EDEN AREA GENERAL PLAN DRAFT EIR

County of Alameda | September 15, 2006

DESIGN, COMMUNITY & ENVIRONMENT

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1 INTRODUCTION

This Environmental Impact Report (EIR) has been prepared to provide an assessment of the potential environmental consequences of adoption and implementation of the proposed Eden Area General Plan. This assessment is designed to inform County of Alameda decision-makers, other responsible agencies and the public-at-large of the nature of the General Plan and its effect on the environment. This EIR has been prepared in accordance with and in fulfillment of California Environmental Quality Act (CEQA) requirements. The Alameda County Community Development Agency is the Lead Agency for the project.

A. Proposed Action

The proposed project, the Eden Area General Plan, is a complete revision of the existing General Plan, for which no comprehensive update has been completed since 1983. The General Plan is the principal policy document for guiding future conservation and development of the area. The proposed Plan has a long-term planning horizon, addressing a 20-year time frame through 2025, yet it provides overall direction to the day-to-day decisions of the County, its commissions and staff. The proposed General Plan is described in more detail in Chapter 3.

The General Plan includes goals, policies and actions designed to implement the community's vision for the Eden Area. The policies and actions are intended for use by the County to guide day-to-day decision-making and to ensure progress toward the attainment of the goals outlined in the Plan.

B. EIR Scope, Issues and Concerns

This document is a Program EIR that analyzes the proposed adoption and implementation of the Eden Area General Plan. As a Program EIR, the EIR is not project-specific and does not evaluate the impacts of specific projects that may be proposed under the General Plan. Such projects will require

separate environmental review to secure the necessary discretionary development permits. While subsequent environmental review may be tiered off this EIR, this EIR is not intended to address impacts of individual projects.

The scope of this Draft EIR was established by Alameda County through the General Plan process. Issues addressed in this EIR are the following:

1. Land Use
2. Community Services
3. Traffic and Circulation
4. Infrastructure
5. Hazardous Materials
6. Aesthetics
7. Cultural Resources
8. Geology, Soils and Seismic Hazards
9. Hydrology and Flooding
10. Biological Resources
11. Noise
12. Air Quality

C. Report Organization

This EIR is organized into the following chapters:

- *Chapter 1: Introduction* provides a preface and overview describing both the intended use of the document and the review and certification process of both the General Plan and the EIR.
- *Chapter 2: Report Summary* summarizes environmental consequences that would result from the proposed project, describes recommended mitigation measures and indicates the level of significance of environmental impacts before and after mitigation. A Summary Table is also included for clarity.
- *Chapter 3: Project Description* describes the proposed General Plan in detail, including a summary of the chapters of the General Plan and a listing of proposed land use designation changes.
- *Chapter 4: Environmental Evaluation* provides an analysis of the potential environmental impacts of the proposed General Plan and presents recommended mitigation measures, if required, to reduce their significance.

- *Chapter 5: Alternatives to the Proposed Project* considers three alternatives to the proposed project, including the CEQA-required "No Project Alternative."
- *Chapter 6: CEQA-Required Assessment Conclusions* discusses growth inducement, cumulative impacts, unavoidable significant effects and significant irreversible changes as a result of the project.
- *Chapter 7: Report Preparers and References* identifies the data sources and preparers of the Draft EIR.

D. Environmental Review Process

The Draft EIR will be available for review by the public and interested parties, agencies and organizations for a period of at least 45 days, as required by State law. A public hearing on the Draft EIR will be held during the review period, during which oral comments are welcome. Written comments on the Draft EIR are also encouraged for incorporation into the Final EIR and should be submitted to:

Ms. Cindy Horvath
Community Development Agency, Alameda County
224 West Winton Avenue, Room 111
Hayward, CA 94544-1307

Following the close of the public comment period, a Final Environmental Impact Report (FEIR) will be prepared to respond to all substantive comments regarding the Draft EIR. The FEIR will be made available for public review prior to consideration of its certification by the Alameda County Board of Supervisors. Once the Board of Supervisors certifies the FEIR, the Board will also consider adoption of the Eden Area General Plan itself, which may be approved as drafted or modified, or denied.

2 REPORT SUMMARY

This summary presents an overview of the analysis contained in *Chapter 4: Environmental Evaluation*. CEQA requires that this chapter summarize the following: 1) areas of controversy; 2) significant impacts; 3) unavoidable significant impacts; 4) implementation of mitigation measures; and 5) alternatives to the project.

A. Project Under Review

This Draft EIR provides an assessment of the potential environmental consequences of adoption of the Eden Area General Plan. The General Plan is intended to serve as the principal policy document for guiding future conservation and development in the Eden Area. The proposed General Plan includes goals, policies and actions which have been designed to implement the County's and community's vision for the Eden Area. The policies and actions would be used by the County to guide day-to-day decision-making so there is continuing progress toward the attainment of the Plan's goals. The proposed General Plan proposes land use designations that have been proposed to implement the overall goals and vision of the General Plan. The General Plan is further detailed in Chapter 3 of this EIR.

B. Areas of Controversy

The County issued a Notice of Preparation for this EIR on June 16, 2004. The County held a scoping meeting on May 27, 2004, and a scoping period for this EIR between May 27 and July 16, 2004, during which interested agencies and the public could submit comments about the proposed General Plan. The comments received focused primarily on the following issues:

- Potential contamination of any new sites that would be designated residential.
- Noise pollution impacts.
- Traffic impacts of proposed development.

- Infrastructure needs associated with new students that could potentially be generated as a result of implementing the proposed General Plan.

All of these issues were addressed in the General Plan process. To the extent that these issues have environmental impacts, they are also addressed in this EIR.

C. Significant Impacts

Under 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 the project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic and aesthetic significance.

Implementation of the proposed General Plan, in combination with long-term, region-wide growth and development, has the potential to generate environmental impacts in a number of areas. However, the Plan has been developed to be largely self-mitigating, and as a result, there are very few impacts that would occur solely on the basis of implementation of the proposed Plan.

Nonetheless, the implementation of the proposed Plan has the potential to generate eight significant environmental impacts in a number of areas which are listed below:

- Traffic and Circulation
- Air Quality
- Noise

As shown in Table 2-1, all but one of the significant impacts in these areas would be reduced to a less-than-significant level if the mitigation measures recommended in this report were implemented. This impact is discussed below in Section E: Unavoidable Significant Impacts.

D. Mitigation Measures

This Draft EIR suggests mitigation measures that would reduce the impacts identified above to less-than-significant levels, as summarized in Table 2-1 at the end of this chapter. Mitigation measures in this Draft EIR will form the basis of a Mitigation Monitoring Program to be implemented in accordance with State law.

E. Unavoidable Significant Impacts

The proposed General Plan would have one significant unavoidable impact, which involves the ability of the existing circulation infrastructure to handle the growth under the proposed General Plan. These impacts are discussed further in Sections 4.3, Traffic and Circulation Chapter.

1. Traffic and Circulation

The growth under the proposed General Plan would contribute traffic to regional freeways (I-580 and I-880) that are currently operating unacceptably or are forecasted to operate unacceptably under year 2025 conditions with the addition of regional traffic and traffic generated by the proposed General Plan. Direct mitigation of the impact on these freeway segments is not feasible. Factors that limit the mitigation of impacts include constrained right-of-way, regional funding limitations, and the inherent difficulties with widening freeways, such as the need to widen over crossings and structures adjacent to the freeway. Such improvements are not under control of the County.

F. Alternatives to the Project

This Draft EIR analyzes alternatives to the proposed Eden Area General Plan. Three alternatives to the proposed project are considered and described in detail in Chapter 5:

- No Project Alternative

- Spread Development Alternative
- Expanded Jobs Alternative

As shown in the alternatives analysis in Chapter 5, the Expanded Jobs Alternative has the least environmental impact and is therefore the environmentally superior alternative. This alternative would lessen impacts to community services and reduce the risk in regards to hazards and hazardous materials and hence is environmentally superior to the 2025 General Plan.

Although the Expanded Jobs Alternative would benefit the area's employment base, the smaller number of housing units would also make it more difficult to accommodate growth projected for the next 20 years in the area, and to provide needed affordable and other housing opportunities. Additionally, the Alternative may not meet the overall objective of the plan which is to increase the quality of life in the area and to create meeting places for residents with nodes of activity, with prominence given to pedestrians. For this reason, the County is moving forward with the proposed General Plan. Details of the alternatives analysis are included in Chapter 5.

G. Summary Table

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 mitigation 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. Additionally, this summary does not detail the timing of mitigation measures. Timing will be further detailed in the mitigation monitoring program.

TABLE 2-1 **SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Significant Impact	Significance Before Mitigation	Mitigation Measures	Significance With Mitigation
LAND USE			
There are no significant land use impacts.			
COMMUNITY SERVICES			
There are no significant community services impacts.			
TRAFFIC & CIRCULATION			
Impact CIR-1: The growth under the proposed General Plan would contribute traffic to regional freeways (I-580 and I-880) that are currently operating unacceptably or are forecasted to operate unacceptably under year 2025 conditions with the addition of regional traffic and traffic generated by the proposed General Plan. Direct mitigation of the impact on these freeway segments is not feasible. Factors that limit the mitigation of impacts include constrained right-of-way, regional funding limitations, and the inherent difficulties with widening freeways, such as the need to widen over crossings and structures adjacent to the freeway. This would be a *significant and unavoidable* cumulative impact.	S	No mitigation is available for this impact.	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 With Mitigation
Impact CIR-2: The proposed General Plan would result in a decline in level of service (LOS) from LOS E to F at the signalized intersection of Grant/Washington/Via Alamitos during the PM peak hour. This intersection is located close to a school and experiences significant pedestrian volumes before and after school hours. This would be a *significant* impact.	S	Mitigation Measure CIR-2: The County should update its capital improvement program to include one of the following two improvement options at this intersection: ♦ Option A: Re-align the Grant/Washington/Via Alamitos intersection to allow east/west movements (on Grant Avenue) without split-phase operations. (Currently, east-bound and west-bound movements have separate signal phases.) The intersection would operate acceptably at LOS D with this improvement. Improving the intersection alignment would also be desirable to enhance pedestrian circulation. ♦ Option B: Add a second southbound (heading towards Via Alamitos) right-turn lane on Washington, approaching the Grant/Washington/ Via Alamitos intersection. The intersection would operate at LOS E with this mitigation, which would be an acceptable LOS for intersections located near schools based upon LOS criteria that would be adopted as part of the proposed General Plan. However, provision of a second southbound right-turn lane could result in undesirable crossing conditions for pedestrians. With the improvement, the intersection would operate at acceptable levels of service in all peak study periods. However, the improvement is not included in the current capital improvement program and there is no funding programmed for the improvement. Until such time as the recommended measures are programmed. This impact would be considered *significant and unavoidable*.	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 With Mitigation
Impact CIR-3: The proposed General Plan would result in increased delay at the side-street stop-controlled Mission/Blossom intersection during the PM peak hour. This intersection currently operates at LOS F (indicating failing conditions) during the PM peak hour and delay would increase by more than five seconds with the Proposed General Plan. This would be a *significant* impact.	S	Mitigation Measure CIR-3: The County should update its capital improvement program to plan for signalization of the Mission/Blossom intersection. Following signalization, this intersection would operate acceptably at LOS D during the PM peak hour. With the improvement, the intersection would operate at acceptable levels of service in the PM peak study period. However, the improvement is not included in the capital improvement program and there is no funding programmed for the improvement. Until such time as the recommended measures are programmed. This impact would be considered significant and unavoidable.	SU
INFRASTRUCTURE			
There are no significant infrastructure impacts.			
HAZARDOUS MATERIALS			
There are no significant hazardous materials impacts			
AESTHETICS			
There are no significant aesthetics impacts.			
CULTURAL RESOURCES			
There are no significant cultural resources impacts			

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 With Mitigation
GEOLOGY, SOILS AND SEISMICITY			
There are no significant geology, soil and seismicity impacts.			
HYDROLOGY AND FLOODING			
There are no significant hydrology and flooding impacts.			
BIOLOGICAL RESOURCES			
There are no significant biological resources impacts.			
AIR QUALITY			
Impact AIR-1: Growth in the Eden Area associated with build out of the General Plan would not be consistent with the latest Clean Air Plan assumptions since population and VMT growth would exceed ABAG and MTC projections.	S	Mitigation Measure AIR-1: A policy should be added to the Land Use Element requiring that new development projects be analyzed in accordance with the BAAQMD CEQA Guidelines. Appropriate mitigation measures to reduce vehicle trips and vehicle miles traveled should be applied to projects. Although implementation of Mitigation Measure AIR-1 would help to reduce air emissions associated with new development under the General Plan, there are no mitigation measures available beyond these measures that could reduce the level of the impact.	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 With Mitigation
Impact AIR-2: Development under the General Plan could emit toxic air contaminants or odors that could affect nearby sensitive land uses. In addition, new sensitive receptors resulting from development under the General Plan may be exposed to sources of toxic air contaminants and odors.	S	Mitigation Measure AIR-2a: Add a new policy under Goal LU-11 of the Land Use Element that would require any new development that would emit air toxic contaminants or odors to provide adequate buffers to protect sensitive land uses from unhealthy levels of air pollution or objectionable odors.	LTS
		Mitigation Measure AIR-2b: Add a new policy under Goal LU-11 of the Land Use Element requiring that any new development involving sensitive receptors shall be located an adequate distance from sources of air pollution and odor such as freeways, arterial roadways and stationary air pollutant sources. The following Action should be adopted to support this policy: "The County shall encourage that development projects including sensitive land uses (e.g. residences and schools) be located outside of the CARB recommended buffers for specific sources of air pollution (as shown in Table 4.11-3), to the extent feasible unless project specific analyses indicate an acceptable level of health risk. Project review should include an evaluation of the adequacy of setbacks and, if necessary, identify measures to reduce health risks."	
Impact AIR-3: Construction associated with development of projects under the proposed General Plan would temporarily increase air pollutant emissions, possibly creating localized areas of unhealthy air pollution levels or air quality nuisances.	S	Mitigation Measure AIR-3: Apply control measures to reduce PM_{10} emissions from construction activities. The following list of feasible control measures, recommended by the BAAQMD for construction projects, shall be included as requirements at construction sites to reduce air pollutant emissions. For all construction projects: ♦ Sprinkle all active construction areas at least twice daily and more often when conditions warrant. ♦ Cover all trucks hauling soil, sand and other loose materials or require all trucks to maintain at least 2 feet of freeboard. ♦ Pave, apply water three times daily, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas and staging areas at construction sites.	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 With Mitigation
AIR-3 *(cont'd)*		♦ Sweep daily all paved access roads, parking areas, and staging areas at construction sites. ♦ Sweep streets daily if visible soil material is carried onto adjacent public streets. For construction sites greater than 4 acres in size: ♦ 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 traffic speeds on unpaved roads to 15 miles per hour. ♦ Install sandbags or other erosion control measures to prevent silt runoff to public roadways. ♦ Replant vegetation in disturbed areas as quickly as possible. For construction sites that are located adjacent to sensitive receptors or warrant additional controls: ♦ Install wheel washers for all exiting trucks, or wash off all trucks and equipment leaving the site. ♦ Suspend grading activities when winds exceed 25 miles per hour (mph) and visible dust clouds cannot be prevented from extending beyond active construction areas. ♦ Limit the area subject to excavation, grading and other construction activity at any one time.	

