Avenue and Sand Hill Road, the necessary mitigation measure is to re-stripe both westbound and eastbound approaches on Sand Hill Road from two left turn lanes, two through lanes and one right turn lane to two left turn lanes, two through lanes and one shared through/right turn lane. One additional receiving lane is recommended to be added on Sand Hill Road for the westbound direction.

With the mitigation measure, the intersection level of service remains LOS E during the AM peak hour, with the delay for the most critical movement reduced to be less than under the 2035 plus Plan Components conditions; and improves to LOS D during the PM peak hour, under the 2035 plus Plan Components conditions. However, the improvements may not be feasible due to right-of-way constraints, with the northwest corner of the intersection under the control of San Mateo County. Also, the re-striping for the eastbound and westbound approaches may not be feasible since this could result in increased safety hazards to bicyclist by placing bicyclists between two through lanes. Therefore, this impact remains *significant and unavoidable*.



Source: TJKM Transportation Consultants.

FIGURE 4.13-10A



Source: TJKM Transportation Consultants.

FIGURE 4.13 -10B

Mitigation Measure TR-2e: At the intersection of Middlefield Road and Marsh Road, the necessary mitigation measure is to add a second southbound left turn lane on Middlefield Road and to add one receiving lane on Marsh Road accordingly.

With the mitigation measure, the intersection level of service improves to LOS D during the AM peak hour and LOS E during the PM peak hour, under the 2035 plus Plan Components conditions. However, this intersection is under the jurisdiction of Town of Atherton. Based on prior consultation with the Town of Atherton, the improvements may require covering Atherton Channel and removing numerous heritage trees. Therefore, this impact remains *significant and unavoidable*.

Mitigation Measure TR-2f:

At the intersection of Laurel Street and Ravenswood Avenue, the necessary mitigation measure is to add one exclusive eastbound right turn lane on Ravenswood Avenue.

With the mitigation measure, the intersection level of service improves to LOS D during the AM peak hour, under the 2035 plus Plan Component conditions

Both the City's TIF Program and the El Camino Real/Downtown Specific Plan project suggest the mitigation measures for this intersection, which are consistent with the necessary mitigation measure suggested for the Plan Components. However, the improvements may not be feasible due to right-of-way constraints. Therefore, this impact remains *significant and unavoidable*.

Mitigation Measure TR-2g: At the intersection of Middlefield Road and Ravenswood Avenue, the necessary mitigation measure is to add one exclusive southbound right turn lane on Middlefield Road.

With the mitigation measure, the intersection level of service improves to LOS D during both the AM and the PM peak hours, under the 2035 plus Plan Components conditions. However, this intersection is included in the City's TIF Program and could be constructed over the long term. However, the improvements may not be feasible due to right-of-way constraints affecting private property in Atherton and would involve coordination with the Town of Atherton. Therefore, this impact remains *significant and unavoidable*.

Mitigation Measure TR-2h: At the intersection of Middlefield Road and Willow Road, the necessary mitigation measure is to re-stripe the northbound approach on Middlefield Road from one left turn

lane, two through lanes and one right turn lane to one left turn lane, one through lane, one shared through/right turn lane and one right turn lane.

With the mitigation measure, the intersection level of service remains LOS F during both the AM and the PM peak hours, with the delay for the most critical movement reduced to be less than under the 2035 plus Plan Components conditions. According to the 1601 Willow Road Development Agreement for the Facebook East Campus Project (FECPPDA), Facebook is responsible for implementing this necessary mitigation measure. Therefore, after applying the mitigation measure, the impact is *less than significant*.

Mitigation Measure TR-2i: At the intersection of Gilbert Avenue and Willow Road, the necessary mitigation measure is to add one exclusive eastbound right turn lane and a second westbound left turn lane on Willow Road and to add one additional receiving lane on Gilbert Avenue accordingly.

With the mitigation measure, the intersection level of service improves to LOS D during the AM peak hour, under the 2035 plus Plan Components conditions; and remains LOS E during the AM peak hour, with the delay for the most critical movement reduced to be less than under the 2035 plus Plan Components conditions. However, the improvements may not be feasible due to right-of-way constraints due to impacts to private property. Therefore, this impact remains *significant and unavoidable*.

Mitigation Measure TR-2j: At the intersection of Coleman Avenue and Willow Road, the necessary mitigation measure is to add one exclusive southbound left turn lane on Coleman Avenue and a second eastbound through lane on Willow Road and to add one receiving lane on Willow Road accordingly.

With the mitigation measure, the intersection level of service improves to LOS C during the AM peak hour and LOS D during the PM peak hour, under the 2035 plus Plan Components conditions. The installation of one exclusive southbound left turn lane on Coleman Avenue may be accomplished in the existing right-of-way by re-striping work, but it may require the removal of one or two parking spaces.

The other improvements to Willow Road do not appear feasible due to right-of-way constraints affecting private property. Although the restriping on Coleman would partially mitigate the impact, this impact remains *significant and unavoidable*.

Mitigation Measure TR-2k: At the intersection of Durham Street/VA Driveway and Willow Road, the necessary mitigation measure is to add one exclusive westbound right turn lane on Willow Road.

With the mitigation measure, the intersection level of service improves to LOS D during the PM peak hour, under the 2035 plus Plan Components conditions. The improvements does not appear feasible due to right-of-way constrains. Therefore, this impact remains *significant and unavoidable*.

It should be noted that the El Camino Real/Downtown Specific Plan project also suggests a mitigation measure for this intersection, which includes adding a southbound left turn at the VA Driveway. With this mitigation measure, the intersection still operates at LOS E during the PM peak hour, with the delay for the southbound left turn and the westbound through critical movements about 11 seconds higher than under the 2035 plus Plan Components conditions. However, the average delay for the intersection, as well as the delay of the critical movements, is all reduced by about 1 to 3 seconds, compared to without any mitigation measures under the 2035 plus Plan Components conditions. Therefore, this potential El Camino Real/Downtown Specific Plan mitigation measure could be considered as a partial mitigation measure.

Mitigation Measure TR-2l: At the intersection of Bay Road and Marsh Road, the necessary mitigation measure is to add one exclusive eastbound right turn lane on Marsh Road.

With the mitigation measure, the intersection level of service improves to LOS D during the AM peak hour, under the 2035 plus Plan Components conditions. However, the improvements are not feasible due to right-of-way constraints and would require the approval of the County of San Mateo and Town of Atherton. Therefore, this impact remains *significant and unavoidable*.

Mitigation Measure TR-2m: At the intersection of Bohannon Drive/Florence Street and Marsh Road, the necessary mitigation measure is to add one exclusive westbound right turn lane on Marsh Road.

With the mitigation measure, the intersection level of service improves to LOS D during the AM peak hour and LOS E during the PM peak hour, under the 2035 plus Plan Components conditions. Through the Development Agreement for the Menlo Gateway Project (MGDA), Bohannon Development Agreement is responsible for implementing the necessary mitigation measure. Therefore, after applying the mitigation measures, this impact is *less than significant*.

Mitigation Measure TR-2n: At the intersection of Scott Drive/Rolison Road and Marsh Road, with the necessary mitigation measures suggested for the Near-Term 2014 plus Plan Components conditions (Mitigation Measure TR-1d), the intersection level of service remains LOS E during the AM peak hour and LOS F during the PM peak hours, and the delay for the critical movement was reduced to be lower than under the 2035 plus Plan Components conditions during the PM peak hour; however, during the AM peak hour, the westbound left turn critical movement delay is 54 seconds higher than under the Cumulative conditions. Therefore, such mitigation measures could only be considered as partial mitigation.

Under the 2035 plus Plan Components condition, the necessary mitigation measure is to add one exclusive westbound right turn lane on Marsh Road.

With the mitigation measure, the intersection level of service improves to LOS D during the AM peak hour, under the 2035 plus Plan Components conditions; and remains LOS F during the PM peak hour, with the delay for the most critical movement reduced to be less than under the 2035 plus Plan Components conditions. The improvements may appear feasible in the existing right-of-way, but the intersection is under both City and Caltrans jurisdiction and coordination between the two jurisdictions would be required. As such, the City cannot guarantee implementation of the mitigation measure. Therefore, this impact remains *significant and unavoidable*.

Mitigation Measure TR-2o: At the intersection of I-280 NB Off Ramp/Sand Hill Circle and Sand Hill Road, the necessary mitigation measure is to add one exclusive westbound left turn lane and a third eastbound through lane on Sand Hill Road. In addition, one additional receiving lane is recommended to be added on Sand Hill Road accordingly.

With the mitigation measure, the intersection level of service improves to LOS C for the south part of the intersection of I-280 NB Off Ramp and Sand Hill Road, during the AM peak hour, under the 2035 plus Plan Components conditions; and remains LOS F for the north part of the intersection of Sand Hill Circle and Sand Hill Road during the PM peak hour, with the delay for the most critical movement reduced to be less than under the 2035 plus Plan Components conditions. However, the improvements may not be feasible due to right-of-way constraints and would require the approval of Caltrans. Therefore, this impact remains *significant and unavoidable*.

Mitigation Measure TR-2p: At the intersection of El Camino Real and Valparaiso Avenue/Glenwood Avenue, the necessary mitigation measure is to add one exclusive westbound right turn lane on Glenwood Avenue.

With the mitigation measure, the intersection level of service remains LOS E during the PM peak hour, with the delay for the most critical movement reduced to be less than under the 2035 plus Plan Components conditions. This intersection is included in the City's TIF program, and improvements could be constructed over time. However, the improvements may not be feasible in the short term due to right-of-way constraints. In addition, this intersection is under Caltrans jurisdiction. Therefore, this impact remains *significant and unavoidable*.

Mitigation Measure TR-2q: At the intersection of El Camino Real and Ravenswood Avenue/Menlo Avenue, the necessary mitigation measure is to add one exclusive eastbound right turn lane on Menlo Avenue.

With the mitigation measure, the intersection level of service improves to LOS E during the A.M peak hour, under the 2035 plus Plan Components conditions; and remains LOS F during the PM peak hour, with the delay for the most critical movement reduced to be less than under the 2035 plus Plan Components conditions. This intersection is included in the City's TIF program and improvements could be constructed over time. However, the improvements may not be feasible in the short term due to right-of-way constraints. In addition, this intersection is under Caltrans jurisdiction. Therefore, this impact remains *significant and unavoidable*.

Mitigation Measure TR-2r: At the intersection of El Camino Real and Middle Avenue, the necessary mitigation measure is to add one exclusive southbound right turn lane and a second northbound left turn lane on El Camino Real.

With the mitigation measure, the intersection level of service remains LOS F during the PM peak hour, with the delay for the most critical movement reduced to be less than under the 2035 plus Plan Components conditions. The City's TIF program includes this intersection and suggests the same intersection improvements. However, these improvements may not be feasible due to right-of-way constraints. In addition, this intersection is under Caltrans jurisdiction. Therefore, this impact remains *significant and unavoidable*.

Mitigation Measure TR-2s: At the intersection of Bay Road and Willow Road, the necessary mitigation measure is to re-stripe the southbound approach from one left turn lane and one right turn lane to one left turn lane and one shared left turn/right turn lane.

With the mitigation measure, the intersection level of service improves to LOS C during the AM peak hour, under the 2035 plus Plan Components conditions. However, since this intersection is under Caltrans jurisdiction, this impact remains *significant and unavoidable*.

Mitigation Measure TR-2t: At the intersection of Newbridge Street and Willow Road, the necessary mitigation measure is to re-stripe the southbound approach on Newbridge Street from one left turn lane, one through lane and one right-turn lane to one shared left turn/through lane, one shared through/right turn lane and one right turn lane, and to add one additional receiving lane on the south leg on Newbridge Street accordingly.

With the mitigation measure, the intersection remains LOS F during both the AM and PM peak hours, with the delay for the most critical movement reduced to be less than under the 2035 plus Plan Components conditions. However, the improvements may not be feasible due to right-of-way constraints on the south leg of the intersection, which would impact private property in East Palo Alto. In addition, this intersection is under Caltrans jurisdiction, and the City cannot guarantee implementation of the mitigation measure. Therefore, this impact remains *significant and unavoidable*.

It should be noted that FPDA also suggests a mitigation measure for this intersection, which includes an additional eastbound left-turn lane, an additional northbound receiving lane for the eastbound left turning traffic, an additional westbound through/right-turn lane, and an additional receiving lane for the westbound through traffic. With this mitigation measure, the intersection still operates at LOS F during both the AM and PM peak hours. The delay for the most critical movements are reduced to be less than under the 2035 plus Plan Components conditions during the PM peak hour; however, during the AM peak hour, the delay for the eastbound through critical movement was over 100 seconds higher than under the Cumulative condition even though the overall delay of the intersection was reduced. Therefore, this potential Facebook mitigation measure could be considered as a partial mitigation measure, under the 2035 plus Plan Components conditions.

Mitigation Measure TR-2u: At the intersection of Hamilton Avenue and Willow Road, the necessary mitigation measure is to add one exclusive southbound right turn lane on Hamilton Avenue and a second eastbound left turn lane on Willow Road and to add one receiving lane on Hamilton Avenue.

With the mitigation measure, the intersection level of service improves to LOS C during both the AM and PM peak hours, under the 2035 plus Plan Components conditions. The installation of one exclusive southbound right turn lane on Hamilton Avenue may be done by re-striping work, but it would require the removal of on-street parking spaces. Since the other improvements along Willow Road may not be feasible due to right-of-way constraints and the intersection is under Caltrans jurisdiction, this impact remains *significant and unavoidable*.

Mitigation Measure TR-2v: At the intersection of Bayfront Expressway and Willow Road, the necessary mitigation measure is to add a third right turn lane on Willow Road.

With the mitigation measure, the intersection still operates at LOS F, but the delay for the most critical movements are reduced to be less than under the 2035 plus Plan Components conditions. According to the FECPPDA, Facebook is responsible for implementing this mitigation measure. However, since this intersection is under Caltrans jurisdiction and the City cannot guarantee implementation of the mitigation measure, this impact remains *significant and unavoidable*.

Mitigation Measure TR-2w: At the intersection of Bayfront Expressway and Marsh Road, the necessary mitigation measure is to re-stripe the southbound approach on Bayfront Expressway from one shared left turn/through lane, one through lane and one right turn lane to one left turn/through lane, one through/right turn lane and one right turn lane and to add a third right turn lane for the eastbound approach on Marsh Road.

With the mitigation measure, the intersection level of service improves to LOS E during both the AM and PM peak hours, under the 2035 plus Plan Components conditions. However, this intersection is included in the City's TIF Program and the improvements to each approach may appear feasible in the existing right-of-way. Since the intersection is under Caltrans jurisdiction, the City cannot guarantee implementation of the mitigation measure. Therefore, this impact remains *significant and unavoidable*.

Mitigation Measure TR-2x: At the intersection of US 101 SB Ramps and Marsh Road, the necessary mitigation measure is to add one southbound shared left turn/right turn lane on US 101 SB ramp and one additional receiving lane on Marsh Road accordingly.

With both mitigation measures, the intersection level of service improves to LOS E during the AM peak hour and LOS D during the PM peak hour, under the 2035 plus Plan Components conditions. However, the improvements may not be feasible due to right-of-way requirements. In addition, this intersection is under Caltrans jurisdiction. Therefore, this impact remains *significant and unavoidable*.

Mitigation Measure TR-2y: At the intersection of US 101 NB Ramps and Marsh Road, the necessary mitigation measure is to widen the northbound off-ramp on the western side of the approach and add an additional left-turn lane along with adding a second right-turn lane by restriping one of the existing left-turn lanes. This improvement will require relocation of existing traffic signal poles, utility relocation, and reconstruction of the curb ramp on the southwest corner of the intersection.

This mitigation measure is suggested for the Near-Term 2014 plus Plan Components conditions (Mitigation Measure TR-1h), which according to the FECFDA, Facebook is responsible for implementing. With this mitigation measure, the intersection level of service remains LOS F during both the AM and PM peak hours, and the delay for the northbound left turn and the eastbound through critical movements is about 23 seconds and 14 seconds higher than under the Cumulative conditions, during the AM peak hour and PM peak hour, respectively. Therefore, such mitigation measures could only be considered as partial mitigation.

Under the 2035 plus Plan Components conditions, in addition to the mitigation measures suggested for the Near-Term 2014 plus Plan Components conditions, the additional necessary mitigation measure is to add a third eastbound through lane on Marsh Road and an additional receiving lane on Marsh Road would be necessary as well.

With the mitigation measure, the intersection level of service improves to LOS C during the AM peak hour and LOS B during the PM peak hour, under the 2035 plus Plan Components conditions. However, the improvements may not be feasible due to right-of-way requirements. In addition, this intersection is under Caltrans jurisdiction and the City cannot guarantee implementation of the mitigation measure. Therefore, this impact remains *significant and unavoidable*.

2. Roadway and Freeway Segments Near-Term 2014 Plus Plan Components Conditions

Impact TR-3: Roadway segment impacts under Near-Term 2014 plus Plan Components conditions would exceed City thresholds.

Mitigation Measure TR-3: The mitigation measures for roadway segment impacts under Near-Term 2014 plus Plan Components conditions would require reducing traffic volumes and improving quality of life and could include transportation demand management (TDM) measures. Such measures may include encouraging carpooling and vanpooling, promoting transit and bicycle/pedestrian mode shares, etc. Even though such TDM measures collectively have the potential to reduce added future development trip totals to less than significant levels, the City cannot guarantee that these measures may be implemented and may reduce the impacts to less than significant. Therefore, the impacts remain *significant and unavoidable*.

Impact TR-4: Freeway segment impacts under Near-Term 2014 plus Plan Components conditions would exceed City thresholds.

Mitigation Measure TR-4: The mitigation measure for freeway segments under Near-Term 2014 plus Plan Components conditions normally requires adding additional travel lanes and increasing the capacity of the roadway, to accommodate the additional trips generated by the Plan Components. However, widening roadways/adding additional travel lanes would require right-of-way and may not be feasible. In addition, SR 84 is under Caltrans jurisdiction. Therefore, this impact remains *significant and unavoidable*.