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 With Mitigation
NOISE			
Impact NOI-1: New development proposed along existing railroad lines, and near Grant Avenue, could expose residents to vibration levels in excess of Federal standards. The proposed General Plan does not address potential groundborne vibration impacts.	S	Mitigation Measure NOI-1: A policy should be added to the proposed General Plan under Goal N-1 that states that the County will seek to reduce impacts from groundborne vibration associated with rail operations by requiring that vibration-sensitive buildings (e.g. residences) are sited at least 100-feet from the centerline of the railroad tracks whenever feasible. The policy should further state that development of vibration-sensitive buildings within 100-feet from the centerline of the railroad tracks would require a study demonstrating that ground borne vibration issues associated with rail operations have been adequately addressed (i.e. through building siting or construction techniques).	LTS
Impact NOI-2: Construction associated with buildout of the General Plan would temporarily elevate noise levels at adjacent land uses by 15 to 20 dBA or more.	S	Mitigation Measure NOI-2: In addition to the time-of-day restriction (which is derived from the County's Noise Ordinance) in Goal N-1, P4, the following standard construction noise control measures should be included as requirements at construction sites to minimize construction noise impacts: ♦ Equip all internal combustion engine driven equipment with intake and exhaust mufflers that are in good condition and appropriate for the equipment. ♦ Locate stationary noise generating equipment as far as possible from sensitive receptors when sensitive receptors adjoin or are near a construction project area. ♦ Utilize "quiet" air compressors and other stationery noise sources where technology exists.	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 With Mitigation
NOI-2 ***cont'd***		♦ When necessary, temporary noise control blanket barriers shall shroud pile drivers or be erected in a manner to shield the adjacent land uses. Such noise control blanket barriers can be rented and quickly erected. ♦ Foundation pile holes shall be pre-drilled to minimize the number of impacts required to seat the pile. The pre-drilling of foundation pile holes is a standard construction noise control technique. Pre-drilling reduces the number of blows required to seat the pile. ♦ The project sponsor shall designate a "disturbance coordinator" who would be responsible for responding to any local complaints about construction noise. The disturbance coordinator will determine the cause of the noise complaint (e.g. starting too early, bad muffler, etc.) and will require that reasonable measures warranted to correct the problem be implemented. The project sponsor shall also post a telephone number for excessive noise complaints in conspicuous locations in the vicinity of the project site. Additionally, the project sponsor shall send a notice to neighbors in the project vicinity with information on the construction schedule and the telephone number for noise complaints.	
POPULATION, HOUSING AND EMPLOYMENT			
There are no significant population, housing and employment impacts.			

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

3 PROJECT DESCRIPTION

This EIR provides an assessment of the *Eden Area Draft General Plan* that was published on October 24, 2005. Alameda County is preparing the draft *Eden Area General Plan* to replace the existing *Unincorporated Eden Area (portion) Plan*, which was adopted in 1983 and amended in 1995. The update will guide the unincorporated area's development and conservation through 2025. The new Eden Area General Plan will completely replace the existing General Plan, though it retains goals and policies that remain relevant, and includes a series of General Plan land use designation changes. In compliance with the California Environmental Quality Act (CEQA), this Environmental Impact Report (EIR) describes the environmental consequences of the draft General Plan. The Alameda County, Community Development Agency is the lead agency for the environmental review of the proposed project.

A. General Plan Vision

The following text is from the Alameda County *Eden Area Draft General Plan* and outlines the vision and future development for the Eden Area. The vision for the Eden Area is as follows:

> By the year 2025, the Eden Area of Alameda County will emerge as one of the most livable communities in the greater San Francisco Bay Area and become a great place to live, work and do business. Drawing on our rich history, we will create a bright future of opportunities for growth and advancement. We envision our community as an attractive and vibrant place that will be enhanced with the creation of vibrant districts where we can live, shop, walk, eat, gather and play. It is vital that we preserve and renew our residential areas, create affordable neighborhoods with housing choices that fit the needs of all the Eden Area's residents and invest in the economic development of our community by revitalizing underutilized districts and transportation corridors. We will create safe streets with a comprehensive network of bicycle lanes and enhance bus transportation along our corridors that is convenient and frequent.

> We will also expand parks and recreation opportunities to serve the need of all residents.

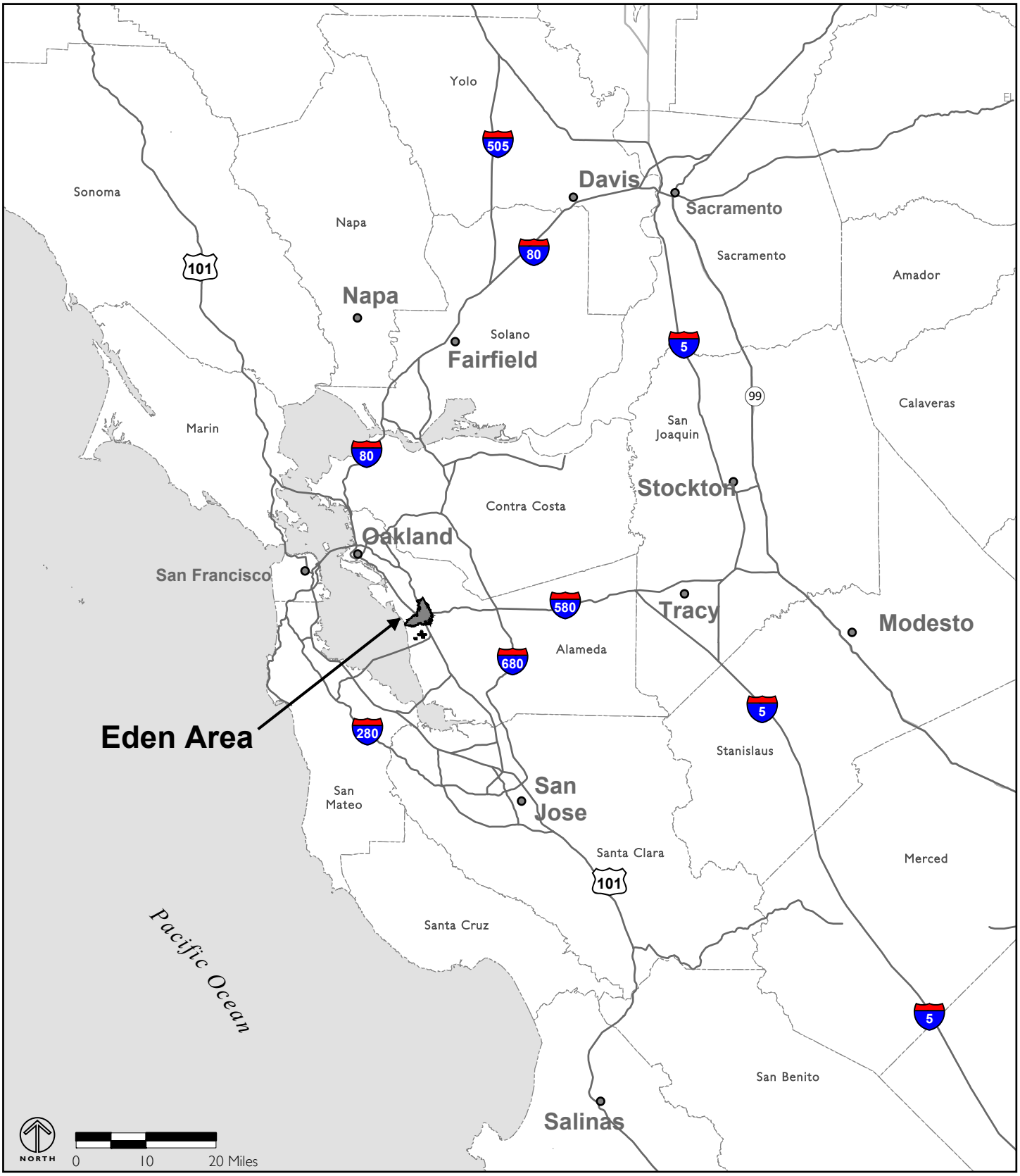
Growth will be managed to bring in needed benefits while preserving the important qualities of the Eden Area. New development will be pedestrian- and transit-oriented. We will repair and enhance our properties and streets. New projects will pay their fair share of the costs to create and maintain the quality of life we seek in the Eden Area. All stakeholders will continue to have the opportunity to participate in the land use decision-making process and these decisions will balance community needs and values with the rights of individuals. Furthermore, we will seek to expand employment opportunities for Eden Area residents.

We understand that the Eden Area is a part of a greater regional community, and we accept the challenge of working with our neighbors to seek solutions to the wider issues that cross our borders. We are proud of our community and welcome the opportunity to be in control of our destiny. Our vision is to ensure that the residents of the Eden Area will live in a dynamic, aesthetically pleasing and livable community for many generations to come.

B. Location and Setting

The Eden Area is an unincorporated portion of Alameda County located between the cities of San Leandro and Hayward. Figure 3-1 shows the regional location of the Eden Area. Figure 3-2 shows the planning area.

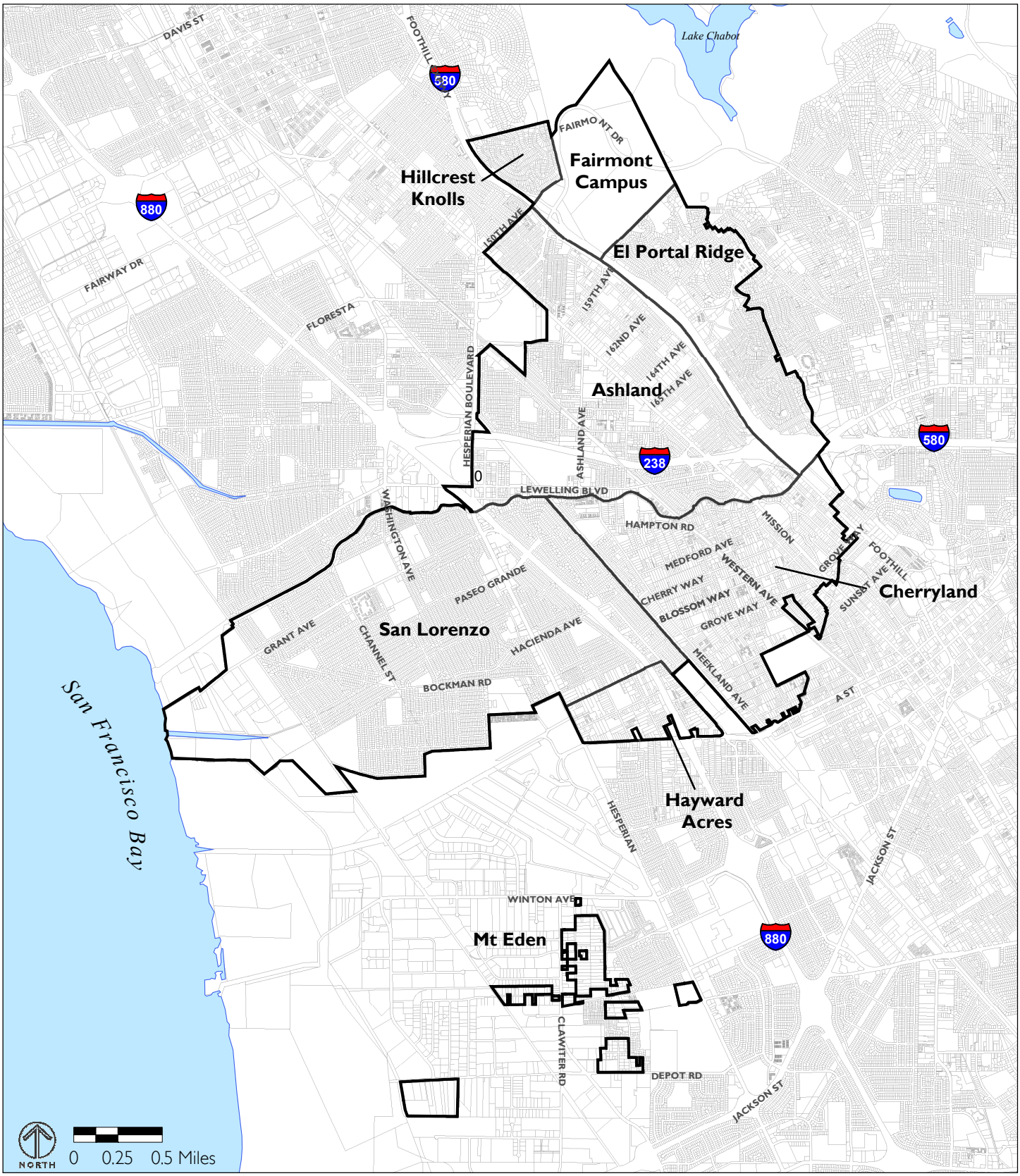
The Eden Area is just under eight square miles. With the exception of the Fairmont Complex, described below, and the hill areas located in the east of the planning area, the area is substantially built out. The majority of new development will take place on infill locations in existing neighborhoods.



Source: Deisgn, Community & Environment, February 2005.

FIGURE 3-1

REGIONAL LOCATION



Source: Alameda County Community Development Agency

Study Area Boundary

FIGURE 3-2

PROJECT SITE LOCATION

The Eden Area is served by three important Interstate freeways, I-580, I-880 and I-238. State Route 185/Mission Boulevard, also runs through the area as a primary artery. The Bayfair BART station is located north of the study area. The Hayward BART and Hayward Capitol Corridor (Amtrak) stations are located south of the area's boundaries.

1. Eden Area Boundaries

For planning purposes, the Eden Area is divided into eight sub-areas as shown in Figure 3-2. Boundaries for these sub-areas are meant to conveniently describe discrete areas for the purposes of writing the General Plan and this EIR. While these sub-areas are unique in some ways, they have many commonalities and, thus, are been planned concurrently. A list of these sub-areas follows. A more complete description can be found in the introduction to the draft *Eden Area General Plan*:

- Hillcrest Knolls
- Fairmont Complex
- Ashland
- Cherryland
- El Portal Ridge
- San Lorenzo
- Hayward Acres
- Mt. Eden

The study area for the Eden Area General Plan also includes the Fairview sub-area. While it is a part of the planning process, Fairview is not included in this analysis because a specific plan was completed and adopted in 1997. All information on vision, goals, policies, existing conditions and environmental review for Fairview can be found in the specific plan and its related documents.

Also worth noting is that the Mt. Eden sub-area is included in the proposed General Plan although it is currently in the process of being annexed into the City of Hayward. For the purpose of this EIR this sub-area is analyzed as if the County would maintain jurisdiction for the life of this Plan. Therefore, there will be some instances where multiple agencies serve this sub-area throughout this EIR.

2. Character of the Area

According to the 2000 Census, the current population in the Eden Area is 68,109, excluding Fairview (which has a population of 9,470). Between 1990 and 2000, the Eden Area grew by 10,964 persons, a rate of 1.9 percent per year. The Eden Area's growth was only somewhat higher than the growth rates in Alameda County and California, which were 1.2 and 1.3 percent per year, respectively. The area with the largest population is San Lorenzo, with almost 22,000 people, followed closely by Ashland with almost 21,000 people. According to statistics from the Association of Bay Area Governments, the year 2000 average household income projection for the Eden Area was $47,324.[1]

As of the 2000 Census, the Eden Area had a population of 68,109, living in 23,323 dwellings units. Between 1990 and 2000, average household size increased from 2.59 to 2.92. This compares to an average household size of 2.71 in the County and 2.87 in the State in 2000.

C. General Plan Description and Contents

The overall purpose of the General Plan is to create a policy framework that articulates a vision for the Eden Area's long term physical form and development, while preserving and enhancing the quality of life for area residents. The Eden Area General Plan is guided by the vision statement and includes an introduction and a brief overview of the Eden Area, as well as seven separate "elements" that set goals, policies and actions for a given subject. The State requires that the General Plan contain seven elements: Land Use, Circulation, Housing, Open Space, Noise, Safety, and Conservation. The draft *Eden Area General Plan* includes all state-required elements except the Housing Element, which was certified and adopted separately in 2003. The Con-

[1] Note: 1999 Income of 2000 Households. Sources: 2000 U.S. Census; Bay Area Economics, 2003.

servation and Open Space Elements are combined into one comprehensive element. Additionally, the proposed General Plan contains a Public Facilities and Services element. The key components of the proposed General Plan are as follows:

- **An Introduction** which contains broad goals for addressing growth and redevelopment in the Eden Area.
- **A Land Use Element** which provides an overall urban design framework, land use designations and land use policies for the Eden Area.
- **A Circulation Element** which specifies the general location and extent of existing major streets, transit facilities and the bicycle and pedestrian network.
- **A Conservation and Open Space Element** which addresses conservation, development and utilization of natural resources; the preservation of open space; and the provision of parks and recreational facilities.
- **A Public Facilities and Services Element** which covers a wide range of topics related to the provision of public services and infrastructure in the Eden Area. Such topics covered include: law enforcement, fire protection, schools, solid waste and water, wastewater and stormwater infrastructure and services.
- **A Safety Element** which contains policies to protect the community from risks associated with the effects of flooding, seismic hazards and wildland fires.
- **A Noise Element** which addresses noise issues in the community and analyzes and quantifies current and projected noise levels from a variety of sources, such as traffic, industry, rail and the airport.

1. Organization of the Elements

Each element of the draft General Plan contains background information and goals, policies and actions (defined on the following page). Some elements include additional sections that are specific to them. For example, the Land Use Element contains sections on urban design and land use designations. The Circulation Element contains information on roadway classifications in the Eden Area.