3. Roadway and Freeway Segments 2035 Plus Plan Components Conditions

Impact TR-5: Roadway segment impacts under 2035 Plus Plan Components conditions would exceed City thresholds.

Mitigation Measure TR-5: The mitigation measures for roadway segment impacts under 2035 Plus Plan Components conditions would require reducing traffic volumes and improving quality of life and could include TDM measures. Such measures may include encouraging carpooling and vanpooling, promoting transit and bicycle/pedestrian mode shares, etc. Even though such TDM measures collectively have the potential to reduce added project trip totals to less than significant levels, the City cannot guarantee that these measures may be implemented and may reduce the impacts to less than significant. Therefore, the impacts remain *significant and unavoidable*.

Impact TR-6: Freeway segment impacts under 2035 Plus Plan Components conditions would exceed City thresholds.

Mitigation Measure TR-6: The mitigation measure for freeway segments under 2035 Plus Plan Components conditions normally requires adding additional travel lanes and increasing the capacity of the roadway, to accommodate the additional trips generated by the Plan Components. However, widening roadways/adding additional travel lanes would require right-of-way and may not be feasible. In addition, SR 84 is under Caltrans jurisdiction. Therefore, this impact remains *significant and unavoidable*.

*CITY OF MENLO PARK
HOUSING ELEMENT UPDATE, GENERAL PLAN CONSISTENCY UPDATE,
AND ZONING ORDINANCE AMENDMENTS ENVIRONMENTAL ASSESSMENT
TRANSPORTATION AND TRAFFIC*

4.14 UTILITIES AND SERVICE SYSTEMS

This chapter describes the existing utilities and service systems in the EA Study Area and evaluates the potential environmental consequences of future development that could occur by adopting and implementing the proposed Housing Element Update, General Plan Consistency Update, and associated Zoning Ordinances amendments, together referred to as the “Plan Components.” Water supply, wastewater, stormwater, solid waste, and energy are each addressed in a separate section of this chapter. In each section, a summary of the relevant regulatory setting and existing conditions is followed by a discussion of project and cumulative impacts.

A. *Water*

This section outlines the regulatory setting, describes existing conditions, and discusses potential impacts of the Plan Components with regard to local water supply, treatment, and distribution.

1. **Regulatory Setting**

a. Federal and State Regulations

i. Federal Safe Drinking Water Act

The Safe Drinking Water Act authorizes the United States (U.S.) Environmental Protection Agency (EPA) to set national standards for drinking water, called the National Primary Drinking Water Regulations, to protect against both naturally-occurring and man-made contaminants. These standards set enforceable maximum contaminant levels in drinking water and require all water providers in the U.S. to treat water to remove contaminants, except for private wells serving fewer than 25 people. In California, the State Department of Health Services conducts most enforcement activities. If a water system does not meet standards, it is the water supplier’s responsibility to notify its customers.

ii. California Porter-Cologne Water Quality Control Act

Under the Porter-Cologne Water Quality Control Act (Porter-Cologne) of 1969, the State Water Resources Control Board (SWRCB) has the ultimate authority over State water rights and water quality policy. Porter-Cologne also establishes nine Regional Water Quality Control Boards (RWQCBs) to oversee water quality on a day-to-day basis at the local and regional level. The RWQCBs engage in a number of water quality

functions in their respective regions. The RWQCBs regulate all pollutant or nuisance discharges that may affect either surface water or groundwater.¹

iii. California Senate Bills 610 and 221

Senate Bill (SB) 610 and SB 221 amended State law to ensure better coordination between local water supply and land use decisions and ensure adequate water supply for new development. Both statutes require that detailed information regarding water availability be provided to City and County decision-makers prior to approval of large development projects. SB 610 requires water supply assessments (WSAs) for certain types of projects, as defined by Water Code Section 10912, which are subject to the California Environmental Quality Act (CEQA).² SB 221 establishes consultation and analysis requirements related to water supply planning for residential subdivisions including more than 500 dwelling units.³ A WSA was prepared for the Plan Components by GHD on March 20, 2013. The WSA considered 14 housing sites distributed throughout the City creating water demand for both the Menlo Park Municipal Water District (MPMWD) and the Cal Water's Bear Gulch District (Cal Water BGD). While the EA has been adjusted to reflect five potential housing sites and subsequently changed the overall number of units within each water district, the analysis presented in the WSA contemplated the overall same total of housing units. The WSA is included as Appendix D of this EA.

iv. California Urban Water Management Planning Act

Through the Urban Water Management Planning Act of 1983, the California Water Code requires all urban water suppliers within California to prepare and adopt an Urban Water Management Plan (UWMP) and update it every five years. This requirement applies to all suppliers providing water to more than 3,000 customers or supplying more than 3,000 acre-feet (AF)⁴ of water annually. This Act is intended to support conservation and efficient use of urban water supplies at the local level. This Act requires that total projected water use be compared to water supply sources over the next 20 years in 5-year increments, that planning

¹ California Wetlands Information System, *Summary of the Porter-Cologne Water Quality Control Act*, http://ceres.ca.gov/wetlands/permitting/Porter_summary.html, accessed on September 28, 2012.

² Bill Number: SB 610 Chartered, http://info.sen.ca.gov/pub/01-02/bill/sen/sb_0601-0650/sb_610_bill_20011009_chaptered.html, accessed on September 28, 2012.

³ Bill Number: SB 221, Bill Analysis, http://info.sen.ca.gov/pub/01-02/bill/sen/sb_0201-0250/sb_221_cfa_20010426_132334_sen_comm.html, accessed on September 28, 2012.

⁴ One acre-foot is the amount of water required to cover 1 acre of ground (43,560 square feet) to a depth of 1-foot.

occur for single and multiple dry water years, and that plans include a water recycling analysis that incorporates a description of the wastewater collection and treatment system within the agency's service area along with current and potential recycled water uses.⁵

v. *California Groundwater Management Act*

The Groundwater Management Act of the California Water Code (Assembly Bill [AB] 3030) provides guidance for applicable local agencies to develop voluntary Groundwater Management Plans (GMP) in State-designated groundwater basins. The GMPs can allow agencies to raise revenue to pay for measures influencing the management of the basin, including extraction, recharge, conveyance, facilities' maintenance, and water quality.⁶

vi. *The Water Conservation Act of 2009*⁷

Effective January 1, 2010, SB X7-7 requires the State to achieve 20 percent reduction in urban per capita water use by December 31, 2020. In addition, SB X7-7 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. The portion of SB X7-7 focused on urban water management establishes processes for urban water suppliers to meet the statewide water conservation targets. Further, SB X7-7 requires Department of Water Resources (DWR) review and reporting on urban water management plans; creates a Commercial-Industrial-Institutional (CII) Task Force to develop best management practices (BMPs) for water use in this sector; requires DWR to promote implementation of regional water resource management practices through increased incentives; and requires DWR in consultation with SWRCB to develop or update statewide targets for recycled water, brackish groundwater desalination, and urban stormwater runoff.

⁵ Department of Water Resources, *About Urban Water Management*, <http://www.water.ca.gov/urbanwatermanagement/>, accessed on September 28, 2012.

⁶ Department of Water Resources Planning and Local Assistance Central District, Groundwater, *Groundwater Management*, <http://www.cd.water.ca.gov/groundwater/gwab3030.cfm>, accessed on September 28, 2012.

⁷ Department of Water Resources, Senate Bill SBX7-7 2009 Information, <http://www.water.ca.gov/waterusefficiency/sb7/>, accessed on September 28, 2012.

*vii. State Updated Model Landscape Ordinance (Assembly Bill 1881, 2006)*⁸

The updated Model Landscape Ordinance requires cities and counties to adopt landscape water conservation ordinances by January 31, 2010 or to adopt a different ordinance that is at least as effective in conserving water as the updated Model Ordinance (MO). The City of Menlo Park adopted Ordinance No. 968, Water Efficient Landscaping Regulations, in 2010, and revised Municipal Code Chapter 12.44, which is described below.

b. Local Regulations

*i. Bay Area Water Supply and Conservation Agency*⁹

The Bay Area Water Supply and Conservation Agency (BAWSCA), created on May 27, 2003, represents 26 agencies that depend on the San Francisco Regional Water System (RWS). Two major water suppliers of Menlo Park, Menlo Park Municipal Water District (MPMWD) and California Water Services (Cal Water), are both members of BAWSCA. BAWSCA's roles include coordinating water conservation, water supply, and water recycling activities for its member agencies; acquiring water and making it available to other agencies on a wholesale basis; financing improvements to the RWS; and building facilities.

*ii. 2010 Urban Water Management Plan*¹⁰

MPMWD and Cal Water both adopted their 2010 UWMPs in June 2011 in accordance with the SB X7-7 and the Urban Water Management Planning Act, outlined in Section 10610 of Division 6 of the California Water Code. One of the purposes of the UWMPs is to identify measures to meet SB X7-7 requirements that mandate a 20-percent reduction of per capita water use and agricultural water use throughout the State by 2020. These UWMPs evaluate the water supply capacity and the projected water demands of the service area over a 20- or 25-year planning horizon. A range of water supply scenarios were modeled, including 1) normal, 2) single-dry, and 3) multiple-dry water year conditions. The UWMPs also provide action plans in the event of a catastrophic interruption in water supplies.

⁸ Department of Water Resources, Supply and Use, Updated Model Water Efficient Landscape Ordinance AB 1881, <http://www.water.ca.gov/wateruseefficiency/landscapeordinance/>, accessed on September 27, 2012.

⁹ *Water Supply Assessment for the City of Menlo Park Housing Element Update prepared by GHD in February 2013, page 3-9.*

¹⁰ City of Menlo Park, *2010 Urban Water Management Plan*, http://www.menlopark.org/departments/pwk/MP_2010_UWMP_Final.pdf, accessed September 28, 2012.

iii. Water System Improvement Plan¹¹

The San Francisco Public Utilities Commission (SFPUC) has started the Water System Improvement Program (WSIP), approved in October 2008, to meet goals for water quality, seismic reliability, delivery reliability, and water supply. The WSIP includes capital improvements to meet a total delivery reliability goal of 265 million gallons per day (MGD) of water supply with no greater than 20 percent rationing in any one year of a drought. As part of the WSIP, the SFPUC adopted a Phased WSIP Variant for water supply, which established a mid-term water supply planning milestone for 2018 when the SFPUC is scheduled to reevaluate water demands through 2030. The SFPUC also imposed the Interim Supply Limitation (ISL), which limits the volume of water that the member agencies and San Francisco can collectively purchase from the RWS to 265 MGD, until 2018. The WSIP Regional Projects Quarterly Report for the first quarter of 2012/13 indicated all planning activities had been completed, with environmental, design, and construction work at 92 percent, 96 percent, and 62 percent complete, respectively.

iv. City of Menlo Park Municipal Code

a) Chapter 7.38, Water Conservation¹²

Chapter 7.38 of the City's Municipal Code contains regulations and restrictions on water use in order to conserve water resources and eliminate wasteful water uses. Municipal Code Section 7.38.030 contains specific requirements, such as repairing broken plumbing, sprinkler, or irrigation systems; recycling water that was used for cooling; and prohibiting the use of a hose without a positive shut-off valve for washing cars, building structures, or hard-surface areas.

b) Chapter 12.44, Water Efficient Landscaping¹³

Chapter 12.44 of the City's Municipal Code establishes water-efficient landscaping standards to conserve water use on irrigation. The provisions of this chapter apply to landscaping projects that include irrigated landscape areas exceeding 2,500 square feet when these projects are associated with new water service, subdivision improvements, grading and drainage improvements, a new construction subject to a building permit, or building additions or modifications subject to grading and drainage plan approval.

¹¹ *Water Supply Assessment* for the City of Menlo Park Housing Element Update prepared by GHD in February 2013, page 3-2.

¹² City of Menlo Park, Municipal Code Chapter 7.38, Water Conservation, <http://www.codepublishing.com/CA/menlopark/>, accessed on September 27, 2012.

¹³ City of Menlo Park, Municipal Code Chapter 12.44, Water Efficient Landscaping, <http://www.codepublishing.com/CA/menlopark/>, accessed on September 27, 2012.

2. Existing Conditions

Potable water is supplied to the EA Study Area by one of four water utility companies: the MPMWD, Cal Water BGD, O'Connor Tract Coop Water District, and Palo Alto Park Mutual Water Company, as shown in Figure 4.14-1.

The WSA assumes that all potential units under the Plan Components would be served by either MPMWD or Cal Water BGD, and therefore this section does not include O'Connor Tract Coop Water District and Palo Alto Park Mutual Water Company in the discussion. Specifically, the MPMWD provides service to potential housing Sites 1, 2, 3, 4, and 5 (894 units) and 115 second dwelling units, while Cal Water BGD serves the 118 infill housing units around the downtown area and 185 second dwelling units. Accordingly, this section summarizes the existing conditions and projected water supplies and demands for MPMWD and Cal Water BGD, based on the WSA prepared for the Plan Components in March 2013.

a. Menlo Park Municipal Water District

The MPMWD serves approximately 14,200 customers in the EA Study Area, approximately 40 percent of the City's population within the following four zones:¹⁴

1. The Lower Zone is located north and east of El Camino Real and includes the Belle Haven, Bay Road, and Willows neighborhoods.
2. The High Pressure Zone is located in northern Menlo Park between Highway 101 and the Bayfront Expressway and includes the Bohannon Industrial Park and Tyco Properties.
3. The Upper Pressure Zone is located in western Menlo Park and is geographically and hydraulically disconnected from other zones. It serves primarily the residential Sharon Heights neighborhood, the Sharon Heights Golf Course, and the Stanford Linear Accelerator.
4. The Menlo Business Park zone is located along O'Brien Drive between Willow Road and University Avenue.

¹⁴ *Water Supply Assessment for the City of Menlo Park Housing Element Update prepared by GHD in February 2013, pages 2-3 and 2-1.*

In its 2010 UWMP, MPMWD's demand projections assumed very modest residential growth and strong growth in the Commercial-Industrial-Institutional (CII) sectors. The residential growth contemplated by the Plan Components was not specifically accounted for in MPMWD's 2010 UWMP.¹⁵

The MPMWD distribution system consists of 59 miles of water mains, 4,500 metered connections, two reservoirs, and one pump station. The MPMWD also maintains fire hydrants, backflow prevention devices, flushing points, and service connections to SFPUC.¹⁶

b. Cal Water Bear Gulch District

Cal Water BGD serves approximately 57,300 customers in several Peninsula communities, including the communities of Atherton, Portola Valley, Woodside, unincorporated portions of San Mateo County, and parts of Menlo Park. The WSA estimates that Cal Water BGD serves approximately 16,600 customers in the EA Study Area. In its 2010 UWMP, Cal Water BGD projected that population in its service area would grow from 57,254 persons in 2010 to 64,573 in 2035 with an annual growth rate of 0.51 percent per year, which is slightly higher than the growth rate used in the City's UWMP.¹⁷ Cal Water BGD distribution system consists of 33 pressure zones, 57 booster pumps, 25 storage tanks and reservoirs, 1,865 hydrants, and 300 miles of main. Cal Water BGD water tanks provide storage for slightly more than 10 million gallons of potable water.¹⁸

c. Water Supply

The major water supply source for both the MPMWD and the Cal Water BGD is the San Francisco RWS, operated by the SFPUC, under the "Water Supply Agreement between the City and County of San Francisco and Wholesale Customers in Alameda County, San Mateo County, and Santa Clara County," which was developed in July 2009. The RWS is predominantly from the Sierra Nevada, delivered through the Hetch-Hetchy aqueducts, but also includes treated water produced by the SFPUC from its local watersheds and facilities in Alameda and San Mateo Counties. The SFPUC has provided a projection of water supply

¹⁵ *Water Supply Assessment* for the City of Menlo Park Housing Element Update prepared by GHD in February 2013, page 2-3.

¹⁶ City of Menlo Park, 2011. Menlo Park Facebook Campus Project Draft EIR, page 3.16-10.

¹⁷ *Water Supply Assessment* for the City of Menlo Park Housing Element Update prepared by GHD in February 2013, pages 2-1 and 2-3.

¹⁸ BAWSCA Annual Survey – FY 2006-07, http://bawsc.org/docs/0607_AP_CalWater_BG.pdf, accessed on January 4, 2013.

reliability: a 10 percent system-wide reduction in supply in a single dry year and a 20 percent system-wide reduction in multiple dry years.

Table 4.14-1 shows the MPMWD and Cal Water BGD water supply projections in normal, single dry, and multiple dry years. The MPMWD's Individual Supply Guarantee (ISG) is 4.465 MGD (4,993 acre-feet per year [AFY]), and Cal Water's ISG is 35.68 MGD (39,967 AFY). The Cal Water BGD would receive between 11.45 and 12.85 MGD or about one third of the total ISG. In addition, the Cal Water BGD sources surface water from the Bear Gulch Creek at approximately 1,260 AFY in a normal year, 351 AFY in a single dry year, and 609 AFY in a multiple dry year. The MPMWD does not have an additional water source, but is evaluating several well sites that could produce up to 3,000 gallons per minute (GPM) in order to supplement its emergency potable and fire water supply. This groundwater supply is not included in the water supply projections in Table 4.14-1.

d. Water Demand

The WSA prepared for the Plan Components assumes that the population in the City's service area would increase by 6,800 from 2010 to 2035 based on projections from the Association of Bay Area Governments (ABAG). These projections equate to an annual growth rate of 0.8 percent, which is higher than the projections in the MPMWD and Cal Water BGD's UWMPs (i.e. .42 and .51 percent, respectively). This difference reflects some of the growth anticipated by the ABAG and the Plan Components that was not included in either of the UWMPs projections.¹⁹ The WSA assumes the multi-family demand factor of 0.1255 AFY (112 gallons per day per dwelling unit) for the Plan Components based on the City's recent El Camino Real/Downtown Specific Plan Environmental Impact Report (EIR).²⁰ The WSA also developed two implementation scenarios based on 14 potential housing sites in order to bracket the water supply implications. In this EA, Scenario 1 is presented based upon the five sites of the Plan Components. This scenario has the maximum impact on the MPMWD's water service area. It assumes 1,015 new units (127 AFY) in the MPMWD service area, which comprise 77 percent of the total potential units under the Plan Components (1,318 units). The 1,015 potential housing units include 900 units as a result of rezoning and 115 second units. The remaining 303 units (38 AFY) required to fully implement the Plan Components would be located in the Cal Water BGD's service Area.