The background information section of each element describes current conditions in the Eden Area relative to the specific element. The goals, polices and actions provide guidance to the County on how to accommodate growth and manage its resources over the next 20 years. The goals, policies and actions in each element are derived from a number of sources including other County planning documents and public input gathered at community workshops. Each goal, policy and action in the *Eden Area General Plan* was selected or written to address the key issues identified in the General Plan update process outlined above. Each is described as follows:

- A goal is a description of the general desired result that the County seeks to create through the implementation of its General Plan.
- A policy is a specific statement that guides decision-making in working to achieve a goal. Policies represent statements of County regulations and require no further implementation. The General Plan's policies lay out the standards that will be used by County staff, the Planning Commission and the Board of Supervisors in their review of land development projects and in decision-making about County actions in the Eden Area.
- An action is a program, implementation measure, procedure or technique intended to help achieve a specified goal.

The *Eden Area General Plan* is the Alameda County's fundamental land use and development policy document for the Eden Area. It represents the basic policy direction of the Alameda County Board of Supervisors on community values, ideals and aspirations to govern a shared environment through 2025 in the Eden Area. It addresses all aspects of development including land use, transportation, public facilities and services, and open spaces, among other topics. Though residential development is addressed in this General Plan, detailed housing policies are provided in a separate Housing Element.

California Government Code Section 65300 requires that the General Plan must be comprehensive, internally consistent and plan for the long-term. Although required to address the issues specified in State law, the General

Plan may be organized in a way that best suits the County. The plan should be clearly written, available to all those concerned with the community's development and easy to administer.

The draft *Eden Area General Plan* meets these requirements. The Plan articulates a vision for the Eden Area's long-term physical form and development. It also brings a deliberate overall direction to the day-to-day decisions of the Board of Supervisors, its commissions and County staff in regards to the Eden Area. In particular, the General Plan serves six related purposes:

1. **Communication**. The General Plan conveys the vision for the future of the Eden Area to current and future residents and commits the Board of Supervisors to achieving that vision.
2. **Policy Determination**. The document defines a set of policies that enables the Board of Supervisors to govern the future physical development of the community and determine a general physical design showing how the policies will be implemented.
3. **Project Evaluation**. The General Plan provides a mutually-agreed-upon framework against which the Board of Supervisors can compare and evaluate specific projects.
4. **Conveyance of Advice**. The General Plan provides a coherent, unified structure for the Planning Commission to advise the Board of Supervisors on development issues.
5. **Education**. The document, and the process of creating and revising it, provides a forum for residents, County staff, County agencies, other governmental agencies and the Board of Supervisors to educate themselves and others on the problems and opportunities of the Eden Area.
6. **Action Plan.** The General Plan includes specific actions that the County will take in order to meet its planning goals. These actions constitute a work program for the Planning Commission and County staff over the life of the General Plan.

In order to be used in the ways described above, the General Plan does the following:

- Defines a realistic vision of what the Eden Area intends to be in the long-term.
- Expresses the policy direction of the County in regard to the physical, social, economic, cultural and environmental character of the Eden Area.
- Serves as a comprehensive guide for making decisions about land use, community character, economic development, circulation, open space, the environment and public health and safety.
- Contains a general level of information to allow for flexibility of future conditions and ideas. As such, the General Plan should be designed to allow amendment in the future.
- Charts the course of coordinated growth and redevelopment that will preserve the character of neighborhoods and encourage the economic development of the Eden Area.
- Serve as the Eden Area's "constitution" for land use and community development. It is the legal foundation for all zoning, subdivision and public facilities ordinances, decisions and projects—all of which must be consistent with the General Plan.
- Be in a clear and easy to understand form that encourages public debate and understanding.

D. The General Plan Update Process

The draft *Eden Area General Plan* was prepared over a period of several years beginning in October of 2002 by County staff and a consultant team with extensive public input. The process included four major tasks, each with a series of public workshops. The first task explored the vision, goals and needs of community members as well as the existing opportunities and constraints for development. The comments from the public formed the basis for the vision statement in this General Plan as well as a list of issues to be addressed through policy and action statements. Concurrent with this task, the consultant team prepared an extensive existing conditions analysis that explored a

range of physical and social conditions in the Eden Area. The Final *Eden Area General Plan Existing Conditions Report,* an extensive report about the built environment, transportation network and economic conditions, resulted from this work. Public workshops on existing conditions were held in March and May of 2003.

As a result of the Existing Conditions report and the expressed goals and needs of the community, a variety of land use and policy alternatives for the Eden Area were developed. These were presented and discussed at public workshops in July and September 2003. The land use alternatives identified key locations with the greatest potential to attract new business and enhance the overall livability of the Eden Area. Community members had a number of opportunities to provide feedback on the future for each area and to guide the consultant team in the refinement of alternative development strategies. The final alternative that was developed provides the basis for the land use element in the draft *Eden Area General Plan*.

The policy alternatives explored a range of issues of concern to the community including pedestrian safety, traffic congestion, and the need for new public services and facilities, such as parks and schools. Key issues that were identified throughout the process are addressed in the background information, goals, policies and actions of the six elements of the General Plan.

The Draft General Plan was published on October 14, 2005. In January of 2006, the County held a series of public workshops to obtain feedback on the draft document. The Draft General Plan will be revised based on these comments prior to adoption by the Board of Supervisors. Additional public workshops were held on two key areas, the Grant Avenue Area and the Fairmont Complex. The consultant team prepared a separate existing conditions report and specific key issues for the Grant Avenue Area. Additionally, the consultant team worked with the Alameda County General Services Agency (GSA) to coordinate the General Plan with the *Fairmont Area Master Plan* for the Fairmont Complex. The results of these processes are included in this General Plan.

E. Summary of Proposed Actions

This section contains a summary of proposed actions in the Draft General Plan.

1. Proposed Land Use Designations

In addition to the proposed goals, policies and actions outlined in the proposed General Plan, the Eden Area Draft General Plan identifies a number of land use designation categorical changes. The following is a list of the principal differences between the land use designations from the current plan and those of the proposed plan. Acreages of each land use designation are presented in Table 3-1, while Figure 3-3 illustrates the allowed types of land uses throughout the Eden Area. For comparison purposes, Figure 3-4 shows the distribution of existing land uses within the Eden Area.

The proposed land designations which are consistent with the current General Plan are the Public (Pub), Park (P) and School (S) designations. The proposed General Plan include six residential designations, a General Commercial (GC) designation, a light industrial (LI) designation, a Research and Development/Office (R&D/O) designation and a San Lorenzo Village (SLZV) designation.

a. Residential

i. Low Density Residential (LDR)

The Low Density Residential designation applies to the majority of the residential areas in the Eden Area. This designation indicates a single-family, detached housing unit with a maximum density of 9 dwelling units per acre.

TABLE 3-1 **EDEN AREA GENERAL PLAN EXISTING AND PROPOSED LAND USE CATEGORIES**

Land Use Category	Existing General Plan (acres)	% of Total	Proposed Change (acres)	Proposed General Plan (acres)	% of Total
Low Density Residential (LDR)	1681.6	34%	-303.1	1,378.5	35%
Low-Medium Density Residential (LMDR)	N/A	0%	+455.9	455.9	11%
Low and Medium Density Residential	434.1	8%	-434.1	0	0%
Low/Medium/High Density Residential Mix	7.9	0%	-7.9	0	0%
Low/Medium/High Density Residential Split	60.6	1%	-60.6	0	0%
Medium Density Residential (MDR)	523.9	10%	+208.1	732.0	18%
Medium-High Density Residential (MHDR)	N/A	0%	+55.9	55.9	1%
Medium Density Residential and General Commercial as an Additional Use (MDR/GC)	N/A	0%	+8.2	8.2	0%
Medium-High Density Residential and General Commercial as an Additional Use (MHDR/GC)	N/A	0%	+7.5	7.5	0%
High Density Residential (HDR)	N/A	0%	+1.0	1.0	0%
High and Medium Density Residential	157.2	3%	-157.2	0	0%
High Density Residential and General Commercial as an Additional Use (HDR/GC)	N/A	0%	+6.3	6.3	0%
General Commercial (GC)	88.9	1%	-21.5	67.4	4%
General Commercial or Low Density Residential	43.9	0%	-43.9	0	0%
General Commercial or Medium/High Density Residential	161.6	3%	-161.6	0	0%
General Commercial and Low-Medium Density Residential as an Additional use (CG/LMDR)	N/A	0%	+6.4	6.4	0%
General Commercial and Medium Density Residential as an Additional Use (GC/MDR)	N/A	0%	+60.7	60.7	1%
General Commercial and Medium-High Density Residential as an Additional Use (GC/MHDR)	N/A	0%	+72.1	72.1	1%
General Commercial and High Density Residential as an Additional Use (GC/HDR)	N/A	0%	+42.8	42.8	1%
Light Industrial (I)	0	0%	+179.0	179.0[c]	4%

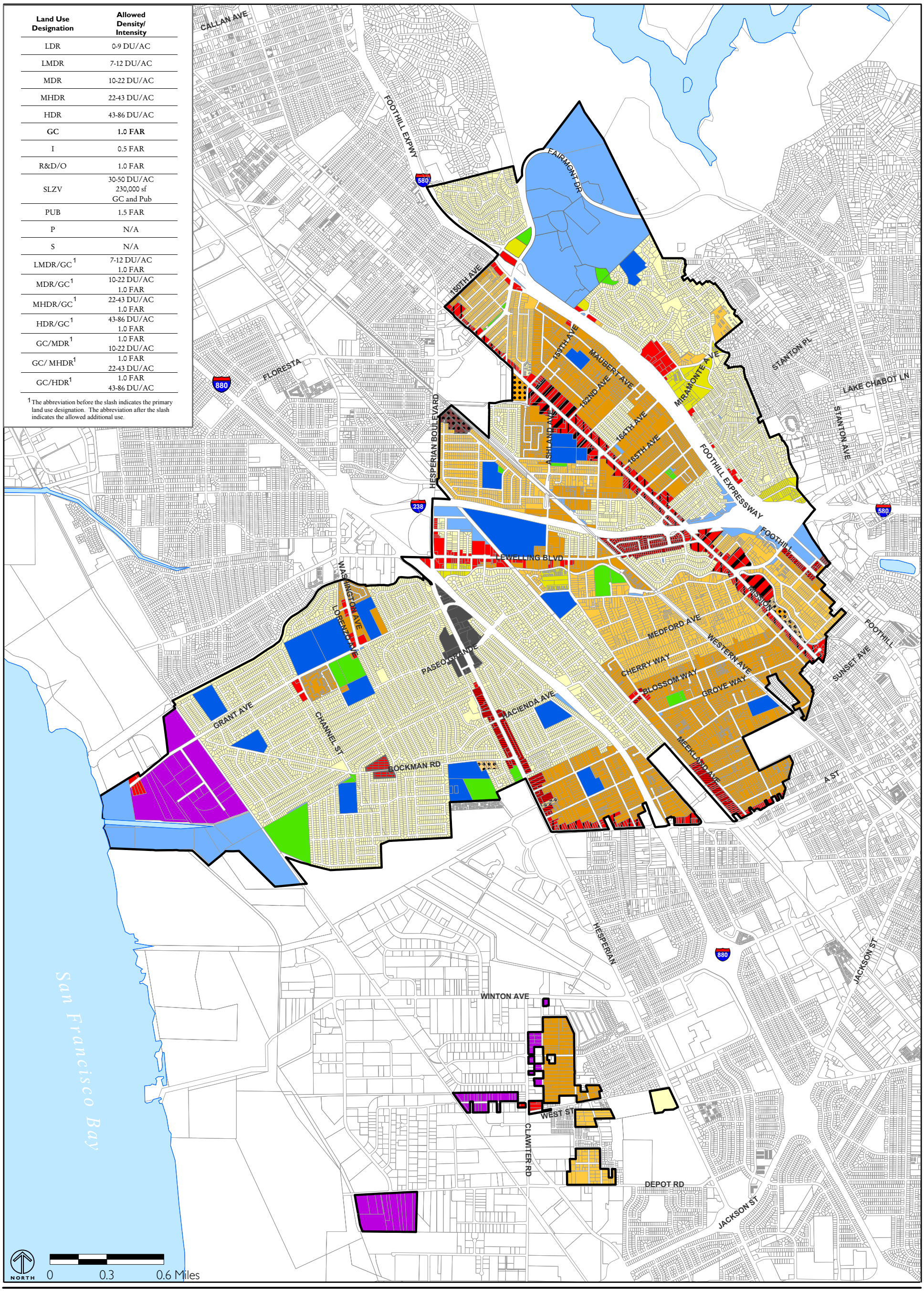
TABLE 3-1 **EDEN AREA GENERAL PLAN EXISTING AND PROPOSED LAND USE CATEGORIES** (CONTINUED)

Land Use Category	Existing General Plan (acres)	% of Total	Proposed Change (acres)	Proposed General Plan (acres)	% of Total
Industrial	278.8	5%	-278.8	0	0%
Research and Development/Office (R&D/O)	N/A	0%	+179.0	179.0 [c]	4%
San Lorenzo Village (SLZV)	N/A	0%	+28.7	28.7	0%
Public (Pub)	368.2	7%	+117.9	486.1	12%
Park (P)	17.7	0%	+64.4	82.1	2%
School (S)	122.9	2%	+129.2	252.1	6%
Total (w/out Transportation)	3947.5	80%	-3947.5	0	0%
Transportation	995.9	20%	-995.9	0	0%
Total Acres	**4943.4**		-1020.7	**3,922.7**	

Note: The 1021 acre difference between the existing and proposed general plan totals can be explained by the absence of a "transportation" land use designation in the proposed General Plan.

Land Use Designation	Allowed Density/ Intensity
LDR	0-9 DU/AC
LMDR	7-12 DU/AC
MDR	10-22 DU/AC
MHDR	22-43 DU/AC
HDR	43-86 DU/AC
GC	**1.0 FAR**
I	0.5 FAR
R&D/O	1.0 FAR
SLZV	30-50 DU/AC 230,000 sf GC and Pub
PUB	1.5 FAR
P	N/A
S	N/A
LMDR/GC[1]	7-12 DU/AC 1.0 FAR
MDR/GC[1]	10-22 DU/AC 1.0 FAR
MHDR/GC[1]	22-43 DU/AC 1.0 FAR
HDR/GC[1]	43-86 DU/AC 1.0 FAR
GC/MDR[1]	1.0 FAR 10-22 DU/AC
GC/ MHDR[1]	1.0 FAR 22-43 DU/AC
GC/HDR[1]	1.0 FAR 43-86 DU/AC

[1] The abbreviation before the slash indicates the primary land use designation. The abbreviation after the slash indicates the allowed additional use.



Source: Design, Community & Environment. March 2005.

FIGURE 3-3

GENERAL PLAN LAND USE DESIGNATIONS

- **Study Area Boundary**
- **Low Density Residential (LDR)**
- **Low-Medium Density Residential (LMDR)**
- **Medium Density Resdiential (MDR)**
- **Medium-High Density Residential (MHDR)**
- **High Density Residential (HDR)**
- **General Commercial (GC)**
- **San Lorenzo Village (SLZV)**
- **Light Industrial and Research & Development/Office (I and R&D/O)**
- **Park (P)**
- **Public (PUB)**
- **School (S)**
- **Low-Medium Density Residential allowed as an Additional Use (*/LMDR)**
- **Medium Density Residential allowed as an Additional Use (*/MDR)**
- **Medium & High Density Residential allowed as an Additional Use (*/MHDR)**
- **High Density Residential allowed as an Additional Use (*/HDR)**
- **General Commercial allowed as an Additional Use (*/GC)**

* The asterisk before the slash indicates that a primary land use designation also applies in addition to this overlay. The underlying color on the map reflects this primary designation.

Source: Alameda County Community Development Agency and Design, Community & Environment, December 2004.

FIGURE 3-4

EXISTING LAND USE

COUNTY OF ALAMEDA
EDEN AREA DRAFT GENERAL PLAN

Study Area Boundary
Single-Family Residential
Multi-Family Residential
Mobile Homes
Mixed Use
Commercial
Industrial
Parks
Public
Vacant

ii. Low-Medium Density Residential (LMDR)

The Low-Medium Density Residential designation allows a mix of single-family, detached housing and some duplexes and triplexes. Multi-unit and mobile home parks may also be allowed where it is deemed to be appropriate by the County based on impacts to surrounding uses. The Low-Medium Density Residential designation allows densities of 7 to 12 dwelling units per acre.

iii. Medium Density Residential (MDR)

The Medium Density Residential designation allows for a mix of single-family, duplex, triplex and townhouse and two-story, multi-family buildings with densities ranging from 10 to 22 dwelling units per acre. Multi-unit and mobile home parks are also allowed, where appropriate.

iv. Medium-High Density Residential (MHDR)

The Medium-High Density Residential designation generally occurs along major arterial roadways. Allowed uses include townhouses and multi-family buildings between two- and four-stories. Allowed densities are between 22 to 43 dwelling units per acre.

v. High Density Residential (HDR)

The High Density Residential designation is the most urban designation in the Eden Area. Allowed uses include multi-family residential buildings between three- and six-stories. Allowed densities are between 43 to 86 dwelling units per acre.

vi. General Commercial as an Additional use (/GC)

General Commercial uses are allowed as an additional use on specified parcels of land designated as Medium Density Residential, Medium-High Density Residential, or High Density Residential.

b. General Commercial (GC)

The General Commercial designation allows for a wide range of commercial uses that encompass local and regional retail establishments and automobile-oriented uses to meet the needs of Eden Area residents, employees and pass-

through travelers. Offices are allowed in commercially designated areas. Commercial parcels have a maximum floor/area ratio (FAR) of 1.0.[3] On some commercial parcels throughout the Eden Area, residential uses are allowed as an additional use (/LMDR, /MDR, /MHDR, /HDR).

c. Light Industrial (I)

Specific uses allowed in the Light Industrial designation range from light manufacturing to warehousing and distribution uses to research and development or flexible office space. Light Industrial parcels have a maximum FAR of 0.5. Other uses are allowed in small amounts to serve the daily needs of the workforce. These uses include offices, retail and community facilities. Live/work units may be approved as conditional uses if they conform to all relevant General Plan policies.

d. Research and Development/Office (R&D/O)

Specific uses allowed in the R&D/O designation include medium- and large-scale uses such as high-tech, medical or hospital, legal, insurance and similar users. R&D/O parcels have a maximum FAR of 1.0. Other uses, including retail and community facilities, are allowed in small amounts to serve the daily needs of the workforce. Live/work units may be approved as conditional uses if they conform to all relevant General Plan policies.

e. San Lorenzo Village (SLZV)

This designation is designed to implement the vision, uses and intensities in the San Lorenzo Village Specific Plan, which was adopted by the Alameda County Board of Supervisors in 2004. The Specific Plan provides a long-term vision for the historic San Lorenzo Village area on Hesperian Boulevard from the Interstate 880 overcrossing on the north to around Via Mercado on the south.

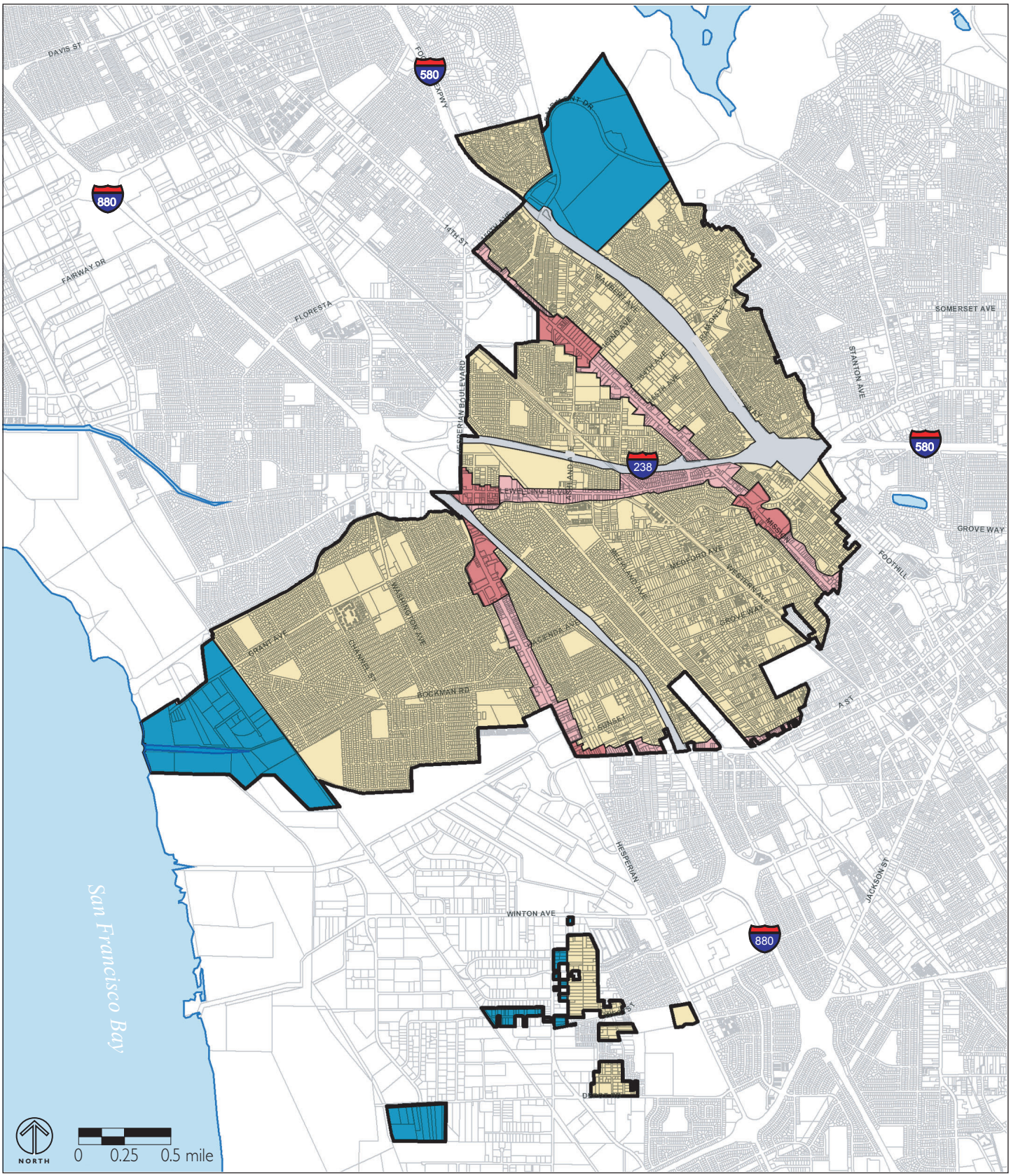
[3] The size of a building in square feet (gross floor area) divided by net land area, expressed as a decimal number. For example, a 60,000 square-foot building on a 120,000 square-foot parcel would have a floor area ratio of 0.5. The FAR is used in calculating the building intensity of non-residential development.

The maximum amount of cumulative development allowed in the San Lorenzo Village area is 580 housing units with a density range of between 30 to 50 dwelling units per acre and 230,000 square feet of commercial and public uses. Specific land use, urban design, dimensional standards and other policies and standards are identified in the Specific Plan. The Specific Plan must be followed as the controlling document for the San Lorenzo Village area as defined in that document.

2. Urban Design Framework

The urban design framework is designed to shape future growth in the community as it changes over time and to begin to tie together the disparate pieces of the community into a cohesive whole. This framework is based on the precepts of smart growth and livability and is intended to create a livable, attractive, vibrant community in the Eden Area. Change will take place over a long period of time as new development is constructed and older buildings are renovated or demolished. Figure 3-5 provides an illustrative diagram of the urban design framework.

Four distinct types of areas were identified in the Eden Area: Neighborhoods, Corridors, Districts and Special Precincts. Each parcel in the Eden Area falls into one of these four categories and there is no overlap among the areas. Neighborhoods are relatively large residential areas that have some common character. They are recognized by people who live in them as hav ing a distinct identity that results from a unique history, common physical characteristics, a common meeting place, school or shopping district or more intangible characteristics. Corridors are linear areas located along arterial roads, typically one to two lots deep on either side of the road. They contain a mix of retail, office and residential uses. Districts are areas of higher intensity development located along, but distinct from, Corridors in the Eden Area. Districts emphasize a pedestrian- and transit-oriented environment, incorporating some mixed-use development, where appropriate, at a higher density than the surrounding areas. Special precincts are portions of the Eden



Source: Design, Community & Environment. Note: District and Corridor boundaries are flexible and may be modified to meet changing market conditions.

- Corridor
- District
- Freeway
- Neighborhood
- Special Precinct
- Study Area Boundary

FIGURE 3-5

ILLUSTRATIVE DIAGRAM OF THE URBAN DESIGN FRAMEWORK

Area where unique and necessary uses are located. These precincts predominantly contain a single type of use, namely industrial uses and/or public facilities.

The urban design framework consists of goals, policies and actions for the design quality and character of each of the types of areas mentioned above. Important concepts include the preservation of the quality and character of existing neighborhoods in the Eden Area, specifying landscape standards in the effort to improve the streetscape with street trees, sidewalks and other amenities, create districts that serve as shopping, living, meeting and gathering places, enhancing the visual quality of the Eden Area and reducing the impact of industrial development and activity on adjoining land uses.

3. Traffic and Circulation

The proposed General Plan seeks to improve traffic and circulation elements within the Eden Area. These improvements would consist of upgrading roadways, sidewalks and public transportation throughout the Eden Area. Traffic and circulation policies that are outlined in the proposed General Plan are meant to promote more fluid traffic circulation as well as alternative forms of transportation throughout the Eden Area. These goals and policies are discussed in detail, in their respective chapters of this EIR.

4. Open Space and Recreation

The proposed General Plan has a strong focus on parks and recreation facilities. The Plan identifies specific standards for parks based on the Hayward Area Recreation and Parks District's standards and identifies potential future locations for parks. The plan also includes policies to expand joint use agreements with schools.

F. General Plan Development Projections

The following provides a summary of the development projections expected for the life of the Eden Area General Plan.

1. Development through 2025 Buildout Estimates

As shown in Table 3-2, the land use designations in the proposed General Plan would theoretically allow for a maximum of 5,641 new units within the Eden Area. Under a buildout scenario, the addition of 5,641 new units would theoretically increase the population within the Eden Area by 16,472 people within the next twenty years. This population projection is based on an average household rate of 2.92 persons per household in the Eden Area.[4]

The methodology used to calculate these residential projections was to identify the specific parcels that would be likely to be redeveloped over the 20 year planning horizon of the General Plan. This was based on the presence of vacant land, land that was underutilized (as defined by the ratio of improvement value to land value) and via a windshield survey by the consultant team of areas likely to redevelop based on proximity to existing facilities and services. For the parcels that are likely to redevelop, the consultants and County staff then assumed that 60 percent of the parcels would be redeveloped over the next 20 years and each would be built out to between 80 to 90 percent of their maximum allowed density. Furthermore, it was assumed that parcels identified in the Housing Element would be built out to the maximum density identified in the Housing Element.

Non-residential growth was determined using ABAG's *Projections 2005* growth projections for the Ashland, Cherryland and San Lorenzo sub-areas. The buildout numbers for the Eden Area are described below in their respective sections and shown in Table 3-2. In this document, ABAG assumes that the total number of jobs in the Eden Area will increase from 8,530 in 2005 to 14,330 in 2025. This is an increase of 5,800 jobs within the 20-year planning horizon of the General Plan. An increase of 290 jobs per year, or approximately 85,000 square feet of mixed commercial and industrial space. These

[4] 2000 U.S. Census: average household size was 2.92 people per household for the Eden Area.

TABLE 3-2 **PROPOSED GENERAL PLAN BUILDOUT AND PROJECTIONS**

Category	Buildout in 2025
Housing:	
Multi-Family	4,807 (units)
Single-Family	884 (units)
Total Units:	5,641 (units)
Employment & Population:	
Industrial	300 (jobs)
Commercial	3,400 (jobs)
Research and Development/Office	2,100 (jobs)
San Lorenzo Village	300 (jobs)
Total Jobs	5,800[a]
Total People	16,472 [b]

[a] ABAG's *Projections 2005*.

[b] Based on an average household size of 2.92.

projections envision that the majority of new jobs to be in the retail, health, education and service sectors.

a. Residential

As mentioned above, approximately 5,641 new residential units could be developed under the proposed General Plan. Four categories make up this projected total, they consist of: Projected Housing Element Units, Projected Non-Housing Element Units, Projected Total Multi-Family Units and Projected Single-Family Units. The San Lorenzo area is projected to have the largest increase in housing units within the Eden Area. The majority of which will be located in the San Lorenzo Village Specific Plan area. Other

multi-family units are scattered among the various districts of the Eden Area. Projected single-family units over the life of the proposed general plan represent a small portion (about 15 percent) of the new residential development under buildout projections.

b. Industrial

About 300 new industrial jobs could be created under the proposed General Plan. Of those, an estimated 150 jobs are projected to be developed within the southwest tip of the San Lorenzo area that borders the San Francisco Bay. The Grant Avenue Area is designated as mix of general commercial, public, light industrial and research and development land use area under the proposed General Plan. Another 150 jobs are also projected for the Mt. Eden Area, which is the area between Depot Road on the north, Eichler Street on the east, Enterprise Avenue on the south and the Bay marsh lands on the west. This area is designated as being wholly a light industrial and research and development land use area.

c. Commercial

About 3,400 commercial jobs are projected for the Eden Area under the proposed General Plan. Approximately 400 of these jobs are projected for the San Lorenzo Village area, which is generally bounded by Interstate 880 on the east, Vining Drive on the north, Washington Avenue on the west and Via Manzanas and Hacienda Avenue on the south. The majority of commercial jobs, though, are projected to be located along major corridors throughout San Lorenzo, Cherryland and Ashland.

d. Research and Development/Office

Research and Development is a new land use designation in the proposed General Plan. Approximately 2,100 jobs are projected to be created over the life of this plan in the Fairmont and San Lorenzo areas of the Eden Area. 1,500 of these jobs are projected for the Fairmont area and 600 jobs are projected for the San Lorenzo area.

4 ENVIRONMENTAL EVALUATION

This chapter consists of 12 sections that evaluate the environmental impacts of the proposed Eden Area General Plan. Each section generally follows the same format, and consists of the following subsections:

- The ***Existing Setting*** section describes current conditions with regard to the environmental factor reviewed.
- The ***Standards of Significance*** section tells how an impact is judged to be significant in this EIR. These standards are based on the CEQA Guidelines.
- The ***Impact Discussion*** gives an overview of potential impacts, and tells why impacts were found to be significant or less-than-significant.
- The ***Impacts and Mitigation Measures*** section numbers and lists identified impacts and, where possible, identifies measures that would mitigate each impact.

A. Format of Impact Discussions

In sections 4.1 through 4.13, each numbered impact is considered significant prior to mitigation, unless it is specifically identified as less-than-significant. Mitigation measures have been suggested that will reduce significant impacts to less-than-significant levels. Impacts would be less-than-significant after mitigation unless they are noted as significant and unavoidable in the text.

All mitigation measures are stated with conditional language ("should") because they are recommendations, and not conditions of approval for any project built as a result of this plan, unless they are specifically adopted as conditions by the County. Under CEQA, an EIR is required to identify mitigation measures that could reduce identified impacts to less-than-significant levels. However, the County is not required to adopt these mitigation measures, even after the EIR is certified. The County could require alternative or additional mitigation measures that are equally effective, or it could find that the identified measures are infeasible and allow the General Plan without mitigation under a finding of overriding consideration. If the County adopts the

suggested mitigation measures as conditions of approval, then their language will be changed from the conditional "should" to the mandatory "shall."

4.1 LAND USE

This chapter presents information on the existing land use setting in the Eden Area including the regulatory setting. It also describes potential environmental impacts the proposed General Plan would have on these uses.

A. Existing Setting

This section describes existing land uses in the Eden Area, the land use designations in the *Unincorporated Eden Area (portion) Plan (Eden Area Plan)*, which was adopted in 1983 and amended in 1995, and existing plans and policies related to land use.

1. Existing Land Use

The Eden Area covers a total of approximately 4,943 acres. As shown in Table 4.1-1 and Figure 4.1-1, approximately 53 percent of the land in the Eden Area (excluding transportation corridors) is single-family residential. Public uses and multi-family residential uses comprise 30 percent of total acreage in the Eden Area. Non-residential uses in the Eden Area include public uses, commercial uses and industrial uses; 21 percent, 6 percent and 5 percent of all Eden Area acreage, respectively. Mixed-use and parkland account for less than one percent of land uses in the Eden Area.

The following provides qualitative and quantitative descriptions of existing land uses in the Eden Area. Data on existing land use is based on information verified by the County. Table 4.1-1 lists detailed acreages for each existing land use within the Eden Area, which are grouped into the following categories:

- **Single-Family Residential**. This is the predominant land use in the Eden Area. It refers to parcels that contain a single residence and related structures, such as second units, garages or sheds. Some single-family parcels may also contain orchards and/or structures related to raising animals.