¹⁹ *Water Supply Assessment* for the City of Menlo Park Housing Element Update prepared by GHD in March 2013, page 2-3.

²⁰ *Water Supply Assessment* for the City of Menlo Park Housing Element Update prepared by GHD in March 2013, page 4-3.

CITY OF MENLO PARK
HOUSING ELEMENT UPDATE, GENERAL PLAN CONSISTENCY UPDATE,
AND ZONING ORDINANCE AMENDMENTS ENVIRONMENTAL ASSESSMENT
UTILITIES AND SERVICE SYSTEMS

TABLE 4.14-1 WATER SUPPLY AND DEMAND COMPARISON (AFY)

	2015	2020	2025	2030	2035
MPMWD (with Plan Components)					
Demand Total	3,821	3,487	3,564	3,645	3,727
Normal Year Supply Total	4,993	4,993	4,993	4,993	4,993
<i>Difference (supply minus demand)</i>	<i>1,172</i>	<i>1,506</i>	<i>1,429</i>	<i>1,348</i>	<i>1,266</i>
Single Year Supply Total	4,141	4,141	4,141	4,141	4,141
<i>Difference (supply minus demand)</i>	<i>320</i>	<i>654</i>	<i>577</i>	<i>496</i>	<i>414</i>
Multiple Year (Second Year) Supply Total	3,596	3,596	3,596	3,596	3,596
<i>Difference (supply minus demand)</i>	<i>(226)</i>	<i>108</i>	<i>32</i>	<i>(50)</i>	<i>(132)</i>
Multiple Year (Third Year) Supply Total	3,596	3,596	3,596	3,596	3,596
<i>Difference (supply minus demand)</i>	<i>(226)</i>	<i>108</i>	<i>32</i>	<i>(50)</i>	<i>(132)</i>
Bear Gulch District (with Plan Components)					
Normal Year Demand Total	42,047	39,900	41,046	42,225	43,530
Normal Year Supply Total	42,762	42,762	42,762	42,762	42,762
<i>Difference (supply minus demand)</i>	<i>715</i>	<i>2,862</i>	<i>1,716</i>	<i>537</i>	<i>(768)</i>
Single Year Demand Total	41,746	39,540	40,675	41,817	43,134
Single Year Supply Total	35,059	35,059	35,059	35,059	35,059
<i>Difference (supply minus demand)</i>	<i>(6,687)</i>	<i>(4,481)</i>	<i>(5,616)</i>	<i>(6,758)</i>	<i>(8,075)</i>
Multiple Year (Second Year) Demand Total	36,439	35,077	36,091	37,160	38,287
Multiple Year (Second Year) Supply Total	28,522	28,522	28,522	28,522	28,522
<i>Difference (supply minus demand)</i>	<i>(7,917)</i>	<i>(6,555)</i>	<i>(7,569)</i>	<i>(8,638)</i>	<i>(9,765)</i>
Multiple Year (Third Year) Demand Total	35,404	34,548	35,552	36,610	37,762

	2015	2020	2025	2030	2035
Multiple Year (Third Year) Supply Total	28,522	28,522	28,522	28,522	28,522
<i>Difference (supply minus demand)</i>	<i>(6,882)</i>	<i>(6,026)</i>	<i>(7,030)</i>	<i>(8,088)</i>	<i>(9,240)</i>

Note: The growth anticipated by the Plan Components within Cal Water BGD's service area falls within the demand projection allowance made in Cal Water's 2010 UWMP under both Scenarios 1 and 2, and therefore this table summarizes the analysis developed for Cal Water's 2010 UWMP. For the same reason, the table does not provide a scenario-based analysis.

Source: *Water Supply Assessment* for the City of Menlo Park Housing Element Update prepared by GHD in March, 2013.

The scenario assumes buildout of the potential housing Site 4 (Hamilton Avenue) and Site 5 (Haven Avenue) by 2015. This would add 756 units to the MPMWD service area by 2015. The remaining housing units are assumed to develop at a constant rate between 2015 and 2035. The scenario assumes that the new demands on these two sites are "offset" to some extent by the existing water uses that will be replaced. Housing Site 4 (Hamilton Avenue) has an existing demand of 1.0 AFY which would help offset the Plan Components demands of 27.1 AFY.²¹ Housing Site 5 (Haven Avenue) has an existing demand of 8.2 AFY which would help offset the total Plan Components demands of 58.2 AFY.²² Because the pattern of the remaining development under the Plan Components cannot be accurately predicted, no other "offsets" are included in the demand calculations, which results in a conservative prediction of demand.

e. Water Supply and Demand Comparison

i. MPMWD

The demands associated with the Plan Components were not taken into account in the demand projection allowance made in MPMWD's 2010 UWMP. However, there is sufficient water available to meet the Plan Component-associated demands until the year 2035 under the normal and single dry year conditions, as shown in Table 4.14-1. There could be a water shortage of up to six percent (or 226 AFY) until the year 2015 in the second and third dry years when the Plan Components are taken into account. This represents a two percent increase compared to a four percent shortage (or 149 AFY) without the Plan Components. After that point, demand management per SB X7-7 would ensure that demands do not exceed supply until after 2025. By 2035 in the multiple dry year scenarios, there may be a water shortage of up to four percent

²¹ Hamilton Ave East demand is calculated as 0.1255 AFY/unit x 216 units = 27.1 AFY total.

²² Haven demand is calculated 0.1255 AFY/unit x 464 units = 58.2 AFY total.

(or 132 AFY), which is a three percent increase compared to one percent (35 AFY) without the Plan Components.

The MPMWD has prepared a Drought Contingency Plan, which contains measures that will reduce demands by up to 50 percent in the case of drought or emergency. MPMWD would implement its Drought Contingency Plan to manage the shortages in multiple dry years if necessary.

ii. Cal Water BGD

The growth anticipated by the Plan Components within the Cal Water BGD was not specifically taken into account in the demand projection allowance made in its 2010 UWMP. However, the Cal Water BGD's growth rate of 0.51 percent is slightly higher than the growth rate applied to the City's UWMP. As a result, the WSA expects that demand projection allowance made in the 2010 UWMP would be sufficient to accommodate the Plan Components. As shown in Table 4.14-1, there is sufficient water available to meet the Plan Component-associated demands until the year 2030, although very modest shortages are predicted in 2035.

There would be supply shortfalls in single and multiple dry years. However, Cal Water indicated that the shortfalls will be managed through the implementation of the development of alternative supplies and its Water Shortage Contingency Plan, which allows Cal Water to implement measures that reduce demand up to 50 percent.

3. Standards of Significance

The Plan Components would have a significant impact on water service if they would:

- a. Require or result in the construction of new water treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.
- b. Have insufficient water supplies available to serve the project from existing entitlements and resources, thereby requiring new or expanded entitlements.

4. Impact Discussion

- a. Require or result in the construction of new water treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

As discussed in Section A.4.b below and shown in Table 4.14-1, the water demand associated with the Plan Components would be served by MPWMD and Cal Water BGD within available water supplies that are planned in their 2010 UWMPs under normal year conditions. In addition, water shortages under multiple

year conditions would be managed through demand reductions of up to 50 percent. Consequently, implementation of the Plan Components would not require an additional water supply, and therefore the construction or expansion of water treatment facilities, over and above what is currently planned in the WSIP, would be unnecessary.

All development under the Plan Components would connect to an existing water distribution system, and as such the Plan Components would not require expansion of existing facilities. Installation of the water lines would occur as part of the finish grading and road layout phases of construction at the individual developer's expense.²³ Additionally, the following current General Plan program would ensure that impacts to water treatment facilities would be adequately addressed.

i. Current General Plan Land Use and Circulation Element

- “ Program I-3: The City will develop and periodically update a five-year Capital Improvement Program. Such program shall include, among others, improvements for transportation, water supply, and drainage.

In conclusion, the Plan Components would not require the construction of new facilities or the expansion of existing facilities that could result in significant environmental impacts. As a result, the impact of the Plan Components on water treatment facilities would be *less than significant*.

- b. Have insufficient water supplies available to serve the project from existing entitlements and resources, thereby requiring new or expanded entitlements.

i. MPMWD

As described above, the Plan Components would add between 90 and 122 AFY in multifamily residential demand. This is more than was described in the City's 2010 UWMP, but as shown in Table 4.14-1 above, MPMWD's water supply is adequate to meet the increased demands in normal and single dry years through the year 2035. As noted above, when the Plan Components are taken into account, there could be a water shortage of up to six percent (or 226 AFY) until the year 2015 in the second and third dry years, compared to four percent (or 149 AFY) without the Plan Components. After that point, demand managements per

²³ Virginia Parks, Associate Engineer, City of Menlo Park Public Works. Personal communication with The Planning Center | DC&E, December 13, 2012.

SB X7-7 ensure that demands do not exceed supply until after 2025. By 2035 in the multiple dry year scenarios, there may be a water shortage of up to four percent (or 136 AFY), which is a three percent increase compared to one percent (35 AFY) without the Plan Components. In sum, water supply would be adequate to meet demands in the first multiple dry year, but in the second and third dry years MPMWD could experience water shortages. However, with MPMWD's Drought Contingency Plan in place, the shortages in multiple dry years would be managed through demand reductions of up to 50 percent.

ii. Cal Water

As described above, the Plan Components would add between 34 and 66 AFY to the Cal Water BGD service area. According to the WSA, given per capita demand reductions, this increase is considered to be well within the projected growth. As shown in Table 4.14-1, there would be sufficient water available to meet demands through the year 2035 under normal circumstances. In the single and multiple dry years, shortages are projected both with and without the Plan Components. However, like MPMWD, Cal Water BGD has adopted its Water Shortage Contingency Plan and its measures, which have proved sufficient to reduce system-wide water demands in times of water shortages by 50 percent.

In addition, developments under the Plan Components would be required to comply with mandatory regulations set forth in the California Model Water Efficient Landscape Ordinance and the City's Water Conservation Codes to reduce irrigation and wasteful water use.

Furthermore, the following amended General Plan policies and program would ensure that impacts to water supply would be addressed.

a) Current General Plan Land Use and Circulation Element

- “ 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.
- “ Policy I-H-4: The efforts of the Bay Area Water Users Association to secure adequate water supplies for the Peninsula shall be supported to the extent that these efforts are in conformance with other City policies.

- “ Policy I-H-5: New wells and reservoirs may be developed by the City to supplement existing water supplies for Menlo Park during emergency and drought periods. Other sources, such as interconnections and purchase agreements with water purveyors, shall be explored and developed.
- “ Policy I-H-6: The City shall work with other regional and subregional jurisdictions and agencies responsible for ground water extraction to attempt to develop a comprehensive underground water protection program which includes the monitoring of all wells in the basin to evaluate the long term effects of water extraction. In addition, the City shall consider instituting appropriate controls within Menlo Park on the installation of new wells and on the pumping from both existing and new wells so as to prevent: ground subsidence, further salinity intrusion into the shallow aquifers, particularly in the bay-front area, and contamination of the deeper aquifers that may result from changes in the ground water level.
- “ Policy I-H-7: When possible the use of on-site reclaimed water for landscaping and any other feasible uses shall be encouraged.
- “ Program I-3: The City will develop and periodically update a five-year Capital Improvement Program. Such program shall include, among others, improvements for transportation, water supply, and drainage.

Therefore, with implementation of the General Plan the future development under the Plan Components would result in a *less-than-significant* impact on water supplies.

c. Cumulative Impacts

The geographic scope of this cumulative analysis is taken as the MPMWD and Cal Water service areas. As described above, the RWS operated by the SFPUC is the primary water source for the MPMWD and Cal Water BGD. MPMWD has sufficient Individual Supply Guarantee (ISG) to meet existing and projected demand within its service area through 2035. Cal Water BGD utilizes surface water in addition to its ISG to meet existing and projected demand within its service area through 2035. While the Plan Components would contribute to an increased cumulative demand for water supply, the increased demand would not exceed the long-term supply under normal circumstances, as discussed above. In the single and multiple dry years, shortages are projected, but with MPMWD and Cal Water BGD’s Drought Contingency Plans in place, the shortages in multiple dry years would be managed through demand reductions of up to 50 percent.

In terms of water infrastructure, the SFPUC has implemented its WSIP to meet its total delivery goal of 265 MGD of water supply. Because cumulative water demands would not require an additional water supply, the construction or expansion of water treatment facilities, over and above what is currently planned in the WSIP, would be unnecessary.

Overall, when considered along with the future development under the Plan Components, cumulative water demands would neither exceed planned levels of supply nor require building new water treatment facilities or expanding existing facilities. Therefore, the cumulative impact would be *less than significant*.

5. Impacts and Mitigation Measures

The Plan Components would not result in any significant water supply impacts; therefore, no mitigation measures are necessary.

B. Wastewater

This section describes the existing conditions and potential impacts of the Plan Components with regard to wastewater collection and treatment facilities.

1. Regulatory Setting

a. Federal Regulations

The federal government regulates wastewater treatment and planning through the Federal Water Pollution Control Act of 1972, more commonly known as the Clean Water Act (CWA), as well as through the National Pollutant Discharge Elimination System (NPDES) permit program, both of which are discussed in further detail below.

i. Clean Water Act (CWA)

The CWA regulates the discharge of pollutants into watersheds throughout the nation. Under the CWA, the U.S. EPA implements pollution control programs and sets wastewater standards.

ii. National Pollutant Discharge Elimination System

The NPDES permit program was established in the CWA to regulate municipal and industrial discharges to surface waters of the U.S. Federal NPDES permit regulations have been established for broad categories of discharges, including point-source municipal waste discharges and nonpoint-source stormwater runoff. NPDES permits generally identify effluent and receiving water limits on allowable concentrations and/or

mass emissions of pollutants contained in the discharge; prohibitions on discharges not specifically allowed under the permit; and provisions that describe required actions by the discharger, including industrial pretreatment, pollution prevention, self-monitoring, and other activities.

Wastewater discharge is regulated under the NPDES permit program for direct discharges into receiving waters and by the National Pretreatment Program for indirect discharges to a wastewater treatment plant (WWTP).

b. State Regulations and Agencies

Wastewater treatment and planning is regulated at the State level. Specific regulations relevant to the Plan Components are described below.

i. *State Water Resources Control Board (SWRCB)*

On May 2, 2006 the SWRCB adopted a General Waste Discharge Requirement (Order No. 2006-0003) for all publicly owned sanitary sewer collection systems in California with more than 1 mile of sewer pipe. The order provides a consistent statewide approach to reducing sanitary sewer overflows (SSOs) by requiring public sewer system operators to take all feasible steps to control the volume of waste discharged into the system, to prevent sanitary sewer waste from entering the storm sewer system, and to develop a Sewer System Management Plan (SSMP). The General Waste Discharge Requirement also requires that storm sewer overflows be reported to the SWRCB using an online reporting system. The current WWTP in Redwood Shores, operated by the SBSA, is regulated by discharge requirements stated in Order No. R2-2012-0062.²⁴ Since this Permit will expire in September 2017, the SBSA will be required to apply for re-issuance of waste discharge requirements no later than April 3, 2017. The WWTP's discharge is also regulated under Order No. R2-2007-0077 (NPDES Permit No. CA0038849), as amended by Order No. R2-2011-0012, which supersedes all requirements on mercury and polychlorinated biphenyls (PCBs) from wastewater discharges in the region.²⁵

The San Francisco Bay RWQCB is the local division of the SWRCB. The San Francisco Bay RWQCB issues NPDES permits in the EA Study Area. NPDES permits allow the RWQCB to collect information on

²⁴ California Regional Water Quality Control Board, http://www.waterboards.ca.gov/sanfranciscobay/board_decisions/adopted_orders/2012/R2-2012-0062.pdf, accessed on January 17, 2013.

²⁵ California Regional Water Quality Control Board, http://www.waterboards.ca.gov/sanfranciscobay/board_decisions/adopted_orders/2012/R2-2012-0062.pdf, accessed on January 17, 2013.

where the waste is disposed, what type of waste is being disposed, and what entity is depositing the wastes. The RWQCB is also charged with conducting inspections of permitted discharges and monitoring permit compliance.

c. Local Regulations

i. *South Bayside Systems Authority Planning Documents*²⁶

The South Bayside Systems Authority (SBSA) has initiated a \$339 million 10-year Capital Improvement Program (CIP) in 2008 to improve the reliability and efficiency of its regional wastewater system and facilities through repair, replacement, and improvements to existing infrastructure. SBSA's expansion program, referred to as Stage 2, is contained under a separate program and is intended to bring the SBSA WWTP capacity to 29 MGD dry weather capacity and 80 MGD wet weather capacity as needed. The recently completed SBSA Conveyance System Master Planning study includes facilities expansion planning based on growth projections provided by member agencies derived from General Plans and/or master planning documents.

ii. *West Bay Sanitary District Collection System Master Plan*

The West Bay Sanitary District updated its Wastewater Collection System Master Plan in July 2011. The 2011 Master Plan assesses the conveyance capacity of the WBSD's sewer collection system pipes and pump stations, evaluates facilities that may require rehabilitation or replacement, develops a prioritized CIP, and establishes a funding plan for the proposed CIP. The CIPs are planned to be implemented over the next ten years.

iii. *West Bay Sanitary District Code of General Regulations*

The WBSD's Code of General Regulations establishes standards, conditions, and provisions for fees relating to the use of sanitary wastewater facilities of the WBSD. Article VII requires Class 1 sewer permits for residential connections, Class 2 sewer permits for non-residential connections, and Class 3 sewer permits for construction of sewer mains, pumping stations, and other wastewater facilities. In order to receive a permit, a developer must submit an application, pay all fees and charges, and satisfy requirements, such as extending the collection facilities to the vicinity of the development site. For a Class 3 permit, the WBSD Manager examines the submitted application's conformance with engineering practices and the standard specifications and policies of the WBSD and then submits it to the WBSD Board of Directors for approval. Subsequent to

²⁶ South Bayside Systems Authority, Teresa Herrera, personal correspondence with The Planning Center | DC&E, January 21, 2013.

the WBSD's acceptance of a Class 3 permit, but prior to connection of and discharge into the WBSD's wastewater facilities, a Class 1 or Class 2 permit, as applicable, must be obtained by the developer. All costs and expenses associated with the installation and connection of the building sewer shall be at the owner's expense. All work shall be performed under the inspection of, and in accordance with, the standard specifications of WBSD.

2. Existing Conditions

The WBSD provides wastewater collection and conveyance services to Menlo Park, Atherton, Portola Valley, and areas of East Palo Alto, Woodside, and unincorporated San Mateo and Santa Clara counties. The WBSD's collected wastewater is treated by SBSA, which is the Joint Powers Authority that owns and operates a regional WWTP in Redwood Shores. The SBSA also operates the pump stations that are located at the terminus of each member's collection system. The Joint Powers Authority members include WBSD and the cities of Redwood City, San Carlos, and Belmont.

The WBSD service area encompasses approximately 8,325 acres and includes approximately 20,000 service connections to serve a population of 52,900.²⁷ The WBSD conveys raw wastewater to SBSA for treatment through the Menlo Park Pump Station and force main.²⁸ The SBSA then discharges treated water to the San Francisco Bay.²⁹

a. Wastewater Collection

The WBSD operates and maintains approximately 200 miles of gravity sewer mains in size from 8 to 54 inches in diameter.³⁰ The system services over 19,000 connections, including residential, commercial, and industrial users, and contains 150 miles of private lateral sewers.³¹

The WBSD owns and operates 12 pump stations ranging in capacity from 110 to 2,500 gallons per minute (GPM).³² As a precaution, pump stations have redundant pumping equipment and standby generators, and the WBSD has additional emergency standby generators and bypass pumps as part of its mobile emergency

²⁷ West Bay Sanitary District, 2011. *Wastewater Collection System Master Plan*, prepared by West Yost Associates.

²⁸ West Bay Sanitary District, About Us, <http://www.westbaysanitary.org/>, accessed December 6, 2012.

²⁹ South Bayside Systems Authority, About Us, <http://www.sbsa.org/about-us/>, accessed December 31, 2012.

³⁰ West Bay Sanitary District, 2011. *Wastewater Collection System Master Plan*, prepared by West Yost Associates.

³¹ West Bay Sanitary District, 2011. *Wastewater Collection System Master Plan*, prepared by West Yost Associates.

³² West Bay Sanitary District, 2011. *Wastewater Collection System Master Plan*, prepared by West Yost Associates.

response equipment.³³ The average age of components in WBSD's collection system is 50 years, with a current expected life span of approximately 90 years.³⁴

The WBSD's system flows from south to north and terminates at the Menlo Park Pump Station, which is owned by the WBSD, operated by SBSA, and located at Bayfront Park near the San Francisco Bay. The Menlo Park Pump Station conveys wastewater via main line trunk to SBSA's WWTP.³⁵

b. Wastewater Treatment

The SBSA WWTP treats raw wastewater from Menlo Park and other communities and discharges to the deep water channel of the San Francisco Bay.³⁶ The WWTP is designed to remove more than 97 percent of all solids, organic material, and pathogens from the wastewater through physical and biological processes.³⁷

The SBSA's WWTP has an existing dry weather capacity of 27 MGD and wet weather capacity of 71 MGD. On average in year 2009, the WWTP treated 15 MGD in dry weather and 62 MGD in wet weather. Under its Stage 2 Expansion Program, the SBSA will increase WWTP capacity to 29 MGD dry weather capacity and 80 MGD wet weather capacity as needed.³⁸ The improvements under the CIP are intended to accommodate regional development to year 2030.³⁹

During the dry season, SBSA further treats some of the WWTP flow with coagulation and additional disinfection for use as recycled water for landscape irrigation in the SBSA service area.

³³ West Bay Sanitary District, About Us, <http://www.westbaysanitary.org/education/what-we-do>, accessed October 22, 2012.

³⁴ State Water Resources Control Board, *Order No. 2010-0014-DWQ*, http://www.waterboards.ca.gov/water_issues/programs/stormwater/docs/constpermits/wqo_2009_0009_factsheet.pdf, accessed on September 28, 2012.

³⁵ West Bay Sanitary District, 2011. *Wastewater Collection System Master Plan*, prepared by West Yost Associates.

³⁶ South Bayside Systems Authority, About Us, <http://www.sbsa.org/about-us/>, accessed December 31, 2012.

³⁷ South Bayside Systems Authority, About Us, <http://www.sbsa.org/about-us/>, accessed December 31, 2012.

³⁸ South Bayside Systems Authority, Teresa Herrera, personal correspondence with The Planning Center | DC&E, January 21, 2013.

³⁹ South Bayside Systems Authority, 10-Year Capital Improvements Plan, Press Release, http://www.sbsa.org/storage/assets/CIP_Press_Release5-9-08.pdf.

c. Other Facilities

The WBSD owns four storage basins, named the Flow Equalization Facility (FEF), in approximately 20 acres of land at the northern terminus of Marsh Road in Menlo Park. The two basins closest to the Menlo Park Pump Station are currently used to provide wet weather storage for the WBSD. The WBSD's primary wet weather storage facility, Pond 1, has an estimated capacity of less than 10 million gallons. This land and these basins were part of the WBSD's wastewater treatment facilities, prior to the forming of the SBSA in 1980.⁴⁰

The WBSD and SBSA have an agreement that allows SBSA to use the FEF during wet weather events and to reimburse on an annual basis. When needed, SBSA requests that the WBSD bypass the Menlo Park Pump Station and flow directly to the FEF. When SBSA system-wide flows have decreased after the wet weather event, the WBSD-owned transfer pump station returns stored flow back to the Menlo Park Pump Station. This transfer pump station, which is operated by SBSA, has a capacity of 8,660 GPM.⁴¹

3. Standards of Significance

The Plan Components would have a significant impact on wastewater service if they would:

- a. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board.
- b. Require or result in the construction of new wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.
- c. 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.

4. Impact Discussion

- a. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board. Sanitary wastewater treatment requirements are established in the NPDES Permit issued by the San Francisco Bay RWQCB, which currently allows for the expansion to 29 MGD of average dry weather flow.⁴² Based on its demand projection, the SBSA does not anticipate that this expansion would be required before

⁴⁰ West Bay Sanitary District, 2011. *Wastewater Collection System Master Plan*, prepared by West Yost Associates.

⁴¹ West Bay Sanitary District, 2011. *Wastewater Collection System Master Plan*, prepared by West Yost Associates.

⁴² South Bayside Systems Authority, Teresa Herrera, personal correspondence with The Planning Center | DC&E, January 21, 2013.

the year 2030.⁴³ The NPDES Permit also sets out a framework for compliance and enforcement. As the discharger named in the NPDES Permit (Order No. R2-2012-0062), the SBSA implements and enforces a pretreatment program for effluent discharged into San Francisco Bay. SBSA proposes its WWTP upgrade through its Stage 2 Program, and the upgrade is expected to comply with RWQCB requirements as well as State standards. Additionally, as discussed below, the projected wastewater generated from potential future development under the Plan Components would not exceed the SBSA WWTP's capacity. Therefore, there would be a *less-than-significant* impact to exceeding the wastewater treatment requirements from implementation of the Plan Components.

b. Require or result in the construction of new wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

Based on the WBSD's wastewater generation rate of 220 GPD per unit for single-family residential uses,⁴⁴ future development under the Plan Components could generate up to 289,960 gallons of wastewater per day (or approximately 0.29 MGD). Added to existing average demand of 15 MGD, this demand would not exceed the SBSA WWTP's existing capacity of 27 MGD nor planned capacity of 29 MGD average dry weather flow. In addition, the implementation of General Plan Policy I-H-8, which states the expansion and improvement of sewage treatment facilities to meet the needs of Menlo Park and to meet regional water quality standards shall be supported to the extent that such expansion and improvement are in conformance with other City policies, would ensure that impacts to wastewater treatment would be addressed.

Overall, because future development under the Plan Components would not substantially reduce the capacity of the wastewater treatment system, and because the facilities will be expanded to accommodate future growth in the service areas as needed, the future development under the Plan Components would not require the construction of new wastewater treatment facilities and therefore would have a *less-than-significant* impact on wastewater treatment service.

⁴³ South Bayside Systems Authority, Teresa Herrera. Personal correspondence with The Planning Center | DC&E, January 21, 2013.

⁴⁴ West Bay Sanitary District, Wastewater Collection System Master Plan, page 3-2, and City of Menlo Park, 2012. *389 El Camino Real Project Environmental Impact Report*, page 167. The WBSD has not set up a generation rate for multi-family homes. For planning purposes, this EA uses the generation rates for single-family homes, which is likely higher than those for multi-family homes. The 389 El Camino Real Project EIR also assumed the same rates to calculate wastewater flow from its multi-family residential uses.

- c. 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.

As discussed below in detail, buildout under the Plan Components would not require expansion of the SBSA's WWTP beyond what has been planned in the Stage 2 Program.

Future development under the Plan Components would tie into the WBSD's existing collection facilities. Installation of extension lines would comply with the WBSD Class 1 and Class 3 sewer permits, which require projects to reduce impacts to the WBSD's service capacity. As described above, the WBSD Wastewater Collection System Master Plan includes collection system improvements to support future development in its service area. These improvements would be implemented over the next ten years. The WBSD will update the Wastewater Collection System Master Plan to accommodate future growth beyond the year 2020. Additionally, project applicants will be responsible for upgrading or expanding the WBSD's collection system if the WBSD determines the demand from the project would exceed the WBSD's conveyance system capacity.⁴⁵ As a result, the impact would be a *less-than-significant*.

d. Cumulative Impacts

The geographic scope of this cumulative analysis is taken as the WBSD and SBSA service areas. As described in Chapter 4 of this EA, assuming a regional annual growth rate of 1 percent, WBSD's cumulative wastewater demand would increase by 3.2 MGD in the 21-year planning horizon.⁴⁶ Added to the existing average demand of 15 MGD, and the future development under the Plan Components demand of 0.29 MGD, the cumulative demand of 18.59 MGD would not exceed the SBSA WWTP's existing capacity of 27 MGD average dry weather flow. As described earlier, the SBSA will increase the WWTP capacity to 29 MGD dry weather capacity and 80 MGD wet weather capacity as needed.⁴⁷ Because the cumulative demand would not substantially reduce the existing or planned capacity of the SBSA's wastewater treatment system, the construction of new wastewater treatment facilities would be unnecessary. Implementation of General Plan Policy I-H-8, which states the expansion and improvement of sewage treatment facilities to meet the

⁴⁵ At the interview with The Planning Center | DC&E, the WBSD provided recommended improvements for the Plan Components. The WBSD's recommended improvements are shown in Appendix E of this EA.

⁴⁶ 15 MGD (existing demand) multiplied by 21 percent (one percent growth per year for 21 years from 2014 to 2035).

⁴⁷ South Bayside Systems Authority, Teresa Herrera, personal correspondence with The Planning Center | DC&E, January 21, 2013.

needs of Menlo Park and to meet regional water quality standards shall be supported to the extent that such expansion and improvement are in conformance with other City policies, combined with the WBSD's CIPs would ensure that the WBSD's wastewater conveyance system has sufficient capacity to accommodate the cumulative growth.

As previously stated, as the discharger named in the NPDES Permit, the SBSA implements and enforces a pretreatment program for effluent discharged into San Francisco Bay. Consequently, wastewater from cumulative development would be treated according to the wastewater treatment requirements enforced by the San Francisco RWQCB. Therefore, the Plan Components combined with regional growth in the service area would not exceed wastewater treatment requirements, and cumulative impacts to sanitary wastewater service would be *less than significant*.

5. Impacts and Mitigation Measures

The Plan Components would not result in any significant wastewater service impacts; therefore, no mitigation measures are necessary.

C. Stormwater Drainage

This section describes the existing conditions and potential impacts of the potential future development under the Plan Components with regard to stormwater drainage facilities.

1. Regulatory Setting

This section briefly describes the regulatory setting with regard to stormwater drainage in Menlo Park. Please refer to Section 4.8, Hydrology and Water Quality, of this EA, for a detailed description of the regulatory setting.

a. Federal and Regional Regulations

i. Clean Water Act and National Pollutant Discharge Elimination System

The NPDES permit program was established by the CWA) to regulate municipal and industrial discharges to surface waters of the U.S., including discharges from municipal separate storm sewer systems (MS4s).

ii. State Water Resources Control Board and Regional Water Quality Control Board

In California, the SWRCB has broad authority over water quality control issues for the State. The SWRCB is responsible for developing statewide water quality policy and exercises the powers delegated to the State

by the federal government under the CWA. Regional authority for planning, permitting, and enforcement is delegated to the nine RWQCBs.

iii. Statewide General Permit (Water Quality Order No. 2003-0005-DWQ)

The SWRCB elected to adopt a statewide general permit (Water Quality Order No. 2003-0005-DWQ) for Small Municipal Separate Storm Sewer System (MS4s) operators to efficiently regulate stormwater discharges under a single permit.⁴⁸ Permittees must develop and implement a Stormwater Management Plan (SWMP) with the goal of reducing the discharge of pollutants to the maximum extent practicable.

iv. SWRCB Construction General Permit

Construction activities that disturb one or more acres of land that could impact hydrologic resources must comply with the requirements of the SWRCB Construction General Permit (2009-0009-DWQ, which was amended by 2010-0014-DWQ in 2010).⁴⁹ Under the terms of the permit, applicants must file a complete and accurate Notice of Intent with the SWRCB. Applicants must also demonstrate conformance with applicable BMPs and prepare a Storm Water Pollution Prevention Plan (SWPPP), containing a site map that shows the construction site perimeter, existing and proposed buildings, lots, roadways, stormwater collection, discharge points, and general topography both before and after construction, as well as drainage patterns across the project site. The operative Construction General Permit requires stormwater pollution prevention controls, including the imposition of minimum BMPs and the development and implementation of Rain Event Action Plans for certain sites.

v. NPDES Municipal Regional Stormwater Permit

The EA Study Area is covered under the regulations of the new Municipal Regional Stormwater NPDES Permit (MRP) issued by the RWQCB. This NPDES Permit falls under Order R2-2009-0074, adopted on October 14, 2009.⁵⁰ The municipalities have to require both private and public projects to implement post-construct stormwater controls as part of their obligations under Provision C.3 of the MRP. Above and be-

⁴⁸ State Water Resources Control Board, *Order No. 2003-0005-DWQ*, http://www.swrcb.ca.gov/water_issues/programs/stormwater/docs/final_ms4_permit.pdf, accessed on September 28, 2012.

⁴⁹ State Water Resources Control Board, *Order No. 2010-0014-DWQ*, http://www.waterboards.ca.gov/water_issues/programs/stormwater/docs/constpermits/wqo_2009_0009_factsheet.pdf, accessed on September 28, 2012.

⁵⁰ California Regional Water Quality Control Board, San Francisco Bay Region, *Municipal Regional Stormwater NPDES Permit, Order R2-2009-0074 NPDES Permit No. CAS612008*, October 14, 2009, http://www.swrcb.ca.gov/rwqcb2/board_decisions/adopted_orders/2009/R2-2009-0074.pdf, accessed on September 28, 2012.

yond post-construction stormwater management practices, the permit also requires municipalities to adopt trash and street sweeping programs to regulate discharges into storm drain systems or directly into waters of the U.S.

vi. San Mateo Countywide Pollution Prevention Program

The San Mateo Countywide Water Pollution Prevention Program (SMCWPPP) was established in 1990 to reduce the pollution washed by stormwater runoff into local creeks, the San Francisco Bay, and the Pacific Ocean.⁵¹ The SMCWPPP assists its member agencies (the 20 cities in the County and unincorporated San Mateo County) to protect stormwater quality by complying with the countywide municipal stormwater NPDES permit. The SMCWPPP also provides C.3 Stormwater Technical Guidance for developers, builders, and project applicants to design and build low impact development projects. As defined by Provision C.3.b.ii of the MRP, projects that create and/or replace 10,000 square feet or more of impervious surface, and restaurants, retail gasoline outlets, auto service facilities, and uncovered parking lots (stand-alone or part of another use) that create and/or replace 5,000 square feet or more of impervious surface are regulated by Provision C.3. Single-family homes that are not part of a larger plan of development are excluded.

b. Local Regulations

i. City of Menlo Park City-Wide Storm Drainage Study

The City prepared the City-Wide Storm Drainage Study in May 2003 that summarized the existing stormwater drainage system and drainage deficiencies, and then prioritized system repairs and upgrades to reduce storm drain problems in the city.⁵² Highest priority is given to projects that improve the level of service to areas where stormwater frequently floods properties, and lower priority is given to projects that eliminate nuisance localized ponding in the gutter. The City indicated that about 2 percent of the improvement projects have been completed.⁵³

⁵¹ San Mateo Countywide Water Pollution Prevention Program, C.3 Stormwater Technical Guidance, http://www.flowstobay.org/documents/business/new-development/2012/C3_Technical_Guidance_Aug2012_SMCWPPP_for_upload.pdf, accessed on January 3, 2013.