TABLE 4.1-1 **EXISTING LAND USE IN THE EDEN AREA**

	Eden Area	
Land Use Category	**Total Acres**	**% of Total Acres**
Residential – Single-Family	2,066.1	53.3
Residential – Multi-Family	4,29.2	11.1
Residential – Mobile Home	10.4	0.3
Commercial	232.8	6
Industrial	189.4	4.9
Mixed Use	21.7	0.6
Park	35.7	0.9
Public	812.6	21
Vacant Lot	77.4	2
Total Acres (w/out Transportation)	3,875.5	100
Transportation[a]	1,067	N/A
Total	4,943.4	N/A

[a] This includes access areas and corridors.

Source: GIS data, Alameda County, 2003.

- **Multi-Family Residential**. This land use category refers to parcels that contain more than one housing unit and includes duplexes, triplexes, four-plexes, townhomes, condominiums and apartment buildings.
- **Mobile Homes**. This category is for the several mobile home parks located throughout the Eden Area.

Source: Alameda County Community Development Agency and Design, Community & Environment, December 2004.

FIGURE 4.1-1

Study Area Boundary
Single-Family Residential
Multi-Family Residential
Mobile Homes
Mixed Use
Commercial
Industrial
Parks
Public
Vacant

MAP OF EXISTING GENERAL LAND USES

COUNTY OF ALAMEDA
EDEN AREA DRAFT GENERAL PLAN EIR

- **Commercial**. Commercial land uses refer to parcels that contain a number of business types including retail, office, and medical facilities. Commercial development is predominantly located along corridors such as Mission/East 14th Street, Hesperian Boulevard, Foothill Boulevard and Lewelling Boulevard, and at key intersections of collector streets.
- **Industrial**. Industrial development includes parcels used for production and manufacturing and includes warehouses, self-storage facilities and production-oriented small businesses. The industrial parcels are located throughout the Eden Area with concentrations at the western end of Grant Avenue and in Mt. Eden, especially along Depot Road.
- **Mixed Use**. Mixed use refers to parcels that contain a combination of residential and commercial uses. A few mixed use parcels are located in the area.
- **Park**. This category includes public recreational facilities that contain active or passive recreational uses. Parks are distributed throughout the Eden Area.
- **Public**. The Public designation covers a number of uses including schools, libraries, churches, and public medical facilities. These uses are distributed throughout the Eden Area and concentrated in Fairmont Area off of Foothill Boulevard.
- **Vacant**. This category is for parcels that either include vacant buildings, or empty lots containing no structures.

2. Existing General Plan Land Use Designations

The land use map in the *Eden Area Plan* includes 13 land use designations, within which a broad range of uses are permitted. The land use designations for the Eden Area Plan are shown in Figure 4.1-1 and the amount of land within the Eden Area associated with each of these classifications are detailed in Table 4.1-2. These land use designations and their general locations in the study area are described below:

TABLE 4.1-2 **EXISTING GENERAL PLAN LAND USE DESIGNATIONS (IN ACRES)**

General Plan Land Use Designation	Eden Area Acres
Low/Medium/High Density Residential Mix	**7.9**
Low/Medium/High Density Residential Split	**60.6**
General Commercial	88.9
General Commercial or Low Density Residential	43.9
General Commercial or Medium/High Density Residential	161.6
High and Medium Density Residential	157.2
Industrial	278.8
Low and Medium Density Residential	434.1
Low Density Residential	1,681.6
Medium Density Residential	523.9
Park	17.7
Public	368.2
School	122.9
Total (w/out Transportation)	3,947.5
Transportation	995.9
Total	**4,943.4**

Source: County of Alameda, 1983, *Unincorporated Eden Area (portion) Plan*.

- **Low Density Residential.** Predominantly single-family detached structures with a density of between six and nine dwelling units per acre. The majority of the Eden Area is under this designation.
- **Low and Medium Density Residential.** Predominantly single-family detached and duplex structures with a density of approximately seven to twelve dwelling units per acre.
- **Medium Density Residential.** A mix of residential uses including single-family, duplex, triplex and four-plex. The density range of this designation is between ten and 22 units per acre.
- **Medium and High Density Residential**. Predominantly larger, multi-family structures with a density of between 15 and 45 units per acre. The areas designated Medium and High Density Residential are central Ashland, northern and southern Cherryland, and the area east of East 14th Street.
- **General Commercial.** A broad category that allows for all commercial development and includes office uses and a range of retail from smaller, neighborhood-serving centers to larger areas with an area-wide or regional draw. Commercial areas are concentrated on the major corridors of Mission/East 14th Street, Lewelling Boulevard, West 'A' Street, Foothill Boulevard, Meekland Avenue, and Hesperian Boulevard.
- **Industrial.** A category that includes manufacturing, warehousing, storage, distribution, and research and development facilities. There are relatively few industrial areas in the Eden Area and these are located at the southern end of Meekland Avenue and the western end of Grant Avenue.
- **Park.** A category that includes community/district parks, neighborhood parks, mini parks, tot-lots, and linear parks.
- **School.** Locations for public schools ranging from elementary to high-schools.
- **Public.** A category that includes public uses such as public buildings and offices, including city government facilities.

There are two additional categories, Low/Medium/High Residential Mix and Low/Medium/High Residential Split, which apply specifically to parcels located in San Lorenzo, in which there are two General Plan land use designations assigned to an individual parcel.

3. Existing Plans and Policies

In addition to the *Eden Area Plan*, other policy and planning documents that affect the Eden Area are described below.

a. Alameda County Zoning Ordinance

Since its adoption, the current Alameda County Zoning Ordinance has been revised numerous times. Zoning functions to classify, regulate, restrict and segregate land use, building characteristics and population densities according to and consistent with the land use goals established by the community in the General Plan. Seventeen zoning designations are currently used in the Eden Area, which can be grouped into six basic types of land uses: residential, commercial and office, industrial, agriculture, planned development, and transit-related. The residential category is further subdivided by density, commercial categories are determined by type, and industrial zones are based on intensity of use. Transit zones are either access areas or corridors. Access areas within the Eden Area are primarily located along Mission Boulevard, and allow for access to Highway 238 and Interstate 880. Existing zoning is generally consistent with the existing General Plan land use designations. As with the land use designations, most of the study area is zoned for single-family residential uses.

b. Specific Plans

The purpose of a Specific Plan is to guide future public and private actions within the a specific plan area. The plan describes the County's policies and regulations regarding development, including land use, circulation, design, and infrastructure within the plan area. The plan also identifies issues and community concerns and preferences. It is intended to enable public agencies and private property owners and developers to make development decisions that are appropriate, consistent and compatible with each other, with the

goals of the Plan, and with the County General Plan for the area.[1] Numerous Specific Plans have been adopted within the Eden Area to provide additional direction for development within each study area. The following is a list of the adopted Specific Plans.

- **Ashland Cherryland Business Districts Specific Plan.** The Plan was developed in 1994 to help stimulate economic development in Ashland and Cherryland, primarily along the Mission Boulevard corridor.
- **Mt. Eden Neighborhood Plan.** The Plan was developed in 1990 by the City of Hayward. While Hayward has no regulatory authority in Mt. Eden, the City has developed preliminary zoning designations for agricultural (for historic preservation), residential, commercial and industrial land uses to prepare for potential annexation.
- **Fairview Area Specific Plan.** Adopted in 1997, the primary goals are to protect and preserve important environmental resources and significant natural features in the Fairview Area and to promote development that is sensitive to variations in topography and the rural residential character of the area.
- **San Lorenzo Village Specific Plan.** This plan includes policies regulating land use, circulation, design and infrastructure for 30-acres on Hesperian Boulevard between Mercado and Interstate 880. The overall goal of the plan is to facilitate commercial revitalization of the area, which has declined since the mid-1990's.

c. Eden Area Redevelopment Plan

Adopted in July 2000, this plan established five redevelopment areas: San Lorenzo, Cherryland, Castro Valley, Mt. Eden, and Foothill/Hillcrest Knolls. The plan identifies four major goals for redevelopment in the Project Area. These four goals focus on alleviation of economic blight, provision of public infrastructure, expansion of neighborhood improvements and eradica-

[1]San Lorenzo Village Center Specific Plan's website. http://www.sanlorenzoexpress.com/slzplan.htm, accessed on May 10, 2006.

tion of physical blight. Most of the Eden Area is located in a redevelopment area.

d. Resources, Open Space and Agriculture Plan (ROSA)

Alameda County is in the process of updating and redeveloping its ROSA plan to update existing General Plan elements in order to incorporate the policies and programs of recent area plans and include the addition of new policies and programs that identify important open space goals within the County that were not previously addressed in earlier documents. The following elements will be updated and incorporated into the ROSA plan:

- Resource Conservation Element, last updated in 1994
- Open Space Element, last updated in 1973 amended 1994
- Park and Recreation Element, last updated in 1968
- Scenic Route Element, last updated in 1966 amended 1994

The updated ROSA plan will examine the issue of agricultural resources, which have never been formally addressed in a County General Plan Element. The ROSA plan will be consistent with the restrictions on developmental intensification as specified in Measure D as well as the policies from the East County Area Plan.

Measure D is an initiative that passed in November, 2000, designed to preserve vanishing agricultural lands and to protect open space, watersheds, and wildlife habitat. The measure limits sprawl by setting a county urban growth boundary, preventing subdivision of the farms and ranches of eastern Alameda County and in the canyon-lands east of Castro Valley, Hayward, Union City and Fremont. The measure encourages infill and transit-friendly development to help revitalize neighborhoods within existing urban boundaries.[2] The restrictions enacted by the initiative can only be changed by a vote of Alameda County residents.

[2] Earthjustice's website: Accomplishments, Measure D Upheld by Court of Appeal. http://www.earthjustice.org/accomplishments/display.html?ID=102, accessed on March 25, 2003.

e. Alameda County General Plan, Housing Element

Adopted in 2003, the Housing Element identifies the amount, type and location of new housing units in Alameda County. The objectives of the document are listed below.

- Identify adequate sites which will be made available through appropriate zoning and development standards and with public services and facilities needed to facilitate and encourage the development of a variety of types of housing for all income levels;
- Assist in the development of adequate housing to meet the needs of low- and moderate income households;
- Address and, where appropriate and legally possible, remove governmental constraints to the maintenance, improvement, and development of housing;
- Conserve and improve the condition of the existing affordable housing stock;
- Promote housing opportunities for all persons regardless of race, religion, sex, marital status, ancestry, national origin, or color;
- Preserve for lower income households the identified assisted housing developments.

B. Standards of Significance

The Eden Area General Plan would create a significant land use impact if it would:

- Physically divide an established community.
- 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.
- Conflict with any applicable habitat conservation plan or natural community conservation plan.

C. Impact Discussion

This section begins with a summary of the land use changes that would occur under the Eden Area General Plan and then evaluates how these changes would affect land use issues.

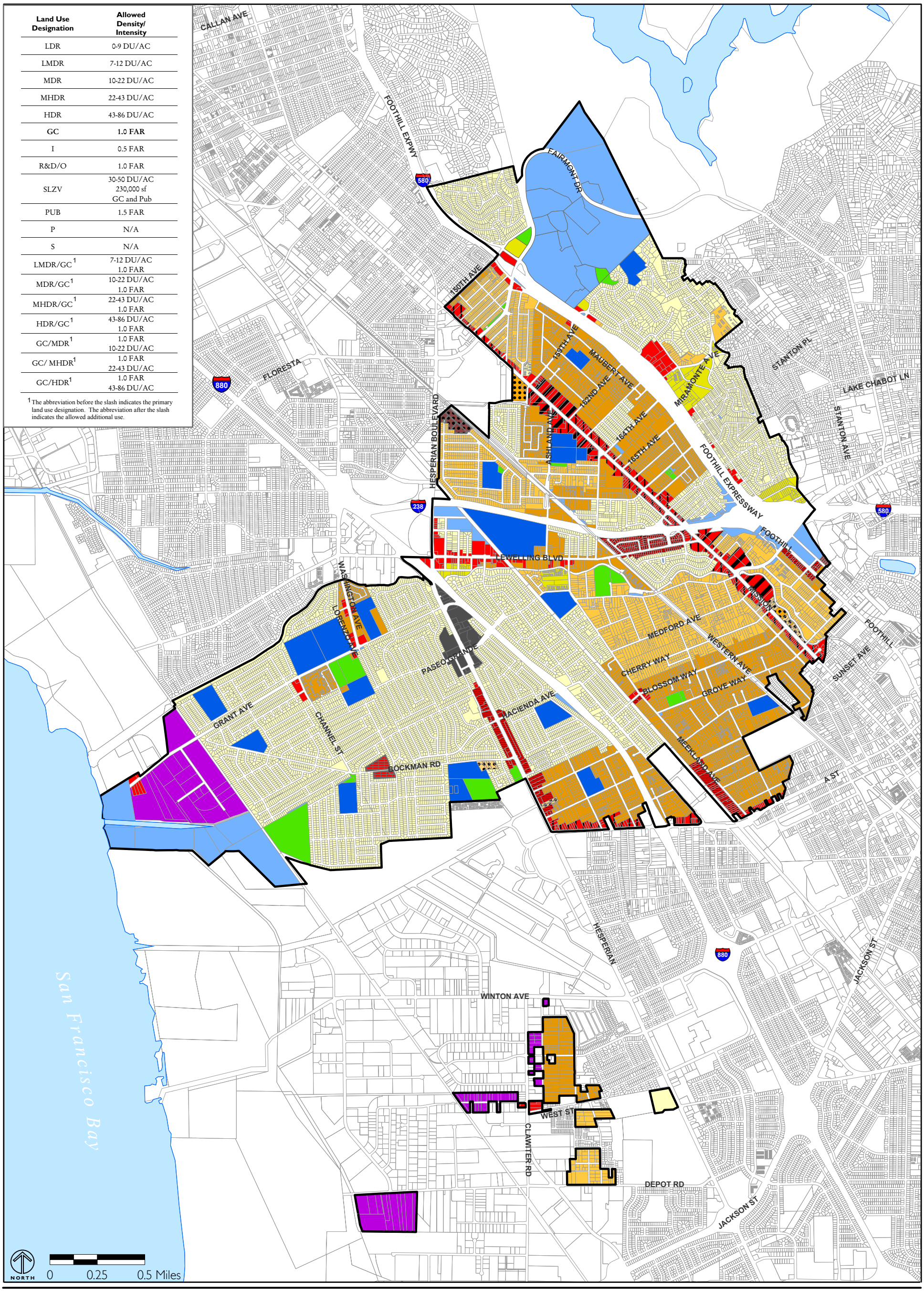
1. Land Use Designation Changes

The General Plan proposes to retain almost all existing Eden Area General Plan land use designations, with the addition of the following new categories. Figure 4.1-2 illustrates the proposed changes:

- **High Density Residential (HDR)** (Under the residential designation). Allowed uses under this designation include multi-family residential buildings between three and six stories in height. The densities allowed are between 43 to 86 dwelling units per acre.
- **General Commercial as an Additional Use (/GC)** (Under the residential designation). On specific parcels designated as Medium Density Residential, Medium-High Density Residential, or High Density Residential this designation is allowed as an additional use. Currently, there are five locations in the Eden Area where this designation is applied. Additionally, on some commercial parcels throughout the Eden Area, residential uses are allowed as an additional use if certain densities are met.
- **Light Industrial (I)** (Replaces the existing Industrial land use designation). Specific uses, ranging from light manufacturing to warehousing and distribution uses to research and development, are allowed under this designation. The area located in the Grant Avenue Industrial Area in San Lorenzo and Mt. Eden is where this designation is applied.
- **Research and Development/Office (R&D/O)**. Specific uses allowed under this designation include medium and large scale uses such as high-tech, medical, legal, insurance and similar uses. The reasoning for this new designation is to encourage conversion of industrial uses to R&D/O uses over the life of the General Plan.

Land Use Designation	Allowed Density/ Intensity
LDR	0-9 DU/AC
LMDR	7-12 DU/AC
MDR	10-22 DU/AC
MHDR	22-43 DU/AC
HDR	43-86 DU/AC
GC	**1.0 FAR**
I	0.5 FAR
R&D/O	1.0 FAR
SLZV	30-50 DU/AC 230,000 sf GC and Pub
PUB	1.5 FAR
P	N/A
S	N/A
LMDR/GC[1]	7-12 DU/AC 1.0 FAR
MDR/GC[1]	10-22 DU/AC 1.0 FAR
MHDR/GC[1]	22-43 DU/AC 1.0 FAR
HDR/GC[1]	43-86 DU/AC 1.0 FAR
GC/MDR[1]	1.0 FAR 10-22 DU/AC
GC/ MHDR[1]	1.0 FAR 22-43 DU/AC
GC/HDR[1]	1.0 FAR 43-86 DU/AC

[1] The abbreviation before the slash indicates the primary land use designation. The abbreviation after the slash indicates the allowed additional use.