⁵² BKF Engineers, 2003, City-wide Storm Drainage Study. Accessed October 23, 2012 from: <http://www.menlopark.org/departments/pwk/stormdrains.pdf>.

⁵³ Virginia Parks, Associate Engineer, City of Menlo Park, Email Communication with The Planning Center | DC&E on November 14, 2012.

*ii. City of Menlo Park Municipal Code Chapter 7.42, Stormwater Management Program*⁵⁴

Chapter 7.42 of the Municipal Code aims to protect and enhance the water quality in the EA Study Area and establishes regulations and restrictions related to pollutants in storm water discharges and non-storm water discharges, including spills, dumping, or disposal of materials. To reduce pollutants in stormwater, the City requires that new development or redevelopment projects use BMPs, such as biological treatments, detentions, and rain gardens.

iii. Hydrology Report

The City of Menlo Park Public Works Department requires that a Hydrology Report be prepared by a California-registered civil engineer for all development projects with 10,000 square feet or more of impervious surface area and a Simplified Hydrology Report for significant development projects with less than 10,000 square feet of impervious surface area. The Hydrology Report should comply with the “Requirements for the Preparation of Hydrology Reports” published by the City, including existing and proposed on-site and off-site conditions, the location of the project, the hydrology calculation method used in the report, proposed storm water quality measures, and an assessment of potential off-site impacts.⁵⁵

*iv. Grading and Drainage Guidelines*⁵⁶

The Grading and Drainage Guidelines (G&D Guidelines) establish design requirements for new construction and redevelopment projects. These G&D Guidelines describe the stormwater control and treatment measures that reduce the amount of stormwater runoff and prevent sediment and pollutants from entering into the City’s storm drain system. In particular, G&D Guidelines require the post development runoff rate not exceed pre-project levels, and the retention/detention systems be designed to treat storm water runoff in the event of a ten-year storm with a time of concentration of ten minutes.

In addition, the G&D Guidelines outline requirements for G&D Plans, which the City of Menlo Park Engineering Division requires for any development that includes more than 500 square feet of affected surface. The G&D Guidelines indicate that a G&D Plan must include site plans and storm drain control plans, such

⁵⁴ City of Menlo Park, Municipal Code Chapter 7.42, Stormwater Management Program, <http://www.codepublishing.com/CA/menlopark/>, accessed on September 27, 2012.

⁵⁵ City of Menlo Park, Requirements for the Preparation of Hydrology Reports, August 20, 2006, http://www.menlopark.org/departments/pwk/Hydrology_over10k.pdf, accessed on January 3, 2012.

⁵⁶ City of Menlo Park, Grading and Drainage Guidelines, 2010, http://www.menlopark.org/departments/pwk/grade_guide.pdf, accessed on January 3, 2013.

as proposed storm drain and utility systems, frontage improvements, and irrigation plans. The City also requires G&D Plans to address erosion and sedimentation control details and include an Impervious Area Worksheet evaluating potential changes to an impervious area.

2. Existing Conditions

The City of Menlo Park's Public Works Department owns, operates, and maintains the storm drainage system. Currently, the City has 44 miles of storm drain pipe and 1,000 inlets or catch basins.⁵⁷ The City storm water drainage system consists of 17 individual systems that discharge into San Francisquito Creek, Atherton Channel, and through East Palo Alto into San Francisco Bay. The area south of Middlefield Road drains to the either the Atherton Channel or San Francisquito Creek on the southeast.⁵⁸ The area north of Middlefield Road drains to the Bay through either the Belle Haven Storm Drain system or through City of East Palo Alto Storm Drain lines.

The 2003 Citywide Storm Drainage Study reported that there is a likelihood of significant flow in the street during the 10-year storm event for most drainage systems in the City. Flow in the street reaches the outfall slower than flow through a piped system. As a result, unintentional stormwater detention occurs. This detention decreases peak flow rates through the system, but increases the duration of surface and localized flooding.

The stormwater from the EA Study Area flows into larger water bodies generally without going through a stormwater treatment plant; the City requires that all stormwater be treated on-site through BMPs such as biological treatments, detentions, and rain gardens.⁵⁹ If the geological conditions of a development site do not allow these kinds of biological treatments (e.g. clay layers), the City requires mechanical treatment be installed and maintained on-site at the owner's expense. The City conducts engineering reviews of private projects to ensure designs are consistent with City specifications.⁶⁰

⁵⁷ Virginia Parks, Associate Engineer, City of Menlo Park. Email communication with The Planning Center | DC&E on November 14, 2012.

⁵⁸ BKF Engineers, 2003. City-wide Storm Drainage Study. Accessed October 23, 2012 from: <http://www.menlopark.org/departments/pwk/stormdrains.pdf>.

⁵⁹ Virginia Parks, Associate Engineer, City of Menlo Park. Personal communication with The Planning Center | DC&E, December 13, 2012.

⁶⁰ Menlo Park, Public Works Department website, http://www.menlopark.org/departments/dep_publicworks.html, accessed October 23, 2012.

3. Standards of Significance

The Plan Components would have a significant impact on drainage facilities if they would require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

4. Impact Discussion

- a. Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

Future development under the Plan Components would have the potential to cause significant impacts by increasing stormwater runoff associated with construction activities and increasing impermeable surfaces, thereby placing greater demands on the stormwater handling system.

Future development under the Plan Components would tie into the City's existing storm sewer mains and be required to utilize on-site retention to the extent impracticable. As required in the City's G&D Guidelines, the on-site retention would be designed to reduce the post development runoff rate to pre-project levels for the 10-year storm. Additionally, any development projects that include more than 500 square feet of affected surface would prepare a G&D Plan to prevent sediment and pollutants from entering into the City's storm drain system. The projects regulated by Provision C.3 and the City's Hydrology Report requirements would provide sufficient treatment area to meet the requirements for compliance with the RWQCB C.3 provisions. As a result, buildout under the Plan Components would not increase either the volume or the velocity of stormwater flowing into the City's stormwater system for the 10-year storm. Additional flows beyond the 10-year storm and localized flooding specific to the site in question that may require additional storm drainage improvements to be constructed by the specific project would be addressed in the Grading and Drainage Plans for each project. The Grading and Drainage Plans would be reviewed by the City to ensure that on-site drainage, Low Impact Development features, and retention basins are adequate to prevent on-site or off-site flooding.

In addition, the General Plan Program I-3 calls for the provision of an adequate drainage infrastructure. Under this Program, the City will develop and periodically update a five-year Capital Improvement Program. Such program shall include, among others, improvements for transportation, water supply, and drainage. With the General Plan Program I-3, City's stormwater management programs, and RWQCB C.3 provisions in place, future development would not increase demands on the stormwater handling system, and stormwater facilities would be upgraded and expanded, as necessary to support development in the EA Study Area. As a result, a *less-than-significant* impact would occur on stormwater treatment facilities.

b. Cumulative Impacts

As described above, future development under the Plan Components would not increase either the volume or the velocity of stormwater flowing into the City's stormwater system. With the General Plan Program I-3, the City's stormwater management programs, and RWQCB C.3 provisions in place, other cumulative projects would not increase demands on the stormwater handling system. Additionally, based on the 2003 Citywide Storm Drainage Study, stormwater facilities would be upgraded and expanded as necessary to support development in Menlo Park. Therefore, the Plan Components, in combination with the 1-percent regional growth, would not create or contribute runoff exceeding the capacity of the City's storm sewer system, and by extension, would not result in the need for new or expanded storm sewer infrastructure. Associated cumulative impacts would be *less than significant*.

5. Impacts and Mitigation Measures

The Plan Components would not result in any significant stormwater drainage impacts; therefore, no mitigation measures are necessary.

D. Solid Waste

This section describes existing conditions related to solid waste disposal services and the potential impacts of Plan Components.

1. Regulatory Setting

a. State Regulations

i. California Integrated Waste Management Act

California's Integrated Waste Management Act of 1989 (Assembly Bill [AB] 939) requires that Cities and Counties divert 50 percent of all solid waste from landfills as of January 1, 2000 through source reduction, recycling, and composting. AB 939 also establishes a goal for all California counties to provide at least 15 years of ongoing landfill capacity. To help achieve this, this act requires that each City and county prepare a Source Reduction and Recycling Element to be submitted to the Department of Resources Recycling and Recovery (CalRecycle), a new department within the California Natural Resources Agency, which administers programs formerly managed by the State's Integrated Waste Management Board and Division of Recycling.

In 2007, SB 1016 amended AB 939 to establish a per capita disposal measurement system. The per capita disposal measurement system is based on two factors: a jurisdiction's reported total disposal of solid waste

divided by a jurisdiction's population. CalRecycle sets a target per capita disposal rate for each jurisdiction. Each jurisdiction must submit an annual report to CalRecycle with an update of its progress in implementing diversion programs and its current per capita disposal rate.⁶¹ The City of Menlo Park's target disposal rate is 7.5 pounds per person per day, and its actual disposal rate in 2011 was 5.5 pounds per person per day.⁶²

ii. California Solid Waste Reuse and Recycling Access Act of 1991

The California Solid Waste Reuse and Recycling Access Act requires areas in development projects to be set aside for collecting and loading recyclable materials. This Act required CalRecycle to develop a model ordinance for adoption by any local agency relating to adequate areas for collection and loading of recyclable materials as part of development projects. Local agencies are required to adopt the model, or an ordinance of their own, governing adequate areas in development projects for collection and loading of recyclable materials.

iii. CALGreen Building Code

The California Green Building Standards Code (CALGreen Code) became effective for all projects beginning after January 1, 2011. Section 4.408, Construction Waste Reduction Disposal and Recycling, mandates that, in the absence of a more stringent local ordinance, a minimum of 50 percent of non-hazardous construction and demolition debris must be recycled or salvaged. The Code requires the Applicant to have a waste management plan for on-site sorting of construction debris. The plan:

- “ Identifies the materials to be diverted from disposal by recycling or reuse on the project, or salvaged for future use or sale.
- “ Specifies if materials will be sorted on-site or mixed for transportation to a diversion facility.
- “ Identifies the diversion facility where the material collected will be taken.
- “ Identifies construction methods employed to reduce the amount of waste generated.
- “ Specifies that the amount of materials diverted shall be calculated by weight or volume, but not by both.

⁶¹ California Integrated Waste Management Board, <http://www.calrecycle.ca.gov/LGCentral/Basics/PerCapitaDsp.htm#Jurisdiction>, accessed on September 28, 2012.

⁶² Rebecca Fotu, City of Menlo Park. Email correspondence with The Planning Center |DC&E, January 2, 2013.

b. Local Policies and Regulations

i. *San Mateo Countywide Integrated Waste Management Plan*⁶³

The California Integrated Waste Management Act of 1989 (AB 939) requires each County prepare and adopt a Countywide Integrated Waste Management Plan (CIWMP). San Mateo County government and all the cities in the county have prepared and adopted elements that compose the CIWMP. The elements of the CIWMP are: the Source Reduction and Recycling Element (SRRE), the Household Hazardous Waste Element (HHWE), and the Non-Disposal Facility Element (NDFE).

ii. *Menlo Park Municipal Code*

Chapter 12.48 of the Municipal Code establishes landfill diversion requirements of Construction and Demolition (C&D) debris.⁶⁴ Residential projects of 1,000 square feet or greater and commercial projects of 5,000 square feet or greater are required to divert 60 percent of total generated waste tonnage through recycling, reuse, salvage, and other diversion programs. As part of a building or demolition permit application, project applicants must submit estimated tonnage of C&D debris and plans for diverting materials to the building division.

iii. *City of Menlo Park Climate Change Action Plan*⁶⁵

The City's 2009 Climate Action Plan (CAP) was developed to reduce GHG emissions by implementing various strategies and programs at the local level. The CAP identifies the City's existing GHG inventory and estimates emissions for the year 2020 under different scenarios. Based on this, the CAP proposes emission reduction targets to help meet AB 32's regional goals. The CAP also recommends short- and mid-term strategies for the community and municipal operations to meet the targets. The CAP strategies related to solid waste include 1) adopting a new mandatory commercial recycling ordinance to reduce waste to landfill and 2) adopting a Zero Waste Policy, which requires a 75-percent diversion rate by 2020 and a 90-percent

⁶³ County of San Mateo, Five-Year Countywide Integrated Waste Management Plan Review Report, http://www.co.sanmateo.ca.us/bos.dirBosAgendas/agendas2010/Agenda20100126/20100126_m_54.htm, accessed on January 3, 2013.

⁶⁴ City of Menlo Park, Municipal Code Chapter 12.48, <http://www.codepublishing.com/CA/menlopark/>, accessed on September 28, 2012.

⁶⁵ City of Menlo Park, *Climate Change Action Plan*, 2009, <http://www.menlopark.org/departments/env/CAP2009Complete.pdf>, accessed on September 27, 2012.

diversion rate by 2030. The City's CAP Assessment, prepared in 2011, recommended implementing these strategies within five years.⁶⁶

2. Existing Conditions

Recology Incorporated provides solid waste collection and conveyance service for the EA Study Area. Collected recyclables, organics, and garbage are conveyed to the Shoreway Environmental Center in San Carlos for processing and shipment. The Shoreway Environmental Center is owned by RethinkWaste (former South Bayside Waste Management Authority), which is a joint powers authority that is comprised of twelve public agencies, including Atherton, Belmont, Burlingame, East Palo Alto, Foster City, Hillsborough, Menlo Park, Redwood City, San Carlos, San Mateo, the County of San Mateo, and the West Bay Sanitary District, and operated by South Bay Recycling under a ten-year contract with RethinkWaste as of January 1, 2011.⁶⁷

As of 2011, San Mateo County produced 17 percent less trash than in 2010, from 71,840 tons to 59,300 tons. This was accompanied by a 25 percent increase in recycling and a 29 percent increase in composting of organics. RethinkWaste reported that increasing the size of recycling containers, decreasing of trash containers, and scheduling weekly collection for all three carts were the significant contributing factors for this achievement.⁶⁸

The Shoreway Environmental Center, opened on September 27, 2011, consists of a transfer station, a materials recovery facility, a public recycling center, an environmental education center, Recology offices, and South Bay Recycling offices in separate buildings on 16 acres of land.⁶⁹ Under the California State Integrated Waste Management Board (CIWMB) permission, the Shoreway has a daily capacity of 3,000 tons of solid

⁶⁶ City of Menlo Park, *Climate Action Plan Assessment*, 2011, http://www.menlopark.org/departments/env/Menlo_CAP_Assessment_Report_2010_12_14_draft_final_final6.pdf, accessed on September 27, 2012.

⁶⁷ RethinkWaste, History and Mission, <http://www.rethinkwaste.org/history-and-mission>, December 31, 2012.

⁶⁸ 2011 Annual Report, RethinkWaste, Accessed October 23, 2012 from: http://www.rethinkwaste.org/files/content/file/2011%20Annual%20Report_FINAL_Web%20Version.pdf.

⁶⁹ RethinkWaste, Shoreway Overview, <http://www.rethinkwaste.org/shoreway-facility/overview>, December 31, 2012.

waste and recyclables. Currently, it receives 1,300 tons per day, 6 percent of which is from the City of Menlo Park (roughly 300 tons per month).⁷⁰ There is no plan to expand the existing facility.

Materials not composted or recycled in San Mateo County are landfilled at the Ox Mountain Landfill (also known as Corinda Los Trancos Landfill) near the City of Half Moon Bay, San Mateo County. Ox Mountain Landfill is a Class III facility permitted to accept 3,598 tons of refuse per day and 1.15 million tons per year. In 2011, the facility accepted 2,260 tons per day or 700,600 tons per year, roughly 40 percent less than its daily permitted capacity of 3,598 tons.⁷¹ Menlo Park's city-wide waste contribution in 2011 was 32,259 tons, and 19,136 tons were deposited at Ox Mountain Landfill.⁷² As of 2011, Ox Mountain Landfill's existing capacity was approximately 20.2 million cubic yards, and Ox Mountain is expected to service the region until year 2034.⁷³

3. Standards of Significance

The Plan Components would have a significant impact on solid waste facilities if they would:

- a. Be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs.
- b. Be out of compliance with federal, State, and local statutes and regulations related to solid waste.

4. Impact Discussion

- a. Be served by a landfill with insufficient permitted capacity to accommodate the Project's solid waste disposal needs.

Solid waste from future development under the Plan Components would be transferred to Ox Mountain Landfill for ultimate disposal. As described above, Ox Mountain Landfill is permitted to receive up to 3,598 tons of waste per day and currently receives about 2,260 tons of waste per day. As of 2011, remaining capacity was approximately 20.2 million cubic yards.

⁷⁰ RethinkWaste, Hilary Gans, Operations Contracts Manager, Personal email correspondence with The Planning Center |DC&E, December 11, 2012.

⁷¹ City of Menlo Park, 2011. Menlo Park Facebook Campus Project Draft EIR.

⁷² CalRecycle, accessed on December 11, 2012.

⁷³ RethinkWaste, Hilary Gans, Operations Contracts Manager. Personal email correspondence with The Planning Center |DC&E, December 11, 2012.

In compliance with State Law SB 1016, the City would aim for the CIWMB target of 7.5 pounds of waste per person per day through the source reduction, recycling, and composting programs coordinated by Re-thinkWaste. As previously discussed, Menlo Park's disposal rate in 2011 was 5.5 pounds of waste per person per day, which was well below the CIWMB target of 7.5 pounds of waste per person per day.⁷⁴ As discussed below, with various waste reduction policies and programs in place, the City would continue to meet or perform better than the State mandated target. Assuming a disposal rate of 7.5 pounds of waste per person per day, future development under the Plan Components could generate up to 17.6 tons of waste per day.⁷⁵ The total solid waste generated from future development under the Plan Components would therefore be approximately 0.8 percent of the permitted daily capacity of Ox Mountain Landfill. Therefore, Ox Mountain Landfill has sufficient capacity to accommodate the solid waste disposal needs of future development under the Plan Components until 2034 when it is expected to close. Additionally, the following current and amended General Plan policies would ensure that impacts to solid waste would be reduced.

i. Current General Plan Land Use and Circulation Element

- Policy I-H-1: The community design should help conserve resources and minimize waste.

ii. Amended General Plan Open Space and Conservation Element

- Policy OSC-4.7: Waste Management Collaboration. Continue to support and participate in efforts such as the South Bayside Waste Management Authority, which provides waste reduction, recycling, and solid waste programs and solutions.
- Policy OSC-4.6: Waste Reduction Target. Strive to meet the California State Integrated Waste Management Board per person target of waste generation per person per day through their source reduction, reuse, and recycling programs.

Solid waste impacts under the Plan Components would therefore be *less than significant*.

b. Be out of compliance with federal, State, and local statutes and regulations related to solid waste. As discussed above, the City has complied with State requirements to reduce the volume of solid waste through recycling and reuse of solid waste. Additionally, Menlo Park has adopted a Source Reduction and

⁷⁴ Rebecca Fotu, City of Menlo Park. Email correspondence with The Planning Center |DC&E, January 2, 2013.

⁷⁵ 3,361 residents x 7.5 pound/person/day (a target disposal rate) = 35,208 pounds or 17.6 tons per day.

Recycling Element (SRRE), a Household Hazardous Waste Element (HHWE), and a Non-Disposal Facility Element (NDFE) in compliance with the California Integrated Waste Management Act. Implementation of strategies and programs from these plans allowed the City to meet the State mandated waste diversion goal of 50 percent in 2011. In addition, when the City adopts a Zero Waste Policy, future development under the Plan Components would be required to meet a 75-percent diversion rate by 2020 and a 90-percent diversion rate by 2030 through various CAP strategies. These programs are sufficient to ensure that future development in Menlo Park would not compromise the ability to meet or perform better than the State mandated target.

Construction and demolition associated with future development under the Plan Components would generate significant solid waste. At least 60 percent of this waste, however, would be expected to be diverted from landfill disposal by recycling in accordance with the City's construction debris ordinance. Therefore, future development would comply with applicable statutes and regulations and the impact would be *less than significant*.

c. Cumulative Impacts

Regional growth will increase the quantity of solid waste for disposal. Although AB 939 established a goal for all California cities to provide at least 15 years of ongoing landfill capacity, growth from other cities in San Mateo County may exceed that which was taken into account when calculating landfill capacity. However, as shown in Chapter 4.11, Population and Housing, of this EA, anticipated growth in Menlo Park is less than the expected regional growth, and therefore Menlo Park's growth would not exceed that which was taken into account when calculating landfill capacity in CIWMB plans. Additionally, implementation of existing waste reduction programs and diversion requirements, as discussed above, would reduce the potential for exceeding existing capacities of landfills. The cumulative impact would be *less than significant*.

5. Impacts and Mitigation Measures

The Plan Components would not result in any significant solid waste impacts; therefore, no mitigation measures are necessary.

E. Energy

This section evaluates potential energy impacts in accordance with CEQA Guidelines Section 15126.4(a) and Appendix F (Energy Conservation), which require a discussion of the potential energy impacts of proposed projects with particular emphasis on avoiding or reducing inefficient, wasteful, and unnecessary consump-

tion of energy. Impacts are assessed based on an evaluation of consumption of energy by the project. Development generally results in the consumption of energy in three forms: 1) the fuel energy consumed by construction vehicles; 2) bound energy in construction materials such as asphalt, steel, concrete, pipes, and manufactured or processed materials such as milled lumber and glass; and 3) operational use of energy by future businesses and end users for transportation, equipment operation, and cooling of buildings. Construction materials and the operational use of energy should be addressed. Refer to Chapter 4.6, Greenhouse Gas Emissions, of this Draft EIR, for a detailed discussion about potential impacts of the Plan Components with regard to GHS emissions.

1. Regulatory Setting

a. Federal Regulations

There are no federal regulations regarding energy conservation that are applicable to the Plan Components.

b. State Regulations

i. California Public Utilities Commission

The California Public Utilities Commission (CPUC) was established by Constitutional Amendment as the California Railroad Commission in 1911 and in 1912, the Legislature passed the Public Utilities Act. This Act expanded the CPUC's regulatory authority to include natural gas, electric, telephone, and water companies as well as railroads and marine transportation companies. In 1946, the Commission was renamed the California Public Utilities Commission. The CPUC regulates privately-owned telecommunications, electric, natural gas, water, railroad, rail transit, and passenger transportation companies. The CPUC is responsible for assuring California utility customers have safe, reliable utility service at reasonable rates, protecting utility customers from fraud, and promoting the health of California's economy.

ii. Title 24, Part 6 of the California Code of Regulations (1978)

The Energy Efficiency Standards for Residential Buildings were established in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods. The efficiency standards apply to new construction of both residential and non-residential buildings, and regulate energy consumed for heating, cooling, ventilation, water heating, and lighting. The building efficiency standards are enforced through the local building permit process. Local government agencies may adopt and enforce energy standards for new buildings, provided that these standards meet or exceed those provided in Title 24 guidelines, which as of January 1, 2011 include compliance with the mandatory provisions of the 2010 Cali-

ifornia Green Building Standards (CALGreen) Code.⁷⁶ On January 12, 2010, the California Building Standards Commission adopted CALGreen and became the first state in the United States to adopt a statewide green building standards code. CALGreen will require new buildings to reduce water consumption by 20 percent, divert 50 percent of construction waste from landfills, and install low pollutant-emitting materials. The mandatory provisions of CALGreen were effective on January 1, 2011.

c. Local Regulations

i. *City of Menlo Park Climate Change Action Plan*⁷⁷

As described in Section D.1.b.i above, the City has a Climate Action Plan (CAP). To reduce GHG emissions, the CAP recommends various energy efficiency strategies, including adopting Green Building standards that exceed California's 2010 Green Building Code, developing an Energy Efficiency/ Renewable Energy Program, and implementing social marketing programs/campaigns to promote alternative transportation and car sharing. A Climate Action Plan Assessment, prepared in 2011, recommends implementing these strategies within five years.⁷⁸

ii. *City of Menlo Park 2010 Green Building Standards Codes*⁷⁹

Menlo Park has adopted local amendments to 2010 CALGreen, which has been enforced since January 1, 2012. Chapter 12.18 of the Menlo Park Municipal Code adopts and amends CALGreen by reference, establishing sustainable building requirements that are applicable to all newly constructed buildings or structures. Section 12.18.010 of the Menlo Park Municipal Code requires that newly constructed buildings achieve at least a 15 percent reduction in energy usage when compared to the State's mandatory energy efficiency standards.

⁷⁶ State of California, *State and Local Government Green Building Ordinances in California*, http://ag.ca.gov/globalwarming/pdf/green_building.pdf, accessed on September 28, 2012.

⁷⁷ City of Menlo Park, *Climate Change Action Plan*, 2009, <http://www.menlopark.org/departments/env/CAP2009Complete.pdf>, accessed on September 27, 2012.

⁷⁸ City of Menlo Park, *Climate Action Plan Assessment*, 2011, http://www.menlopark.org/departments/env/Menlo_CAP_Assessment_Report_2010_12_14_draft_final_final6.pdf, accessed on September 27, 2012.

⁷⁹ City of Menlo Park, *2010 Green Building Standards Codes Summary of Changes*, http://www.menlopark.org/departments/bld/2010GreenBuildingStandards_2012.pdf, accessed on February 11, 2013.

2. Existing Conditions

Grid electricity and natural gas service in Menlo Park is provided by PG&E. PG&E is a publicly traded utility company which generates, purchases, and transmits energy under contract with the California Public Utilities Commission. PG&E's service territory is 70,000 square miles in area, roughly extending north to south from Eureka to Bakersfield, and east to west from the Sierra Nevada mountain range to the Pacific Ocean.⁸⁰ PG&E's electricity distribution system consists of 141,215 circuit miles of electric distribution lines and 18,616 circuit miles of interconnected transmission lines. PG&E electricity is generated by a combination of sources such as coal-fired power plants, nuclear power plants, and hydro-electric dams, as well as newer sources of energy such as wind turbines and photovoltaic plants or "solar farms."⁸¹ "The Grid," or bulk electric grid, is a network of high-voltage transmission lines link power plants with the PG&E system. The distribution system, comprised of lower voltage secondary lines, is at the street and neighborhood level, and consists of overhead or underground distribution lines, transformers, and individual service "drops" that connect to the individual customer.⁸²

PG&E's natural gas (methane) pipe delivery system includes 42,141 miles of distribution pipelines, and 6,438 miles of transportation pipelines.⁸³ Gas delivered by PG&E originates in gas fields in California, the US Southwest, US Rocky Mountains, and from Canada.⁸⁴ Transportation pipelines send natural gas from fields and storage facilities in large pipes under high pressure. The smaller distribution pipelines deliver gas to individual businesses or residences.⁸⁵

San Mateo County electricity usage in 2011 was a total of 4,534 million Kilowatt-hours (kWh) countywide, with two-thirds of the electricity used by industry and commercial accounts, and roughly one-third of the

⁸⁰ PG&E, 2012. Company Info. <http://www.pge.com/about/company/profile/> accessed October 25, 2011.

⁸¹ Marshall, J. 2011, *Currents*. PG&E Plan(t)s New Solar Farms in Central Valley. <http://www.pgecurrents.com/2011/10/17/pge-plants-new-solar-farms-in-central-valley/>.

⁸² PG&E, n.d., PG&E's Electric System. Accessed October 25, 2012 from: http://www.pge.com/includes/docs/pdfs/shared/edusafety/systemworks/electric/pge_electric_system.pdf.

⁸³ PG&E, *Unplugged*, March 12, 2010, http://www.pgeunplugged.com/uploads/PG_E_Unplugged_March_12_2010.pdf, accessed on January 4, 2013.

⁸⁴ Western North American Natural Gas Pipelines. http://www.pge.com/pipeline/about/system_maps/western_pipelines_2011.pdf.

⁸⁵ PG&E, 2012. FAQ – General Gas System Operations, Accessed October 24, 2012 from: <http://www.pge.com/mybusiness/edusafety/systemworks/gas/faq/>.

electricity used by residential accounts.⁸⁶ The City's Climate year 2010 data shows the citywide electricity usage was 0.9 megawatts as a whole, with 0.3 megawatts used by residential accounts and 0.6 megawatts used by commercial accounts.⁸⁷ San Mateo County natural gas (methane) usage in 2011 was 92 million therms in the non-residential sector and 135 million therms in the residential sector, for a total of 227 million therms countywide.⁸⁸

3. Standards of Significance

As previously discussed, the State CEQA Guidelines (Appendix F) require a discussion of the potential energy impacts of proposed projects; however, no specific thresholds of significance for potential energy impacts are suggested in the State CEQA Guidelines.

4. Impact Discussion

Buildout under the Plan Components could bring up to 1,318 residential units to the city over the next 21 years. The new dwelling units and supporting infrastructure would require direct energy (electricity and natural gas) for lifetime operation but would not significantly increase energy demands. Historically, residential development has comprised a very small proportion of overall energy demand. Because housing Site 4 (Hamilton Avenue) and Site 5 (Haven Avenue) are currently designated commercial or industrial uses on the City's Zoning Map, in which the City anticipates more demand on energy services than residential, energy demands from future residential development on these sites would not exceed what the City has anticipated. The rest of potential housing sites would be rezoned to allow a higher residential density, but this change would not substantially increase the citywide energy demand to the extent that requires expansion or construction of power facilities.

Additionally, this future development would be required to comply with all applicable building and design requirements, including those set forth in Title 24 relating to energy conservation. Future development under the Plan Components would also be required to reduce water consumption by 20 percent, divert 50 percent of construction waste from landfills, reduce 15 percent of energy usage when compared to the

⁸⁶ California Energy Commission, 2012, San Mateo County Electricity Usage, <http://www.ecdms.energy.ca.gov/elecbycounty.aspx>, October 23, 2012.

⁸⁷ City of Menlo Park, 2010 Inventory Data with State Report Fuel, provided by Rebecca Fotu, November 19, 2012.

⁸⁸ California Energy Commission, San Mateo County Gas Usage, <http://www.ecdms.energy.ca.gov/gasbycounty.aspx>, October 23, 2012.

State's mandatory energy efficiency standards, and install low pollutant-emitting materials in compliance with the CALGreen Codes and City's Green Building Standards Codes, as described above.

When the City adopts and begins implementing the CAP's energy efficiency strategies, presumably within five years, future developments under the Plan Components would be required to comply with the Green Building standards and Energy Efficiency/Renewable Energy Programs, as well as encourage the use of alternative transportation and car sharing.

In addition, because the potential housing sites under the Plan Components are located in developed areas where PG&E's distribution infrastructure has already been installed, future development under the Plan Components would be served by existing electricity and gas lines in the vicinity of each site. When minor extensions of electrical and gas distribution systems to individual sites are necessary, individual future project sponsors would pay PG&E for such extensions. However, these extensions of the distribution system would not substantially decrease PG&E's overall capacity or interfere with normal PG&E services.

Overall, future development under the Plan Components would not require new energy supply facilities and major distribution infrastructure or capacity enhancing alterations to existing facilities, which could result in environmental impacts. Therefore, impacts would be *less than significant* and no mitigation measures are required.

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UTILITIES AND SERVICE SYSTEMS

5 ALTERNATIVES TO THE PROPOSED PLAN COMPONENTS

The purpose of this chapter is to inform the public and decision makers of feasible alternatives to the proposed Housing Element Update, General Plan Consistency Update, and associated Zoning Ordinance amendments, together referred to as the “Plan Components.” Consistent with Section 15126.6(a) of the State CEQA Guidelines, this chapter includes the identification and evaluation of alternatives to the proposed Plan Components that are designed to reduce the significant environmental impacts associated with future development under the Plan Components. This chapter includes a reasonable range of alternatives, which could feasibly attain the objectives of the Plan Components.

A. Overview of Selected Alternatives

For the purposes of this Environmental Assessment (EA) the “No Project” Alternative is required as part of the “reasonable range of alternatives” that could feasibly attain most or all of the objectives of the Plan Components. Each alternative is analyzed against the significance thresholds considered in Chapter 4, Environmental Evaluation. This chapter assesses whether the impacts of the alternatives would be greater than, less than, or similar to those of the Plan Components.

The alternatives to the Plan Components are:

- “ **The No Project Alternative:** Under this alternative, the City’s Housing Element would not be updated to fulfill the Regional Housing Needs Allocation (RHNA) for the current planning period (2007 to 2014) as well as the previous planning period (1999 to 2006). The policies and programs of the current General Plan would remain in effect and no associated Zoning Ordinance amendments would occur.
- “ **Reduced Density Alternative:** Under this alternative, the overall number of potential housing units that would be permitted by adopting and implementing the Housing Element Update, General Plan Consistency Update, and associated Zoning Ordinances amendments would be reduced by 25 percent. All other aspects of the Plan Components would remain the same.

B. No Project Alternative

1. Principal Characteristics

Under this alternative, the City’s Housing Element would not be updated to fulfill the RHNA for the current planning period (2007 to 2014) as well as the previous planning period (1999 to 2006). Future development on the five identified housing sites would continue to be subject to existing land use designations as

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TABLE 5-1 COMPARISON OF IMPACTS FROM PLAN COMPONENTS ALTERNATIVES

Topic	No Project Alternative	Reduced Density Alternative
Aesthetics	=	=
Air Quality	<	<
Biological Resources	=	=
Cultural Resources	>	=
Geology and Soils	=	=
Greenhouse Gas Emissions	>	<
Hazards and Hazardous Materials	=	=
Hydrology and Water Quality	=	=
Land Use and Planning	=	=
Noise	<	<
Population and Housing	=	=
Public Services and Recreation	<	<
Transportation and Traffic	<	<
Utilities and Service Systems	<	<
< <	Substantially reduced impact in comparison to the Plan Components	
<	Slightly reduced impact in comparison to the Plan Components	
=	Similar impacts in comparison to the Plan Components	
>	Slightly greater impact in comparison to the Plan Components	
> >	Substantially greater impact in comparison to the Plan Components	

per the existing General Plan and regulations per the existing Zoning Ordinance, which, as described below, would allow for a total of approximately 30 units through second unit and infill housing development¹ and additional industrial development on the Haven Avenue and Hamilton Avenue locations.

a. Housing Sites

i. Housing Site 1 - 700 block of Willow Road

The City does not need to take any action to rezone Site 1 (Veterans Affairs Campus) due to a Federal pre-emption of the City's land use authority. Therefore, while the Plan Components accounts for a 60-unit development on Site 1, the same development could occur at this location under the No Project Alternative.

ii. Housing Sites 2 and 3 - 1200 and 1300 block of Willow Road

Potential housing Sites 2 and 3 (MidPen's Gateway Apartments) are currently at capacity under the existing General Plan and Zoning Ordinance; therefore, no changes to these sites are anticipated under the No Project Alternative.

iii. Housing Site 4 - 700-800 blocks of Hamilton Avenue

Housing Site 4 (Hamilton Avenue) has vacant land; therefore this site could include additional development under the existing General Plan and Zoning Ordinance, but would not include new residential units.

iv. Housing Site 5 - 3600 block of Haven Avenue²

Housing Site 5 (Haven Avenue) is underutilized; therefore this site could include additional development under the existing General Plan and Zoning Ordinance, but would not include new residential units.

b. Second Units

Second units would continue to be permitted, but the second unit program that modifies the City's existing regulations to reduce obstacles and encourage second unit development (e.g. smaller parcel size and flexible height limits) under the Plan Components would not be adopted. Therefore, it is estimated that the second units would continue to be developed at the same rate as in the past. For the purposes of this EA a 0.6-unit a year average that was derived from the eight second units built or approved between 1999 to 2012/13 years

¹ 30 units = (17 net potential dwelling units on lots 10,000 square feet or greater in the infill around downtown area) + (13 second units [average of .6 units a year]). The second units were determined applying 0.6-unit a year average derived from the eight second units built or approved between 1999 to 2012/13 years (see Table 3-2 in Chapter 3, Project Description).