Source: Design, Community & Environment. June, 2006.

FIGURE 4.1-2

PROPOSED GENERAL PLAN LAND USE DESIGNATIONS

COUNTY OF ALAMEDA
EDEN AREA GENERAL PLAN EIR

- **Study Area Boundary**
- **Low Density Residential (LDR)**
- **Low-Medium Density Residential (LMDR)**
- **Medium Density Resdiential (MDR)**
- **Medium-High Density Residential (MHDR)**
- **High Density Residential (HDR)**
- **General Commercial (GC)**
- **San Lorenzo Village (SLZV)**
- **Light Industrial and Research & Development/Office (I and R&D/O)**
- **Park (P)**
- **Public (PUB)**
- **School (S)**
- **Low-Medium Density Residential allowed as an Additional Use (*/LMDR)**
- **Medium Density Residential allowed as an Additional Use (*/MDR)**
- **Medium & High Density Residential allowed as an Additional Use (*/MHDR)**
- **High Density Residential allowed as an Additional Use (*/HDR)**
- **General Commercial allowed as an Additional Use (*/GC)**

* The asterisk before the slash indicates that a primary land use designation also applies in addition to this overlay. The underlying color on the map reflects this primary designation.

- ***San Lorenzo Village (SLZV).** This designation is intended to implement the vision, uses and intensities in the San Lorenzo Village Specific Plan, which was adopted by Alameda County in 2004. The Specific Plan must be followed as the controlling document for the San Lorenzo Village area. This designation covers approximately 30 acres and envisions the area as an active center with stores, public facilities, cultural uses, outdoor spaces and attractive streetscapes. The area is located on Hesperian Boulevard from Interstate 880 on the north to Via Mercado on the south.

2. Land Use Compatibility

The Eden Area General Plan outlines a number of goals and policies which address the location of incompatible land uses, which typically occur where industrial uses are adjacent to sensitive receptors such as residential areas. Typically, industrial uses are not compatible with residential, educational, or other uses due to factors such as potentially harmful air emissions, noise levels, and safety concerns. Existing incompatible uses in the Eden Area are located at the intersections of Mission Boulevard and Mattox Road, Hesperian Boulevard and Paseo Grande, and the west ends of San Lorenzo and Mt. Eden areas. Where such incompatibilities are identified, the Eden Area General Plan includes several goals, policies, and actions among its various elements that would mitigate impacts on adjacent land uses.

Policy P2 under Goal LU-11 would regulate for minimal smoke, odor, glare, excessive noise and other adverse impacts on employees and on adjoining uses and areas. The County would require mitigation measures to minimize the impacts on new Light Industrial development on adjacent areas (Policy P3 under Goal LU-15), as well as prohibiting new heavy industrial uses in the Eden Area (Policy P4 under Goal LU-15). The General Plan goes as far as calling for the phase out of existing, non-conforming industrial uses (Policy P1 under Goal LU-11). Additionally, with respect to areas designated as mixed-use, the General Plan states that the mixed-uses would be limited to compatible residential and commercial (Action A1 under Goal LU-7). This policy is further enforced by the County's zoning code.

Policy P7 under Goal N-1 would require noise-sensitive projects proposed within noise-affected areas (subject to noise levels exceeding 60 dB L_{dn}) to be subject to acoustical studies and provide necessary mitigation from noise. Additionally, local businesses would be encouraged to reduce noise impacts on the community by replacing excessively noisy equipment and machinery, applying noise-reduction technologies and following operating procedures that limit the potential for conflicts with noise-sensitive land uses (Policy P7 under Goal N-2). Furthermore, Goal N-3 would control sources of noise from transportation sources.

Under the Public Safety Element, Policy P2 under Goal SAF-5 would require new or expanding businesses to demonstrate compliance with the hierarchy of waste management strategies listed in Policy P1 under this Goal as a condition of receiving land use and business permits. Policy P5 under Goal SAF-5 would require adequate separation be provided between areas where hazardous materials are present and sensitive uses such as schools, residences and public facilities.

Given the General Plan policies to mitigate for potential incompatibility between neighboring land uses, the proposed land use designations would not result in incompatible land uses or result in a conflict with established land uses. As a result, no significant impact would occur in regards to incompatibility between land uses under the General Plan.

3. Divisions of Existing Communities

The General Plan does not propose the construction of any large physical structures or features that would physically divide an established community. In fact, the General Plan contains goals and policies which seek to protect existing communities within the Eden Area. For example, Goal LU-1 seeks to establish a clearly defined urban form and structure to the Eden Area in order to enhance the area's identity and livability. Where new development and redevelopment occurs, Policy 2 under Goal LU-1 would encourage the advancement of an unified and coherent pattern of development, maximizing the use of land and filling in gaps in the urban environment. Furthermore,

Goal LU-2 seeks to promote and maintain physically coherent and logical boundaries of the Eden Area.

Transportation goals and policies identified in the General Plan would generally be designed to connect to the existing circulation system and to avoid elements that would reduce existing community connectivity or divide existing neighborhoods. For example, Policy P3 under Goal CIR-1 would promote land use concepts that minimize automobile trips and encourage walking, bicycling and transit use. Goals CIR-6 and CIR-7 promotes a comprehensive walking and bicycling network throughout the Eden Area. Equally important is the negative effects of traffic on adjacent land uses and improving traffic safety (Goal CIR-9). This goal is supported by Policy P5 under Goal CIR-9 by requiring that road widening projects be limited to ensure that roadways do not become barriers between neighborhoods.

As a result of these goals and policies, implementation of the General Plan would not result in significant land use impacts associated with the physical division of an established community. These goals and polices would promote the connection and unity of existing communities within the Eden Area, and as such no impacts are identified.

4. Consistency with Applicable Plans

There are no habitat conservation plans or natural community conservation plans that apply to the Eden Area or its Planning Area. Therefore the project would not result in impacts with applicable plans, policies and regulations in the Eden Area.

D. Impacts and Mitigation Measures

Since no impacts are identified, no mitigation measures are required.

4.2 COMMUNITY SERVICES

This chapter presents information on existing community services in the Eden Area, including police, fire, schools, libraries and parks and recreation, and describes the effects of the proposed project related to provision of these services. This section is organized according to type of community service, with each service analyzed individually. As noted earlier, the City of Hayward is in the process of annexing portions of the Mt. Eden subarea; however for purposes of analysis, the impacts of growth in this area are analyzed in this EIR.

A. Police

This section describes current conditions and potential impacts of the proposed project with regard to police services in the Eden Area.

1. Existing Conditions

Police service in the Eden Area is provided by the Alameda County Sheriff's Office. Currently, the office has over 1,500 employees, both sworn and professional staff.[1] The Sheriff's Office serves the Eden Area from three main facilities:

- Eden Township Substation, which houses the Law Enforcement Services (LES) Division and the Crime Laboratory, located at 15001 Foothill Boulevard in the unincorporated area of San Leandro.
- Community Crime Prevention Unit office, located on 1530 167th Avenue in San Leandro.
- Emergency Services Dispatch Center, located on 150th Avenue in San Leandro.

As of March 2006, the Sheriff's Office has 162 sworn officers, including one captain, six lieutenants, 25 sergeants and 130 patrol officers assigned to the

[1] Alameda County Sheriff's website. http://alamedacountysheriff.org/mainpage.htm, accessed on January 26, 2005.

Eden Township Substation. These number of sworn personnel produces a ratio of 1.9 officers per thousand residents in the Eden Area. The Office also has 37 non-sworn positions, which include administrators, counselors, and other support personnel. The existing level of police service to the Eden Area is considered by the Sheriff's Office to be adequate.[2]

The current response time for the Sheriff's Office is between three and five minutes. In 2005, there were 48,403 calls for service and 67,941 officer-initiated activities from the Eden Area.[3]

Crime reporting statistics for the Eden Area are collected according to the following areas: Ashland, Cherryland, San Lorenzo and "other." In 2005, of stolen vehicles, robbery, auto burglary, commercial burglary, residential burglary, grand theft and graffiti/vandalism, stolen vehicles were the most recorded crimes in the Eden Area. The next biggest category was auto burglary, followed by residential burglary. Graffiti/vandalism had the lowest recorded crime rate.[4]

The current facilities provide 11,340 square feet for law enforcement operations, 6,000 square feet for Dispatch/Warrants/Records, 4,500 square feet for Youth and Family Services, 4,000 square feet for Property/Evidence, and 7,560 square feet for the Crime Lab. The sum of these comes to a total size of 33,400 square feet, which is not sufficient, based on a recent analysis of current facility needs. The analysis established a need for a facility with at least 93,583 square feet.[5]

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[2] Personal written communication from Captain Roger Power, Alameda County Sheriff's Office, to Justin Kosta, DC&E, on March 29, 2006.

[3] Personal written communication from Diana M. Tuttle, Crime Analyst, Alameda County Sheriff's Office, to Jose Moreno, DC&E, on May 20, 2006.

[4] Diana M. Tuttle, Crime Analyst, *Crime Analysis Unit Monthly Report: December, 2004 & 2005*, prepared for the Crime Prevention Unit, Alameda County Sheriff's Office.

[5] Personal written communication from Lieutenant William Gaudinier, Alameda County Sheriff's Office, to Sue Beazley, DC&E, on February 14, 2005.

Lacking the necessary infrastructure and design features to adequately meet law enforcement needs for the area, the Sheriff's Office has been working over the past five years toward the construction of a new Law Enforcement facility. This new facility will be located at 2700 Fairmont Drive, in the unincorporated area of Alameda County and within the area covered by the Eden Area General Plan. Current plans include the construction of a new Law Enforcement Complex of approximately 220,000 square feet to house the Law Enforcement Services Division, the Coroner's Office, the Sheriff's Crime Laboratory and the Emergency Services Dispatch Center. The proposed building size incorporates anticipated staffing increases over the next 25 years.[6]

Mutual aid agreements exist between all law enforcement agencies throughout Alameda County. The Alameda Sheriff's Office coordinates mutual aid for the entire County as the need arises.

2. Standards of Significance

The proposed project would have a significant impact related to police services if it would:

- Result in substantial physical impacts associated with the provision of new or physically altered police protection facilities, or the need for new or physically altered police protection facilities in order to maintain acceptable service ratios, response times or other performance objectives.

3. Impact Discussion

An increase in population under the proposed General Plan could have the potential to increase the demand for police services within the Eden Area. Buildout under the proposed plan could add approximately 16,560 persons in the Eden Area over the next twenty years. Based on these projections, the Sheriff's Office estimates a need increase of at least 16 sworn personnel and 2

[6] Personal written communication from Captain Roger Power, Alameda County Sheriff's Office, to Justin Kosta, DC&E, on March 29, 2006.

non-sworn staff to maintain or exceed current service levels. These staffing numbers, along with increases anticipated as a result of other demands for service, are included in the calculations for the new 220,000 square foot law enforcement complex.[7]

As mentioned earlier, the current facility housing Law Enforcement Services, which provides basic police services within the unincorporated areas of the County, is severely overcrowded. The need for new facilities for the Sheriff's Office is independent of any potential demand posed by projected population growth in the Eden Area, which has conducted its own EIR. However, the proposed General Plan includes policies and actions in the Public Facilities and Services element which would ensure that the size of the Sheriff's Office facilities and number of personnel reflect the expected population growth. For example, Policy P2 under Goal PF-1 would require the Sheriff's Office to maintain adequate police staffing, performance levels and facilities to serve the Eden Area's existing population as well as its future growth.

Due to increased population and traffic congestion projected under the proposed General Plan, the potential exists for police response times to lengthen. However, the proposed General Plan contains a policy that requires police response time for Priority One Emergency calls be no longer than five minutes (Policy P5 under Goal PF-1). As the Eden Area continues to grow and intensify, it will be vital to coordinate between land use planning and law enforcement (Goal PF-2) as an effective means of preventing crime. Furthermore, as the need arises, new police substations shall be located in Districts or along Corridors wherever possible and feasible (Policy P4 under Goal PF-2).

As a result of these policies, implementation of the General Plan would result in a less than significant impact to police services.

[7] Personal written communication from Captain Roger Power, Alameda County Sheriff's Office, to Justin Kosta, DC&E, on March 29, 2006.

4. Cumulative Impact Discussion

Future regional growth will result in a need for expanded police service throughout Alameda County. However, only growth within the Eden Area would result in the need for the County to construct additional police facilities to serve its population, which could result in additional environmental impacts. The impact discussion above accounts for the potential growth within the area that would be provided police service by the County; as noted above, any potential impacts from development of new or expanded facilities that would be needed would be identified and evaluated at the time such facilities were proposed. Given this, the plan would not contribute to a significant cumulative impact associated with police services.

5. Impacts and Mitigation Measures

Since no impacts were identified, no mitigation measures are required.

The policies above address the project area's need to continually provide adequate facilities for additional police personnel over the life of the General Plan. Any potential impacts arising from the creation of new police facilities as a result of Eden Area growth would be addressed in a separate EIR analysis.

B. Fire Protection and Emergency Medical Services

This section describes current conditions and potential impacts of the proposed project with regard to fire protection and emergency medical services in the Eden Area.

1. Existing Conditions

Fire and emergency services for the Eden Area are provided by the Alameda County Fire Department and the City of Hayward Fire Department.

a. Alameda County Fire Department

Alameda County Fire Department (ACFD) provides fire services to the majority of the Eden Area. The ACFD's total service area is approximately 460

square miles, providing all risk service to the unincorporated areas of Alameda County, City of San Leandro, and City of Dublin and to the Lawrence Berkeley National Laboratory, in Berkeley California. The population served by the ACFD is about 234,500. The ACFD has 2 battalions, 18 fire stations, 18 engine companies, and 4 ladder truck companies. The ACFD's has three Specialized Response Teams: Hazardous Materials, Urban Search & Rescue, and Water Rescue.[8]

The following three ACFD fire stations serve the Eden Area:

- **San Lorenzo Station #1 located at 427 Paseo Grande, San Lorenzo.** The station houses 1 engine company and services the downtown, residential and business areas of San Lorenzo.
- **Cherryland Station #2 located at 109 Grove Way, Hayward.** The station houses one engine company and one reserve engine. The station services the southernmost parts of San Lorenzo, as well as Cherryland and Hayward Acres.
- **Ashland Station #3 located at 1430 164th Avenue, San Leandro.** The station consists of two engine companies and services all of Ashland, Hillcrest Knolls, and El Portal Ridge as well as major sections of Interstate 580 and Interstate 238. Emergency Medical Services/Training Division offices are located behind Station 3 and house EMS and training staff.

At present, ACFD is meeting the required standard response times from each station for a first alarm fire by a three engine company plus a battalion chief.[9] However, according to the County's Capital Improvement Plan (CIP), three of the County's fire stations are inadequate and require replacement.[10] The San Lorenzo fire station (Station 1) requires replacement, and will require

[8] Alameda Fire Department's website. http://www.co.alameda.ca.us/fire/geninfo.htm, accessed on January 26, 2006.

[9] Personal communication from Don Graff, ACFD, to DC&E. April 4, 2005

[10] Personal communication from Don Graff, ACFD, to DC&E. April 4, 2005.

another site as its existing site is too small for a replacement facility. Station 1 is owned by the San Lorenzo Homes Association and is leased by the ACFD. The Cherryland Fire Station (Station 2) requires replacement as replacement is less expensive than seismic upgrade of the facility. The Ashland Fire Station (Station 3) requires expansion to serve as a maintenance facility. In addition, the remaining four stations in the Unincorporated Area need seismic upgrading or replacement.

A number of fires safety concerns exist in the Eden Area which correspond with ACFD's and the Hayward Fire Department's (HFD) ability to provide adequate fire services to the area. These concerns include:

- Emergency operations on adjacent interstate highways.
- A high number of building and fire code violations. One deals with the actual construction of the building, the second deals with the proper maintenance of it.
- Difficult passage for emergency vehicles for at-grade railroad crossings, especially to the industrial areas at the west end of Grant Avenue. Responding fire personnel are consistently delayed by trains, both freight and passenger, as they traverse the Plan Area.
- A mix of manufacturing, industrial, storage and residential uses along the Meekland Avenue corridor, involving the full spectrum of fire safety concerns, where residences are a low risk and industrial/commercial are a high risk.
- Poor hydrant spacing in portions of Ashland, Cherryland and San Lorenzo.
- Inadequate fire flow, less than the required 1000 gallons per minute, in the industrial complex at the western end of Grant Avenue in San Lorenzo, along Meekland Avenue in Cherryland and in El Portal Ridge, Hillcrest Knolls and Mt. Eden.