² Housing Site 5 does not include the properties owned by Tyson, Integris, and Deerfield.

(see Table 3-2 in Chapter 3, Project Description) was applied to the No Project Alternative for an estimated total of 13 units to be built by 2035.

c. Infill Units Around Downtown

Similar to the second unit program, the infill program to promote infill housing opportunities focused on lots 10,000 square feet or greater in areas surrounding in the El Camino Real/Downtown Specific Plan area would not be implemented. The infill program could include modifications to encourage infill housing such as increasing maximum Floor Area Ratio (FAR) and maximum density, flexibility in required parking standards dependent on tenancy (e.g. senior housing) and/or location (e.g. proximity to transit services), development of “density unit equivalents,” the creation of multi-family and mixed-use design guidelines and the consideration of fee reduction or waivers. Therefore, it is estimated that the infill units would continue to be developed at the same rate as in the past. Thus, 17 net potential dwelling units on lots 10,000 square feet or greater in the infill around downtown area would occur under the No Project Alternative.

Accordingly, under the No Project Alternative, future residential units on the five potential housing sites, infill units around the downtown area and second units on existing residential lots would not be anticipated to be developed at the same rate as they would under the Plan Components. The future housing sites would not accommodate up to 900 units at 30 or more units per acre; therefore, the City’s lower income households housing needs would not be met. As described in Chapter 3, Project Description, the City must re-zone sites to accommodate a minimum of 454 housing units for lower income (very low income and low income) households at 30 dwelling units per acre to meet its remaining RHNA.

Any future demolition or construction that could occur under the existing General Plan and Zoning designations would be subject to separate environmental review at the discretion of the City.

As throughout Chapter 4, Environmental Evaluation, of this EA, the alternatives analysis in this chapter is based on estimated horizon development in 2035.

2. Impact Discussion

The No Project Alternative would have the following impacts relative to the Plan Components:

a. Aesthetics and Visual Resources

Under this alternative the existing land use and zoning designations of the future housing sites would not change. As discussed above, similar to the Plan Components, demolition and new construction could occur on the potential housing sites.

The Plan Components would not result in significant impacts associated with obstruction of views of ridge-lines, degradation of the existing visual character, and introduction of new sources of light and glare. Additionally, the Plan Components would not substantially damage scenic resources within a State scenic highway corridor. As with the Plan Components, the No Project Alternative would permit new residential development. However, new residential development would occur with reduced density and only on the sites that are currently designated with residential land uses. In addition, this alternative would allow land use development consistent with Public Facilities and Limited Industry designations. Accordingly, development allowed by the No Project Alternative could alter the existing setting in a manner similar to that of the Plan Components.

Under the No Project Alternative the future housing on Site 1 (Veterans Affairs Clinic) would be the same as that under the Plan Components; therefore aesthetic impacts would be similar. No additional development is anticipated on Sites 2 and 3 (MidPen's Gateway Apartments) under the No Project Alternative; thus impacts to visual resources would be slightly less than those under the Plan Components.

Under the No Project Alternative, the current General Plan and Zoning Ordinance would not be amended to include additional policies that reinforce scenic resource protection in Menlo Park by preserving Heritage Trees, including during construction activities; integrate creeks, utility corridors, and other significant natural and scenic features into development plans; ensuring that new residential developments would be designed to be compatible with Menlo Park's residential character; blend well-designed new housing into the community; and encouraging well-designed mixed-use and second unit development. While the existing General Plan contains policies related to the protection of scenic resources, as stated above, these policies have been expanded and strengthened in the General Plan. Nonetheless, the additional development that could occur on Site 4 (Hamilton Avenue) and the new development on Site 5 (Haven Avenue) combined with the reduced residential units that could be built around the downtown area and in second unit locations would generally be less than that permitted under the Plan Components. Therefore, this combined with similar and less aesthetic impacts on Sites 1 (Veterans Affairs Campus) and Sites 2 and 3 (MidPen's Gateway Apartments), the No Project Alternative would overall result in *similar* impacts related to visual resources, in comparison to the Plan Components.

b. Air Quality

The horizon-year development levels anticipated for the No Project Alternative are less than those of the Plan Components. The Plan Components would result in significant and unavoidable air quality impacts with regard to implementation of the goals, policies, and programs under the Plan Components. Because the No Project Alternative would involve less horizon-year development and therefore less additional traffic, the impacts to air quality would be less than those of the Plan Components. While the potential future residential development under the Plan Components would not release toxic air contaminants (TACs), various industrial and commercial processes (e.g. manufacturing, dry cleaning) allowed under the existing General Plan would be expected to release TACs resulting in community risk and hazards from placement of new sources of air toxics near sensitive receptors. Because this would occur under both the No Project Alternative as well as the Plan Components, the impacts under both scenarios would be similar and compliance with current guidelines (e.g. Bay Area Air Quality Management District CEQA Guidelines) for new residential and industrial development would be required either way. Similar to the Plan Components, development under the No Project Alternative would occur under the guidance of the General Plan and the City's Climate Action Plan. Accordingly, the No Project Alternative would have *slightly reduced* air quality impacts than those of the Plan Components.

c. Biological Resources

Under the Plan Components, potential impacts to special-status plant and animal species, riparian habitat, wetlands, and biological resource plans and policies would be less than significant. In addition, the Plan Components include important new policies and actions to preserve, protect, maintain, and enhance biological resources in the EA Study Area. Under the No Project Alternative, development on the identified housing sites, infill areas around the downtown, and second unit locations would still be permitted, but with fewer units (30 units vs. 1,318 units). Since all of the potential locations of future housing under the Plan Components and under this alternative would be concentrated on sites either already developed and/or in close proximity to existing residential and residential-serving development where development will have a lesser impact on biological resources, impacts to biological resources would be similar in both scenarios.

However, as stated above, under this alternative, no new policies to protect biological resources would be adopted. While the existing General Plan contains policies related to the protection of biological resources, these policies have been expanded in the General Plan to require new development to minimize the disturbance of natural habitats and vegetation, and requires revegetation of disturbed natural habitat areas with native or non-invasive naturalized species; enforce landscaping practices that prohibit the use of invasive and non-native species; and require baseline assessments for development near sensitive habitats. Nonetheless,

because development under the No Project Alternative as well as that permitted under the Plan Components would occur on lands with existing development overall impacts to biological resource would be *similar* in comparison to the Plan Components.

d. Cultural Resources

Under the Plan Components, potential impacts to historical resources would be less than significant with implementation of Mitigation Measure CULT-1. While less development would occur on the future housing sites, infill around the downtown area and locations for second units under the No Project Alternative than under the Plan Components, which could reduce the extent of potential cultural resource impacts, the policies in the amended General Plan aimed at protecting cultural resources would also not be adopted. The existing General Plan currently contains policies related to the protection of cultural resources; however, these policies have been expanded and improved the General Plan policies to further preserve historical and cultural resources to the maximum extent practical; require significant historic or prehistoric artifacts be examined by a qualified consulting archaeologist or historian for appropriate protection and preservation; protect prehistoric or historic cultural resources either on site or through appropriate documentation as a condition of removal; and identify historic resources for the historic district in the Zoning Ordinance and require design review of proposals affecting historic buildings. In addition, Mitigation Measure CULT-1, which requires that individual projects that are proposed for residential development on any infill or second unit housing sites around the downtown area prepare site-specific historic resources evaluations, would not be required.

Therefore, although substantially less development would occur under the No Project Alternative, the amended General Plan policies aimed at protecting cultural resources would not be adopted and cultural resource impacts in comparison to the Plan Components would be *slightly greater* than those under the Plan Components.

e. Geology, Soils, and Seismicity

Under both the No Project Alternative and the Plan Components, consistency with the policies of the General Plan and compliance with the California Building Code (CBC) as new development occurs would ensure that impacts associated with geologic and seismic hazards would be less than significant.

The Plan Components introduce expanded and strengthened policies and programs that further minimize risk to life, environment, and property from natural hazards by integrating hazard data (geotechnical, flood, fire, etc.) and risk evaluations into the development review process and maintain, develop and adopt up-to-

date standards to reduce the level of risk from natural and human-caused hazards; modify the Zoning Ordinance as needed when new information on natural hazards becomes available and to provide for hazard reduction measures as a part of the design criteria for development review; require site-specific geologic and geotechnical studies for land development or construction in areas of potential land instability; and require that all new habitable structures to incorporate adequate hazard mitigation measures to reduce identified risks from natural and human-caused hazards. Although the No Project Alternative would not include the adoption of the new seismic safety policies in the General Plan, the existing General Plan includes similar policies related to seismic and geologic hazards to those in the amended General Plan. Therefore, overall the No Project Alternative would be *similar* to the Plan Components.

f. Greenhouse Gas Emissions

The Plan Components would result in a significant and unavoidable greenhouse gas (GHG) impact because ongoing activities in the EA Study area and the Plan Components would conflict with Executive Order S-03-05's goal to reduce GHG emissions by 80 percent below 1990 levels by 2050. As described in Chapter 4.6, Greenhouse Gas Emissions, transportation emissions from VMT are the largest contributor to emissions in the EA Study Area. Under horizon-year conditions, less development compared to that of the Plan Components would occur, and subsequently VMT levels and GHG emissions would be less.

While the existing General Plan does include some goals, policies and programs aimed at reducing GHG emissions, the Plan Components would promote a sustainable energy supply and implement City's Climate Action Plan to reduce greenhouse gas emissions and improve the sustainability of actions by City government, residents, and businesses in Menlo Park, including promoting land use patterns that reduce the number and length of motor vehicle trips, and promotion of recycling, reduction and reuse programs; promote and/or establish environmentally sustainable building practices or standards in new development; promote the installation of renewable energy technology; and undertake annual review and updates, as needed, to the City's Climate Action Plan. The No Project Alternative would not include General Plan goals, policies, and programs to reduce GHG emissions. Therefore, this alternative would result in a *slightly greater* GHG emission impacts in comparison to the Plan Components.

g. Hazards and Hazardous Materials

Under the Plan Components, consistency with the policies of the General Plan and compliance with the existing regulations and procedures as new development occurs would ensure that impacts associated with hazards and hazardous materials would be less than significant. Furthermore, under the Plan Components, the introduction of residential land uses on Site 5 (Haven Avenue) would be mitigated to a less-than-

significant level through Mitigation Measure HAZ-1. In addition, because the Plan Components are not located within two miles of an airport, airstrip, or airport land use plan, the Plan Components would not be exposed to airport hazard impacts.

The existing General Plan contains policies and programs related to hazards, but these policies have been expanded and strengthened in the General Plan by, for example, by requiring that all new habitable structures to incorporate adequate hazard mitigation measures to reduce identified risks from natural and human-caused hazards; requiring that sites planned for housing be cleared of hazardous materials (paint, solvents, chlorine, etc.) and the hazardous materials disposed in compliance with State and Federal laws; and requiring developers to conduct an investigation of soils, groundwater and buildings affected by hazardous-material potentially released from prior land uses in areas historically used for commercial or industrial uses, and to identify and implement mitigation measures to avoid adversely affecting the environment or the health and safety of residents or new uses. Although the No Project would not include these strengthened policies, development would be required to comply with existing regulations and procedures related to hazards and hazardous materials, and no housing would be introduced on Site 5 (Haven Avenue). Therefore, the No Project Alternative would be *similar* to the Plan Components.

h. Hydrology and Water Quality

Less development would occur in the EA Study Area under this alternative than under the Plan Components, which could reduce the area of impervious surfaces, thereby potentially lessening water quality and groundwater impacts, and reducing the exposure of people to flooding and failure of a dam or levee. However, since all of the potential locations of future housing under the Plan Components would be concentrated on sites with existing development, it is likely these impacts would not be significantly different than those of the Plan Components.

As under the Plan Components, new development under the No Project Alternative would need to comply with the National Pollution Discharge Elimination System (NPDES) General Permit, which requires the preparation of a Stormwater Pollution Prevention Plan (SWPPP) for projects that disturb one acre or more of land, and construction on smaller sites that are part of a larger project. Existing regulations and procedures, such as the City of Menlo Park Engineering Division's Grading and Drainage Control Guidelines and FEMA's flood zone mapping, would still apply.

Under the No Plan Component Alternative, policies of the existing General Plan would remain in place. The existing General Plan includes policies related to water conservation, flooding, and storm drainage.

However, under the Plan Components policies related to these topics would be expanded and strengthened by requiring that all new habitable structures to incorporate adequate hazard mitigation measures to reduce identified risks from natural and human-caused hazards; considering sea level rise in siting new facilities or residences within potentially affected areas; requiring that new community facilities located within dam inundation zones evaluate the potential for flooding and the impact on evacuation during the development approval process; and considering the threat of flooding and tsunamis in planning and management practices to minimize risk to life, environment and property and maintain up-to-date tsunami hazard zones maps and flood maps. Although the No Project would not include these strengthened policies, development would be required to comply with existing regulations and procedures related to hydrology and water quality. Therefore, the No Project Alternative would be *similar* to the Plan Components.

i. Land Use and Planning

The Plan Components would not result in any land use impacts. Future development permitted under the Plan Components would not divide an established community, conflict with a habitat conservation plan, or create a land use conflict. The General Plan policies that ensure new development are compatible with existing land uses, encourage the provision of open space and/or quality gathering and outdoor spaces, and balance development with preservation of land for open space uses would also apply to future development under the No Project Alternative. Therefore, land use and planning impacts under the No Project Alternative would be *similar* to those under the Plan Components.

j. Noise

The Plan Components include amended policies that require the City to 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; encourage the use of construction methods, state-of-the-art noise abating materials and technology and creative site design including, but not limited to, open space, earthen berms, parking, accessory buildings, and landscaping to buffer new and existing development from noise and to reduce potential conflicts between ambient noise levels and noise-sensitive land uses; and strive to achieve acceptable interior noise levels and exterior noise levels for backyards and/or common usable outdoor areas in new residential development, and reduce outdoor noise levels in existing residential areas. Under the No Project Alternative, new development would occur under the existing General Plan, which calls for less intensive development on the housing sites, infill areas around downtown, and on locations where second units could be constructed, but would permit land use development consistent with Public Facilities (Site 1 [Veterans Affairs Campus]) and Limited Industry (Site 4 [Hamilton Avenue] and Site 5 [Haven Avenue]) designations, which in general have the potential to generate more noise than residential land uses and associated traffic.

The No Project Alternative would not include the new policies addressing noise impacts. However, because the No Project Alternative would result in substantially fewer residential units, noise impacts would be *slightly reduced* when compared to those of the Plan Components.

k. Population and Housing

The future housing under the No Project Alternative would generate less population (76 vs. 3,361 new residents) and housing (30 vs. 1,318 units) in the EA Study Area than that of the Plan Components under horizon-year conditions. Since the Plan Components would not exceed the Association of Bay Area Governments' (ABAG's) most recent projections for population or housing in Menlo Park, accordingly the No Plan Component Alternative would also not exceed the ABAG projections. Furthermore, given that the future residential development on infill sites around downtown and potential housing Sites 2 and 3 (MidPen's Gateway Apartments) could involve the demolition and replacement of existing housing units, which would result in the temporary displacement of some residents under both the Plan Components and No Project Alternative, impacts to the displacement of substantial numbers of existing housing and people would be the same under both scenarios. Therefore, because neither the Plan Components nor the No Project Alternative would result in significant impacts to population or housing, the No Project Alternative would be *similar* to the Plan Components.

l. Public Services and Recreation

As stated above in Section, B.2.k, the No Plan Alternative would result in less horizon-year development as compared to the Plan Components. Therefore, the No Project Alternative would generate less demand for police, fire protection, school, library, and park and recreation services. The No Project Alternative would result in significantly less development and as a result public services and recreation impacts from development guided under the goals, policies, and programs of the existing General Plan would be *slightly reduced* when compared to those of the Plan Components.

m. Transportation and Traffic

The horizon-year development levels anticipated for the No Project Alternative are less than those of the Plan Components. As shown in Chapter 4.13, Transportation and Traffic, the Plan Components would cause roadway intersections and roadway and freeway segments to degrade below acceptable level of service standards, creating significant and unavoidable impacts. The No Project Alternative would not create the additional trips produced under the Plan Component and would not result in the significant and unavoidable impacts of the Plan Components. Therefore, because the No Plan Component Alternative would per-

mit significantly less residential development, the impacts with respect to level of service standards are considered *slightly reduced* under horizon-year conditions.

The Plan Components would not result in significant impacts related to air traffic, roadway hazards, or alternative transportation. Although the No Project Alternative would have similar impacts related to air traffic and roadway hazards, it would not include the new General Plan goals, policies, and programs that promote land use patterns that reduce the number and length of motor vehicle trips.

Overall, while the General Plan transportation policies would be the same as those under found in the Plan Components, because the No Project Alternative would have reduced impacts related to roadway intersections and segments and this alternative would result in a *slightly reduced* transportation and traffic impacts in comparison to the Plan Components.

n. Utilities and Service Systems

As stated above in Section, B.2.k, the horizon-year development levels anticipated for the No Project Alternative are less than those of the Plan Components. Therefore, the No Project Alternative would generate less demand for water supply, wastewater, stormwater, solid waste, and energy supplies, services, and facilities.

The No Project would result in significantly less development and therefore, impacts to utilities and services systems from development guided under the goals, policies and programs of the existing General Plan would be *slightly reduced* from those of the Plan Components.

C. Reduced Density Alternative

1. Principal Characteristics

Under this alternative, the overall number of potential housing units that would be permitted by adopting and implementing the Housing Element Update, General Plan Consistency Update, and associated Zoning Ordinances amendments would be reduced by 25 percent. This would result in a total of 988 housing units, which represents 330 fewer housing units than the Plan Components. As a result, the Reduced Density Alternative would result in the generation of 2,520 new residents to Menlo Park.