Table 4.2-1 identifies the type and quantity of emergency calls that the ACFD receives in a typical year. During the 2002-2003 year approximately 10,621

emergency calls were received by the ACFD. Of those calls approximately 2,018 were fire calls and the remaining 8,603 were medical calls. The table breaks down this information according to the three different ACFD station in the Eden Area.

TABLE 4.2-1 **CALLS TO ACFD FOR SERVICE IN THE EDEN AREA (2002-03)**

Calls by Type	Entire Unincorporated Area	Station 1: San Lorenzo	Station 2: Cherryland & Hayward Acres	Station 3: Ashland, Fairmont Campus, Hillcrest & El Portal Ridge
Total Emergency Calls	10,621	1,634	1,565	2,471
Fire Calls	2,018	352	298	496
Medical Calls	8,603	1,282	1,267	1,975

Source: Personal communication from Sheldon Gilbert, Deputy Chief of Support Services, ACFD, to Sue Beazley, DC&E, on January 28, 2005.

b. Hayward Fire Department

The Mt. Eden sub-area is serviced by the Hayward Fire Department, from Station #4, located on Loyola Avenue at Panama Street. This station is staffed by three Fire Department employees with one engine on site. Services, including emergency medical, are provided under a contract agreement with Alameda County. As part of the South Mutual Aid Zone, Hayward Fire Department also provides mutual aid with the ACFD and the fire departments of the cities of Newark, Union City and Fremont.[11]

[11] Phone interview with Deputy Chief Paul Valencia, February 26, 2003. Verified through personal e-mail and phone communication with Dean Montevago, Fire Marshall, Hayward Fire Department, with Justin Kosta, DC&E, on February 2, 2006.

The Hayward Fire Department has 120 employees, including 110 firefighters. The current service ratio is 1 firefighter per 1,200 residents (or 0.83 per 1,000). The Fire Department received a total of 37 calls to the Mt. Eden sub-area in 2004, an average of about three calls a month. The average response time to the Mt. Eden sub-area is about three minutes. The Department considers the facilities at Fire Station #4 to be adequate to provide service.[12]

2. Standards of Significance

The proposed project would have a significant impact related to fire protection and emergency medical services if it would:

- Result in substantial physical impacts associated with the provision of new or physically altered fire protection facilities, or the need for new or physically altered fire protection facilities in order to maintain acceptable service ratios, response times or other performance objectives.

3. Impact Discussion

a. Alameda County Fire Department

There would be no impact on County fire services, according to Don Graff of the ACFD.[13] An increase in population under the proposed General Plan could have the potential to increase the demand for fire services within the Eden Area. Buildout under the proposed plan would intensify the density of development within the Eden Area, adding approximately 5,691 new residential units with an estimate buildout population of 16,560 people over the next twenty years.

To maintain or exceed current performance levels and response times, Policy P2 under Goal PF-2 would require the County to plan for new fire stations locations as needed. Additionally, necessary fire and emergency personnel would be provided, to the greatest extent feasible, to meet residential and em-

[12] Personal e-mail and phone communication with Dean Montevago, Fire Marshall, Hayward Fire Department, February 2, 2005.

[13] Personal phone communication with Don Graff, Alameda County Fire Department, with Justin Kosta on March 8, 2006.

ployment growth in the Eden Area (Policy P6 under Goal PF-2). ACFD does not currently receive developer impact fees for development projects within their Eden Area jurisdiction.[14]

The proposed General Plan addresses needed fire flow improvements through Policy P5 under Goal PF-2, which states that fire flow shall be improved to 1,000 gallons per minute in areas with identified deficiencies, including the industrial complex at the western end of Grant Avenue in San Lorenzo, along Meekland Avenue in Cherryland and in El Portal Ridge, Hillcrest Knolls and Mt. Eden. In addition, development on steep terrain is addressed through Policy P4 under Goal SAF-4, which states that in the effort to ensure fire safety, the County shall restrict development as necessary in areas with steep terrain (Police P4 under goal SAF-4).

As previously stated, the three fire stations in the Eden Area are operated by the ACFD and are in need of repair, upgrade or complete replacement. The need for new facilities for the ACFD is independent of any potential demand posed by projected population growth in the Eden Area. Nevertheless, Policy P4 under Goal PF-2 would require old or outdated fire facilities to be replaced with new facilities containing the necessary infrastructure and design features to adequately support fire and emergency functions for the area.

b. Hayward Fire Department

90 new residential units and 150 new industrial jobs are projected for the Mt. Eden Area over the life of the proposed General Plan. According to Deputy Fire Chief Paul Valencia, of the Hayward Fire Department, any increase in population or housing units within the Eden Area jurisdiction (Mt. Eden) would trigger the need for new fire facilities to maintain adequate service levels.[15] As previously stated, approximately 90 single-family units are anticipated to be developed within the Eden Area of the life of the General Plan.

[14] Personal phone communication with Don Graff, Alameda County Fire Department, with Justin Kosta on June 26, 2006.

[15] Personal phone communication with Paul Valencia, Hayward Fire Department, with Justin Kosta on March 13, 2006.

According to the Association of Bay Area Governments (ABAG), the current average household has 2.71 people. That means that over the life of the General Plan, approximately 245 people would be added to the Mt. Eden Area. This would not constitute an impact for the HFD because existing and proposed policies addressing fire service levels would mitigate this potential impact to a less than significant level. In addition, at the time the HFD expands their facilities, on constructs new facilities, a complete evaluation of potential environmental impacts would be conducted under CEQA.

4. Cumulative Impact Discussion

Future regional growth would result in a need for expanded fire service throughout Alameda County. However, only growth within the Eden Area would result in the need for the ACFD and HFD to construct additional facilities, which could result in additional environmental impacts. The impact discussion above accounts for the potential growth within and its effects on the service levels of both the ACFD and HFD. No significant impact was identified in regards to the construction of new and expanded facilities. Therefore, the project would contribute to *no significant* cumulative impact associated with fire services.

5. Impacts and Mitigation Measures

Since no impacts were identified, no mitigation measures are required.

C. Schools

This section describes current conditions and potential impacts of the proposed project with regard to local schools.

1. Regulatory Setting

The regulatory framework for schools is determined at the school district and State level. Senate Bill 50 (funded by Proposition 1A and 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 fee. The Bill generally provides for a 50/50 State and local school facilities funding match, with a $9.2 billion bond authorized to fund the State portion.[16]

SB 50 also provides for three levels of statutory mitigation fees. The applicable level depends on whether State funding is available, the school district is eligible for State funding, and the school district meets certain additional criteria involving bonding capacity, year round school, and the percentage of moveable classrooms in use.

In addition SB 50 establishes the base amount of allowable developer fees. These base amounts are known as "Level 1" fees and are subject to inflation adjustment every two years. The latest fee adjustment was made in January 2006 to $2.63 per square foot of assessable space for residential construction and $0.42 per square foot of chargeable covered and enclosed space for commercial and industrial construction. School districts may charge less than the Level 1 fees.[17]

2. Existing Conditions

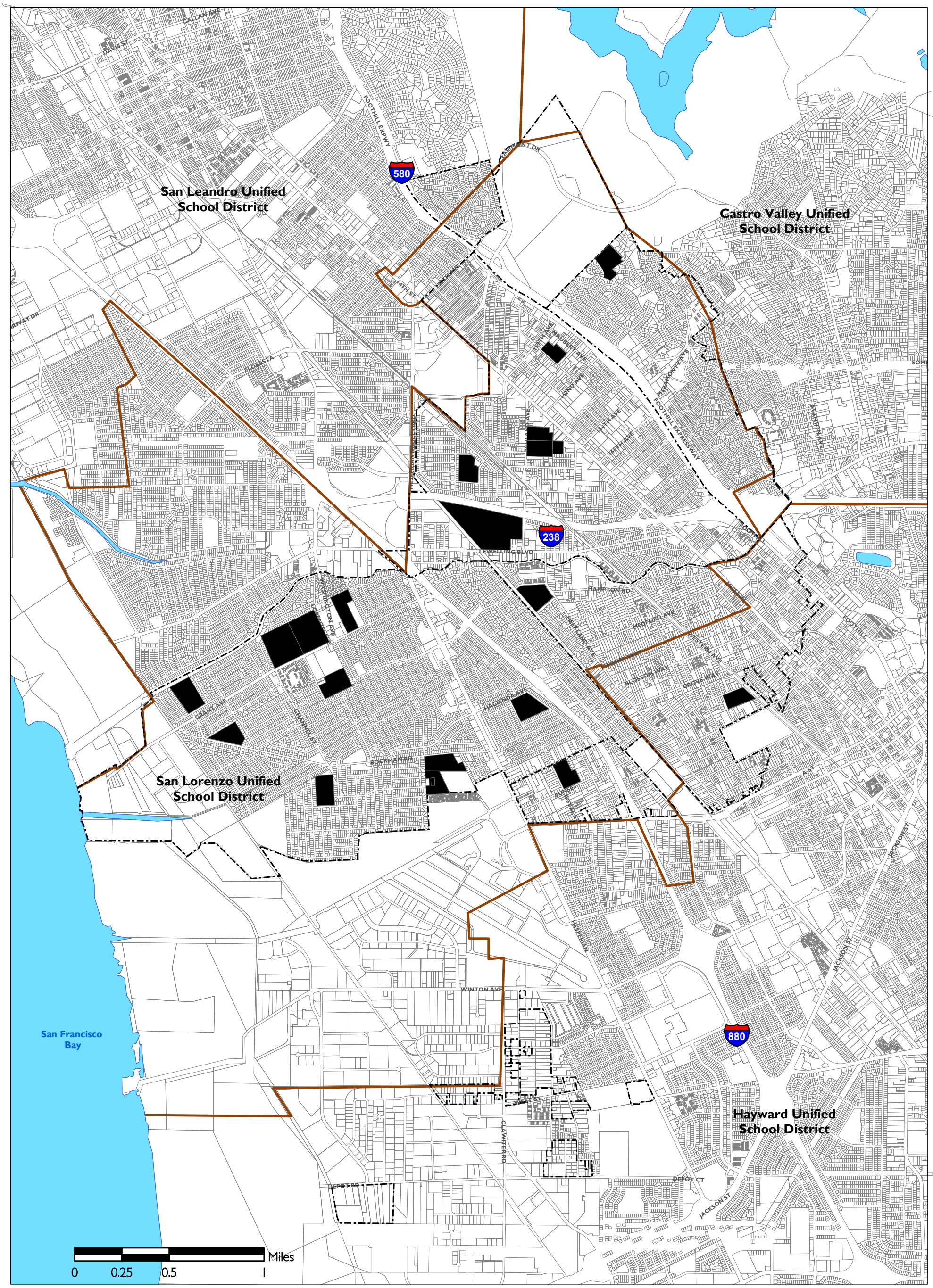
The Eden Area is served by two school districts: the San Lorenzo Unified School District (SLZUSD) and the Hayward Unified School District (HUSD). Figure 4.2-1 shows the schools and school districts that service the Eden Area.

a. San Lorenzo Unified School District

The SLZUSD operates nine elementary schools, three middle schools and two high schools. All but three of these are in the Eden Area. The SLZUSD also operates a continuation high school, special education program and inde-

[16] San Lorenzo Unified School District, *Level 1 Developer Fee Justification Study*, page 3.

[17] For a full description of Level 1, 2 and 3 fees, refer to http://www.legalelite.com/qa/(q)schoolneedsdc.htm#2.



School District Boundaries

Study Area Boundary

School Locations

FIGURE 4.2-1

SCHOOLS AND SCHOOL DISTRICT BOUNDARIES

pendent/home study program (home schooling), which is a form of home schooling. The SLZUSD generally maintains a 20:1 student to teacher ratio in grades K through 3 and a 25:1 ratio in grades 4 through 12.[18] Enrollment and capacity figures for each school in the SLZUSD are provided in Table 4.2-2. As shown in Table 4.2-2, seven schools are very near capacity, at capacity, or well over capacity as of January 2006, while all the remaining schools are well under capacity. As of April 2006, the District is not planning for any new school facilities. However, due to the passage of Measure E ($49 million bond) in November 2004, the District is updating several of their facilities.[19] Table 4.2-3 shows the projects the District plans to undertake with the proceeds from the bond.

The District's staffing for 2004-2005 totaled 1,110 employees, including 594 classroom teachers and librarians.[20] The SLZUSD recently completed a five-year upgrade process of its schools including electrical and plumbing upgrades, replacement of roofs and flooring and installation of internet access.

As noted earlier, State law limits the amount that new development can be required to pay to mitigate impacts on schools. As of April 24 of 2006, the SLZUSD collects $2.63 per square foot from residential development to compensate for growth impacts, and $0.42 per square foot from commercial development.[21] The funds derived are far short of the amounts needed to reconstruct District schools or to add space through new construction.[22] As of January of 2006, the SLZUSD has not performed a student generation rate

[18] Personal written communication from Gloria Mohr, Business Services, SLZUSD, to Sue Beazley, DC&E, on February 23, 2005.

[19] Personal written communication from Gloria Mohr, Business Services, SLZUSD, to Jose Moreno, DC&E, on April 25, 2006.

[20] SLZUSD, *2004-2005 Information Guide* (brochure).

[21] Personal written communication from Gloria Mohr, Business Services, SLZUSD, to Jose Moreno, DC&E, on April 25, 2006

[22] San Lorenzo Unified School District, *Level 1 Developer Fee Justification Study*, page 11.

TABLE 4.2-2 **SLZUSD SCHOOL ENROLLMENT AND CAPACITY**

School	Site Capacity	Current Enrollment January 2006
Bay Elementary	650	527
Colonial Acres Elementary	650	580
Del Rey Elementary	650	583
Grant Elementary	650	428
Hesperian Elementary	650	700
Hillside Elementary	550	547
Lorenzo Manor Elementary	650	631
Bohannon Middle	1,200	953
Edendale Middle	800	889
Washington Manor Middle	650	846
Arroyo High	1,800	1,917
Royal Sunset High	600	227
San Lorenzo High	1,600	1,587
TOTAL	**11,100**	**10,415**

Source: Personal fax communication from Gloria Mohr, San Lorenzo Unified School District, to Justin Kosta, DC&E, on January 25, 2006.

study. Therefore, the SLZUSD typically uses the student generation rate utilized by the Office of Public School Construction of 0.7 students per housing unit, for all housing types.[23]

[23] Personal written communication from Gloria Mohr, Business Services, SLZUSD, to Sue Beazley, DC&E, on February 24, 2005.

TABLE 4.2-3 **SLZUSD PROPOSED PROJECTS USING MEASURE E**

Project Description	Estimated Cost
Library improvements at each school	$1,200,000
Flooring – remove asbestos and replace worn out areas at each school	$1,200,000
Student safety upgrades to elementary playground equipment and middle & high school bleachers	$2,000,000
Science labs – new updated labs at each middle school and high school	$15,6000,00
Portables – replace those that are temporary and in worst condition with permanent construction	$11,250,000
Community center/gym and music rooms at each middle school	$7,000,000
Restroom renovations at each school	$5,430,000
Technology – upgrade and improve classroom computer systems and infrastructure at all schools	$5,320,000
Total:	**$49,000,000**

Source: San Lorenzo Unified School District.

Along with the revenue resulting from developer fees, the District leases out six of its facilities. Information on each leased District site is shown on Table 4.2-4. The revenue the District earns from these sites is $858,000 per year.[24]

b. Hayward Unified School District

The Hayward Unified School District (HUSD) operates one school in the area: Cherryland Elementary School. Although the District does not have a policy on student-to-teacher ratios, it does have a policy on class sizes: for K-3, the maximum is 20 students; and for 4-12, the maximum is 30 students.[25]

[24] Personal written communication from Gloria Mohr, Business Services, SLZUSD, to Jose Moreno, DC&E, on April 25, 2006.

[25] Personal e-mail communication from Cindy Rocha, Hayward Unified School District, to Jose Moreno, DC&E, on April 26, 2006.