The General Plan goals, policies and programs, and associated Zoning Ordinance amendments would be the same as those of the Plan Components.

2. Impact Discussion

The Reduced Density Alternative would have the following impacts relative to the Plan Components:

a. Aesthetics and Visual Resources

Under this alternative, fewer residential units would be developed; however, residential development would still occur throughout the EA Study Area and the potential for adverse impacts to visual resources would still occur. As with the Plan Components, the Reduced Density Alternative would be guided by the existing and additional new General Plan policies that reinforce scenic resource protection in Menlo Park by preserving Heritage Trees, including during construction activities; integrate creeks, utility corridors, and other significant natural and scenic features into development plans; ensuring that new residential developments would be designed to be compatible with Menlo Park's residential character; blend well-designed new housing into the community; and encouraging well-designed mixed-use and second unit development.

Accordingly, as with the Plan Components, development under the Reduced Density Alternative would not result in significant impacts associated with blocking views of ridgelines, degrading the existing visual character, or introducing new sources of light and glare, and would not substantially damage scenic resources within a State scenic highway corridor. Therefore, the Reduced Density Alternative would result in *similar* impacts related to visual resources in comparison to the Plan Components.

b. Air Quality

The horizon-year development levels anticipated for the Reduced Density Alternative are less than those of the Plan Components. The Plan Components would result in significant and unavoidable air quality impacts with regard to implementation of the goals, policies, and programs under the Plan Components. Because the Reduced Density Alternative would involve less horizon-year development and therefore less additional traffic, the impacts to air quality would be less than those of the Plan Components. Under the Reduced Density Alternative future development would occur under the guidance of the General Plan and the City's Climate Action Plan, accordingly, the Reduced Density Alternative would have *slightly reduced* air quality impacts than those of the Plan Components.

c. Biological Resources

Under the Plan Components, potential impacts to special-status plant and animal species, riparian habitat, wetlands, and biological resource plans and policies would be less than significant. In addition, as with the Plan Components, the Reduced Density Alternative would be subject to the new General Plan policies related to the protection of biological resources, which would require new development to minimize the dis-

turbance of natural habitats and vegetation, and requires revegetation of disturbed natural habitat areas with native or non-invasive naturalized species; enforce landscaping practices that prohibit the use of invasive and non-native species; and require baseline assessments for development near sensitive habitats.

However, under the Reduced Density Alternative, development on the identified housing sites, infill areas around the downtown and second unit locations would still be permitted, but with fewer units (988 units vs. 1,318 units). Since all of the potential locations of future housing under the Plan Components and under this alternative would be concentrated on sites either already developed, and/or in close proximity to existing residential and residential-serving development, where development will have a lesser impact on biological resources, impacts to biological resources would be similar in both scenarios. Therefore, the Reduced Density Alternative would result in *similar* impacts related to biological resources in comparison to the Plan Components.

d. Cultural Resources

Less development would occur on the future housing sites, infill around the downtown area and locations for second units under the Reduced Density Alternative than under the Plan Components, which could reduce the extent of potential cultural resource impacts. However, similar to the Plan Components, the policies in the General Plan that have been expanded and improved in the General Plan to further preserve historical and cultural resources to the maximum extent practical; require significant historic or prehistoric artifacts be examined by a qualified consulting archaeologist or historian for appropriate protection and preservation; protect prehistoric or historic cultural resources either on site or through appropriate documentation as a condition of removal; and identify historic resources for the historic district in the Zoning Ordinance and require design review of proposals affecting historic building would also be adopted. Therefore, the Reduced Density Alternative would result in *similar* cultural resource impacts in comparison to the Plan Components.

e. Geology, Soils, and Seismicity

Under both the Reduced Density Alternative and the Plan Components, consistency with the policies of the General Plan and compliance with the CBC as new development occurs would ensure that impacts associated with geologic and seismic hazards would be less than significant.

Similar to the Plan Components, the Reduced Density Alternative would introduce expanded and strengthened policies and programs that further minimize risk to life, environment, and property from natural hazards by integrating hazard data (geotechnical, flood, fire, etc.) and risk evaluations into the development

review process and maintain, develop and adopt up-to-date standards to reduce the level of risk from natural and human-caused hazards; modify the Zoning Ordinance as needed when new information on natural hazards becomes available and to provide for hazard reduction measures as a part of the design criteria for development review; require site-specific geologic and geotechnical studies for land development or construction in areas of potential land instability; and require that all new habitable structures to incorporate adequate hazard mitigation measures to reduce identified risks from natural and human-caused hazards. Therefore, the Reduced Density Alternative would be *similar* to the Plan Components.

f. Greenhouse Gas Emissions

The Plan Components would result in a significant and unavoidable GHG impact because the ongoing activities in the city and the Plan Components would conflict with Executive Order S-03-05's goal to reduce GHG emissions by 80 percent below 1990 levels by 2050. As described in Chapter 4.6, Greenhouse Gas Emissions, transportation emissions from VMT are the largest contributor to emissions in the EA Study Area. Under horizon-year conditions, less development compared to that of the Plan Components would occur, and therefore VMT levels and GHG emissions would be less.

While the existing General Plan does include some goals, policies and programs aimed at reducing GHG emissions, the Plan Components would promote a sustainable energy supply and implement City's Climate Action Plan to reduce greenhouse gas emissions and improve the sustainability of actions by City government, residents, and businesses in Menlo Park, including promoting land use patterns that reduce the number and length of motor vehicle trips, and promotion of recycling, reduction and reuse programs; promote and/or establish environmentally sustainable building practices or standards in new development; promote the installation of renewable energy technology; and undertake annual review and updates, as needed, to the City's Climate Action Plan. The Reduced Density Alternative would include the General Plan goals, policies, and programs to reduce GHG emissions. Therefore, this alternative would result in a *slightly reduced* GHG emission impacts in comparison to the Plan Components.

g. Hazards and Hazardous Materials

Similar to the Plan Components, under the Reduced Density Alternative, consistency with the policies of the General Plan, compliance with the existing regulations and procedures as new development occurs and recommended Mitigation Measure HAZ-1 for Site 5 (Haven Avenue) would be required; thus ensuring that impacts associated with hazards and hazardous materials would be less than significant. In addition, because the development that would occur under both the Plan Components and the Reduced Density Alternative would not be located within two miles of an airport, airstrip, or airport land use plan, new development

under both scenarios would not be exposed to airport hazard impacts. The General Plan policies and programs related to hazards, which have been expanded and strengthened in the amended General Plan requiring that all new habitable structures to incorporate adequate hazard mitigation measures to reduce identified risks from natural and human-caused hazards; considering sea level rise in siting new facilities or residences within potentially affected areas; requiring that new community facilities located within dam inundation zones evaluate the potential for flooding and the impact on evacuation during the development approval process; and considering the threat of flooding and tsunamis in planning and management practices to minimize risk to life, environment and property and maintain up-to-date tsunami hazard zones maps and flood maps would apply to the Reduced Density Alternative same as the Plan Components. Therefore, overall the hazards and hazardous materials impacts under the Reduced Density Alternative would be *similar* to those of the Plan Components.

h. Hydrology and Water Quality

Less development would occur in the EA Study Area under this alternative than under the Plan Components, which could reduce the area of impervious surfaces and thereby potentially lessen water quality and groundwater impacts and reduce the exposure of people to flooding and failure of a dam or levee. However, since all of the potential locations of future housing under the Plan Components would be concentrated on sites with existing development, it is likely these impacts would not be significantly different than those of the Plan Components.

As under the Plan Components, new development under the Reduced Density Alternative would need to comply with the NPDES General Permit, which requires the preparation of a SWPPP for projects that disturb one acre or more of land, and construction on smaller sites that are part of a larger project. Existing regulations and procedures, such as the City of Menlo Park Engineering Division's Grading and Drainage Control Guidelines and FEMA's flood zone mapping, would still apply.

While the existing General Plan includes policies related to water conservation, flooding, and storm drainage, under the Reduced Density Alternative, policies under the Plan Components related to hydrology and water quality would be expanded and strengthened by promoting water conservation and preserving the maximum amount of on-site open space by applying efficient and sustainable design practices. Additionally, policies aimed at preventing hazardous conditions associated with flooding would also be adopted. Accordingly, even though fewer residential units would be permitted under the Reduced Density Alternative, hydrology and water quality impacts in comparison to the Plan Components would be *similar*.

i. Land Use and Planning

Under the Reduced Density Alternative, same as the Plan Components, future residential development would not result in any land use impacts. Future development permitted under the Plan Components and the Reduced Density Alternative would not divide an established community, conflict with a habitat conservation plan, or create a land use conflict. The General Plan policies that ensure new development, including infill around the downtown area and secondary units, are compatible with existing land uses, encourage the provision of open space and/or quality gathering and outdoor spaces, and balance development with preservation of land for open space uses would also apply to future development under the Reduced Density Alternative. Accordingly, the land use and planning impacts under the Reduced Density Alternative would be *similar* to those of the Plan Components.

j. Noise

Less development would occur on the future housing sites, infill around the downtown area and locations for second units under the Reduced Density Alternative than under the Plan Components, which could reduce the extent of noise impacts related to residential generated traffic. However, similar to the Plan Components, the policies in the General Plan that have been expanded and improved in the General Plan that require the City to 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; encourage the use of construction methods, state-of-the-art noise abating materials and technology and creative site design including, but not limited to, open space, earthen berms, parking, accessory buildings, and landscaping to buffer new and existing development from noise and to reduce potential conflicts between ambient noise levels and noise-sensitive land uses; and strive to achieve acceptable interior noise levels and exterior noise levels for backyards and/or common usable outdoor areas in new residential development, and reduce outdoor noise levels in existing residential areas. These policies would also apply to new development under the Reduced Density Alternative. However, because the Reduced Density Alternative would result in 330 fewer residential units, noise impacts would be *slightly reduced* when compared to those of the Plan Components.

k. Population and Housing

The future housing under the Reduced Density Alternative would induce less population (2,520 vs. 3,361 new residents) and housing (988 vs. 1,318 units) in the EA Study Area than that of the Plan Components under horizon-year conditions. Since the Plan Components would not exceed ABAGs most recent projections for population or housing in Menlo Park, the Reduced Density Alternative would not exceed the ABAG projections. Furthermore, given that the future residential development on infill sites around downtown and potential housing Sites 2 and 3 (MidPen's Gateway Apartments) could involve the demolition and

replacement of existing housing units, which would result in the temporary displacement of some residents under both the Plan Components and Reduced Density Alternative, impacts to the displacement of substantial numbers of existing housing and people would be the same under both scenarios. Therefore, because neither the Plan Components nor the Reduced Density Alternative would result in significant impacts to population or housing, the Reduced Density Alternative would be *similar* to the Plan Components.

l. Public Services and Recreation

As stated above in Section, C.2.k, the Reduced Density Alternative would result in less horizon-year development as compared to the Plan Components. Therefore, the Reduced Density Alternative would generate less demand for police, fire protection, school, library, and park and recreation services. Therefore, because the Reduced Density Alternative would result in 330 fewer residential units, impact to public services and recreation impacts would be *slightly reduced* from those of the Plan Components.

m. Transportation and Traffic

The horizon-year development levels anticipated for the Reduced Density Alternative are less than those of the Plan Components. As shown in Chapter 4.13, Transportation and Traffic, the Plan Components would cause roadway intersections and roadway and freeway segments to degrade below acceptable level of service standards, creating significant and unavoidable impacts. The Reduced Density Alternative would also create additional trips. While these trips would be less, they would likely result in impacts to similar to those produced under the Plan Components. Therefore, because the Reduced Density Alternative would permit less residential development, the impacts with respect to level of service standards are considered *slightly reduced* under horizon-year conditions.

The Plan Components would not result in significant impacts related to air traffic, roadway hazards, or alternative transportation. Furthermore, the Reduced Density Alternative would have similar impacts related to air traffic and roadway hazards and it would include the new General Plan goals, policies, and programs that promote land use patterns that reduce the number and length of motor vehicle trips.

Overall, because the Reduced Density Alternative would have similar impacts related to roadway intersections and segments, and include the alternative transportation policies and measures found in the Plan Components, this alternative would result in a *slightly reduced* transportation and traffic impacts as a result of introducing 330 fewer residential units in comparison to the Plan Components.

n. Utilities and Service Systems

As stated above in Section, C.2.k, the horizon-year development levels anticipated for the Reduced Density Alternative are the less than those of the Plan Components. Therefore, the Reduced Density Alternative would generate a less demand for water supply, wastewater, stormwater, solid waste, and energy supplies, services, and facilities. The Reduced Density Alternative would result in less development and impacts to utilities and services systems from future residential development would be *slightly reduced* from those of the Plan Components.

D. Ability to Meet Plan Components Objective

This section describes how each alternative would meet the Plan Components objectives, described in Chapter 3 of this EA, and repeated here for reference:

1. Plan Components Objectives:

- “ **Ensure Overall Community Quality of Life:** Develop a vision for Menlo Park that supports sustainable local, regional, and State housing, transportation, and environmental goals, while maintaining the high quality of life, small town feel, and village character of Menlo Park, which make it distinctive and enjoyable to its residents.
- “ **Address Housing Needs:** Assess housing needs and provide a vision for housing within the city to satisfy the needs of a diverse population to comply with State law and provide the City’s regional fair share of land available for residential development.
- “ **Provide a Variety of Housing Choices:** Provide a variety of housing opportunities proportionally by income to accommodate the needs of people who currently work or live in Menlo Park, such as teachers, young people just getting started, and seniors who want to down-size, who either cannot find homes or cannot afford market-rate housing in Menlo Park.
- “ **Address the City’s Share of Regional Housing Needs:** Ensure General Plan and Zoning capacity for an adequate number of new housing units to meet the Regional Housing Need Allocation at all income levels for the current (2007 to 2014) and prior (1999 to 2006) planning periods.
- “ **Ensure New Development Compatibility:** Ensure that development of new housing is sensitive to and compatible with adjacent neighborhoods.
- “ **Preserve Existing Housing:** Maintain the existing housing stock.

- “ **Provide Effective Housing Policies and Programs:** Continue existing and develop new programs and policies to meet the projected affordable housing need, including the needs of persons living with disabilities and other special needs households at extremely low, very low, low, and moderate income levels.
- “ **Remove Constraints that Unduly Impact Housing Development:** Evaluate potential constraints to housing development and encourage new housing in locations supported by existing or planned infrastructure, while maintaining existing neighborhood character.
- “ **Ensure Appropriate Zoning for Special Needs Housing:** Provide housing for seniors, person living with disabilities, female-headed households, large families, homeless, and other persons with special housing needs, including zoning for emergency shelter, transitional, and supportive housing opportunities.
- “ **Provide Design Guidance for New Development to Fit with Community Character:** Develop design guidelines or similar tools to ensure development of housing for all income levels while maintaining community character.
- “ **Provide Adequate Sites for Higher Density Housing Consistent with the City’s RNHA Requirements:** Identify appropriate housing sites, within specified areas proximate to transportation, shopping, and schools, and the accompanying zoning required to accommodate housing development for higher density residential development and to encourage affordable housing development.
- “ **Comply with the Settlement Agreement:** Present a Housing Element that meets the requirements of the Settlement Agreement and is completed within the timeframe established in the Settlement Agreement.
- “ **Achieve Housing Element Certification:** Obtain certification of the City’s Housing Element by the State’s Department of Housing and Community Development as substantially in compliance with State Housing Element law.
- “ **Assure Consistency of All General Plan Elements:** Make all elements of the General Plan consistent with the Housing Element update.
- “ **Provide Incentives to Encourage Affordable Housing:** Establish an Affordable Housing Overlay Zoning designation and other policies and programs to encourage affordable housing development.
- “ **Ensure Implementation of Housing Element and General Plan Programs:** Complete amendments to the Menlo Park Zoning Ordinance and other programs in a timely manner consistent with the Housing Element and the General Plan.

- “ **Implement City Actions in Support of Affordable Housing Development:** Implement policies and programs in the Housing Element in support of affordable housing, including the allocation of funds from the City’s below market rate housing fund and support of developments determined by the City to be viable for Low Income Housing Tax Credit funding.

2. No Project Alternative

Under the No Project Alternative, the Plan Components would not be adopted and implemented, and therefore this alternative does not meet any of the Plan Components objectives.

3. Reduced Density Alternatives

This alternative would provide the required number of homes to ensure General Plan and Zoning capacity for an adequate number of new housing units to meet the RHNA at all income levels for the current (2007 to 2014) and prior (1999 to 2006) planning periods and would adopt and implement the goals, policies and programs of the Plan Components. Accordingly, this alternative would meet all of the objectives.

E. Environmentally Superior Alternative

In addition to the discussion and comparison of impacts of the Plan Components and the alternatives, Section 15126.6 of the State CEQA Guidelines requires that an “environmentally superior” alternative be selected and the reasons for such a selection be disclosed. In general, the environmentally superior alternative is the alternative that would be expected to generate the least amount of significant impacts. Identification of the environmentally superior alternative is an informational procedure and the alternative selected may not be the alternative that best meets Plan Components objectives. The Plan Components under consideration cannot be identified as the Environmentally Superior Alternative. As shown in Table 5-1, the Reduced Density Alternative is the Environmentally Superior Alternative as it would result in reduced air quality, GHG emissions, noise, public services and recreation, transportation and traffic, and utilities and services systems impacts when compared to the Plan Components.

CITY OF MENLO PARK
HOUSING ELEMENT UPDATE, GENERAL PLAN CONSISTENCY UPDATE,
AND ZONING ORDINANCE AMENDMENTS ENVIRONMENTAL ASSESSMENT
ALTERNATIVES TO THE PROPOSED PLAN COMPONENTS

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