TABLE 4.2-4 **SLZUSD LEASED SCHOOL SITES**[26]

SLZUSD Site	Address	Leased By
Lewelling School	750 Fargo Avenue, San Leandro	Bay Area Chinese Bible Church
El Portal School	2330 Pomar Vista, Castro Valley	Camelot Schools
Barrett School	2005 Via Barrett, San Lorenzo	Challenger Schools
Royal Sunset (partial)	20450 Royal Avenue, Hayward	Heart of the Bay Christian Center
Martin School	1000 Paseo Grande, San Lorenzo	Redwood Christian Schools
Fairmont Terrace School	2275 Arlington Drive, San Leandro	Seneca Center

Source: **San Lorenzo Unified School District**

As of April 2006, Cherryland Elementary had 892 students enrolled in the 2005-06 school year, with an additional 56 pre-school students, and employed 52 teachers. Currently, the school's capacity is 894 students.[27] Additionally, while outside of the Eden Area, Eden Gardens Elementary, located on Thayer Avenue, is attended by students from the Mt. Eden Community. In the school year of 2005-2006, Eden Gardens had an enrollment of 547 students and employed 22 teachers, with a capacity of 650 students.[28]

The District is currently preparing a Facilities Master Plan, which is scheduled for approval by the Board of Trustees by the end of summer 2006 and covers a 15-year building program. Modernization of existing facilities would begin in the summer of 2007. Currently, a new elementary school is under

[26] Communication via fax from Gloria Mohr, Business Services, SLZUSD, to Justin Kosta, DC&E, on January 25, 2006.

[27] Personal communication with Maryland Batiste, Office Manager at Cherryland Elementary, and Jose Moreno, DC&E, on April 20, 2006.

[28] Personal communication with Maryland Batiste, Office Manager at Cherryland Elementary, and Jose Moreno, DC&E, on April 20, 2006.

construction, which is scheduled for completion in September of 2006 – Stonebrae Elementary School, in the Blue Rock Country Club development (outside of the Eden Area). A new Burbank Elementary School is scheduled to be built starting in the summer of 2007, which will replace the existing Burbank Elementary School. This new facility will be located near the intersection of Burbank and "C" Streets.[29]

The HUSD assesses charges of $2.62 per square feet for new residential development to compensate for growth impacts, and $0.36 per square foot for new commercial development. The last revision of Development Fees was August 25, 2005.[30] Similar to SLZUSD, the HUSD has not produced a student generation rate as of April 2006.

3. Standards of Significance

The proposed project would have a significant impact related to schools if it would:

- Result in substantial physical impacts associated with the provision of new or physically altered school facilities, or the need for new or physically altered school facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable performance objectives.

4. Impact Discussion

The construction of approximately 5,691 new housing units within the Eden Area, would result in new students at all grade levels. Based on a student generation rate of 0.07 students per housing unit, as mentioned above, approximately 3,984 students could be generated in the Eden Area. These students would be spread across the various schools operated by the San Lorenzo Unified School District (SLZUSD) and the Hayward Unified School District

[29] Personal e-mail communication from Cindy Rocha, Hayward Unified School District, to Jose Moreno, DC&E, on April 26, 2006.

[30] Personal e-mail communication from Cindy Rocha, Hayward Unified School District, to Jose Moreno, DC&E, on April 26, 2006.

(HUSD) within and adjacent to the Eden Area. As a result of this generation, additional staff, facilities and equipment would be required to meet or exceed the current school standards. The need for additional facilities may result in a potentially significant impact.

Goals within the proposed General Plan address the potential impact of new students generated in the effort to ensure schools are not inundated with unexpected students in the future. Goal PF-7 would seek to ensure that school services meet the educational needs of Eden Area residents. Policy P2 of this Goal would require the County to continue to provide the school districts with the opportunity to review large proposed residential developments and make recommendations about the need for additional facilities based on student generation rates and existing school capacity. Additionally, when a public school parcel is to be designated for a new public use or sold off for a public use, it is highly recommended there be a public input process to provide feedback to the County about the proposed new use of the parcel (Policy P3 of this Goal). As to the accessibility of schools to students, Policy P5 of this Goal would require safe and direct pedestrian and bicycle access to schools, including new sidewalks, bicycle paths, bike lanes on roadways and direct connections from residential areas be provided as funding becomes available and redevelopment opportunities occur. Furthermore, as noted above, California Government Code Section 65996(a) requires that developer fees be assessed and used to mitigate environmental impacts associated with the construction of new school facilities.

As a result, implementation of the General Plan would result in a less than significant impact on the adequate provision of school services.

5. Cumulative Impact Discussion

As previously stated, both the SLZSD and HUSD collect developer fees to offset the population growth associated within new residential and commercial development within the areas serviced by the school districts. These fees are considered adequate mitigation to offset any impacts associate with new growth.

6. Impacts and Mitigation Measures

Since no impacts to schools were identified, no mitigation measures are required beyond payment of adopted development mitigation fees.

D. Libraries

This section describes current conditions and potential impacts of the proposed project with regard to library services in the Eden Area.

1. Existing Conditions

The Alameda County Library System provides service to the Eden Area.[31] The library serving the majority of the Eden Area is located in San Lorenzo, at 395 Paseo Grande. The San Lorenzo Library, built in 1969, has 11,867 square feet of floor area. The library has 20 staff positions, or 13.7 full-time equivalent positions. The Library System is currently exploring funding possibilities to expand or replace this facility. Eden Area residents are also served by the Castro Valley Library, located in Castro Valley at 20055 Redwood Road. This 10,239 square foot facility has 19 staff positions, or 12.5 full-time equivalent positions. This facility will be replaced by a new 34,000 square-foot facility which is expected to open in 2009.[32]

The County Library System recommends that library facilities space should be between 0.5 and 0.6 square feet per capita. Based on 2004 population estimates of 59,858 people, the San Lorenzo and Castro Valley Libraries have 0.2 and 0.17 square feet per capita, respectively.

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[31] Information in this section was provided and/or reviewed by Peggy Watson, Head of Branches, Alameda County Library via personal e-mail communication, February 4, 2005.

[32] Harris, Linda. Facilities Coordinator, Alameda County Library. Personal communication with José Moreno, DC&E. August 29, 2006.

Other libraries that are available to residents of the Eden Area, as well as other communities include:

- South Branch of the San Leandro Public Library, located on East 14th Street at 148th Avenue. Approximately 1,000 square feet.[33]
- The Mulford-Marina Branch Library, located on 13699 Aurora Drive in San Leandro. This branch currently contains approximately 1,735 square feet of floor area.
- Main Branch of Hayward Public Library, located on "C" Street at Mission Boulevard. Currently, this facility has 24,500 square feet of floor area.[34]

To obtain a library card the San Leandro Library charges $50 per household for non-city residents, which reflects a special tax the City imposes on its home owners. Hayward's Library has no charge to obtain a library card for non-city residents.

The County Library District's Strategic Plan, released in 1998, was produced in response to the significant demographic, technological and fiscal challenges that currently confront the Library. These challenges, which continue in 2005, include:

- The growing need for library services due to population growth.
- Rapidly changing information technologies that change the library's role.
- Severe limitations on the District's financial resources.

2. Standards of Significance

The Eden Area General Plan would have a significant impact related to library services if it would:

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[33] Personal telephone communication with Hollis Lesur, Branch Manager, June 26, 2006

[34] Personal communication with Judy Sander, acting Library Operation Manager for the Hayward Library, and Jose Moreno, DC&E, on April 27, 2006.

- Result in substantial physical impacts associated with the provision of new or physically altered library facilities, or the need for new or physically altered library facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable performance objectives.

3. Impact Discussion

Implementation of the proposed General Plan would result in an increase in population. Five libraries currently serve the residents of the Eden Area with a combined square footage of 49,339 square feet. Under the proposed General Plan, the population of the Eden Area would increase by approximately 16,560 people, which would bring the total of people living within the Eden Area to approximately 76,418 people. Based on the County's adopted standard of 500 to 600 square feet of library space per thousand residents and the estimated growth in population projected from the proposed plan, buildout under the proposed General Plan would require approximately between 38,209-45,850 square feet of combined library space. The libraries that currently serve the Eden Area currently exceed this standard. Furthermore, the new 9,200 square foot Manor Brach library, located on Manor Boulevard in San Leandro, is scheduled to open during the summer of 2006. No impacts are anticipated for library services due to the fact that the libraries which serve the Eden Area already exceed the County's library square footage to population ratio.

The proposed General Plan contains goals and policies addressing the need to maintain adequate library services. Goal PF-5 seeks to provide sufficient library services to meet the information, cultural and educational needs of the population of the Eden Area. Policy P1 would support this Goal by highly encouraging the County, to the extent feasible, to strive for a standard of between 0.5 and 0.6 square feet of library space per capita in the Eden Area. Policy P2 would also encourage the County to continue to support the upgrading and expansion of the Alameda County Library System services in the Eden Area, including the San Lorenzo Library Replacement Project, in order to keep pace with community needs and changes in information technology.

Furthermore, Policy P3 would highly encourage that library funding remain adequate to sustain existing service levels and, where possible, increase service levels.

As library buildings are expanded or new buildings constructed, the potential environmental impacts would be evaluated on a project specific basis. Given this, the implementation of the General Plan would not contribute to a significant environmental impact with regards to library services.

4. Cumulative Impacts

If nearby projects made use of Eden Area library services to a point where their established square footage to population ratio would be diminished, a significant cumulative impact would result. Currently, the Eden Area has enough collective library space to service the population and developmental growth under the General Plan. As a result, no significant cumulative impacts are anticipated.

5. Impacts and Mitigation Measures

The policies and guidelines listed above are meant to accommodate a growing population within the Eden Area. As growth occurs, library facilities are expected to increase and improve based on the aforementioned policies. These policies are considered sufficient mitigation to address any potential library-related impacts over the life of the General Plan.

Since no impact were identified, no mitigation measures are required.

E. Parks and Recreational Facilities

This section describes current conditions and potential impacts of the proposed project with regard to local parks and recreational facilities.

1. Regulatory Setting

a. Local Regulations

i. Park Dedication Ordinance [Ordinance 2004-81 §1 (part)]

Alameda County's Park Dedication Ordinance, establishes an in-lieu fee/land dedication requirement for residential development in unincorporated areas. Though the ordinance applies to the entire unincorporated county area, fees or land dedications must be used for facilities which can reasonably be expected to serve the assessed development. Land or money can only be used for local or community park and/or recreation facilities for acquisition and improvements but not for maintenance, operations, or administrative costs. The in-lieu fee/land dedication requirement is not intended to bring the area up to a predetermined park acreage-to-population standard, but rather to maintain the existing level of service. Alameda County based its in-lieu fee/land dedication requirement on a level of service of 5 acres of land per 1,000 persons.[35]

ii. Resources, Open Space and Agriculture Plan (ROSA)

The ROSA is being prepared in order to update existing General Plan elements, incorporate the policies and programs of recent area plans, and to include new policies and programs that identify important open space goals within the County which were not previously addressed in earlier documents. Alameda County is updating the ROSA plan and is expected to be completed in the near future. The following elements will be updated and incorporated into the ROSA plan:

- Resource Conservation Element, last updated in 1994
- Open Space Element, last updated in 1973 amended 1994
- Park and Recreation Element, last updated in 1968
- Scenic Route Element, last updated in 1966 amended 1994

[35] Alameda County's website. http://www.co.alameda.ca.us/admin/admincode/Alameda_County_General_Ordinance_Code/Title_12/20/index.html, accessed on January 26, 2005.

The updated ROSA plan will examine the issue of agricultural resources, which have never been formally addressed in a County General Plan Element. The ROSA plan will also be consistent with the policies from the East County Area Plan.

2. Existing Conditions

Parks and recreational opportunities in the Eden Area are provided primarily by the Hayward Area Recreation & Park District and the East Bay Regional Park District. In addition, the Bay Trail offers Eden Area residents with trail opportunities. Each of these is described below.

a. Hayward Area Recreation & Park District[36]

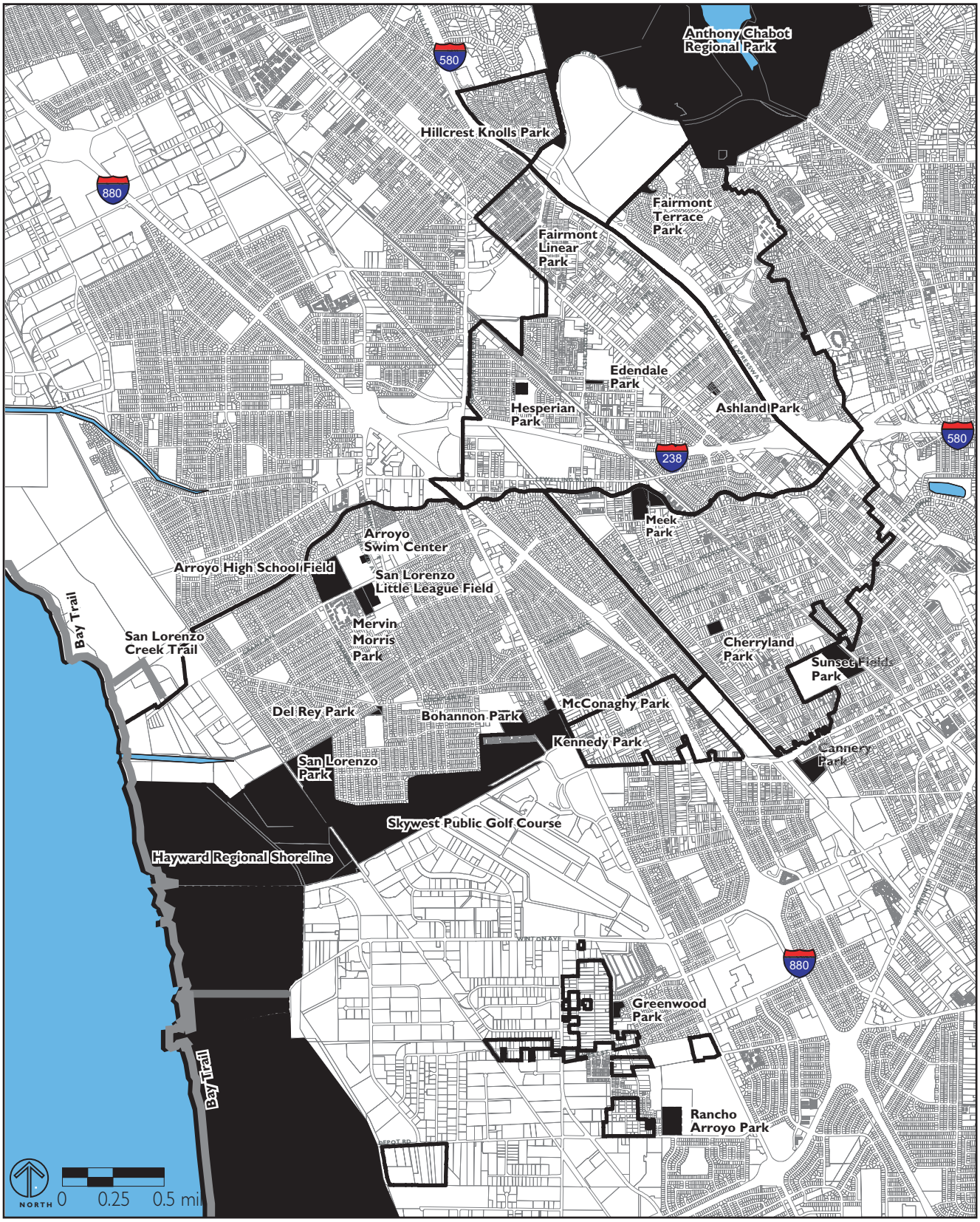
The Hayward Area Recreation & Park District (HARD) is an independent special use district providing park and recreation services for over 250,000 residents living within a 64-square-mile area that includes the City of Hayward and the unincorporated communities of Castro Valley, San Lorenzo, Ashland, Cherryland and Fairview.[37] HARD operates and maintains 14 recreational facilities inside the Eden Area, almost all of which contain some type of open lawn area with picnic tables and/or play area. The locations, acreages and amenities of recreational facilities in the Eden Area are shown in Figure 4.2-2 and Table 4.2-5.

HARD categorizes parks into three types, which are described briefly below:

- **Local Parks**
  - **Definition** – Small- to medium-sized parks that provide basic recreational activities for one or more neighbor-hoods. Typical neighborhood park facilities may be included as a portion of a larger community park.

[36] Review of and comments for this section were provided by Larry Lepore, Interim Parks Superintendent, HARD, February 2, 2005.

[37] Hayward Area Recreation and Parks District's website, http://hard.dst.ca.us/index.html, accessed on January 26, 2005.



Sources: Hayward Area Recreational Park District Master Plan, East Bay Regional Park District Master Plan, and Alameda County Community Development Agency.

FIGURE 4.2-2

Planning Area Boundary

Parks and Open Space

RECREATIONAL FACILITIES IN THE EDEN AREA

COUNTY OF ALAMEDA

EDEN AREA DRAFT GENERAL PLAN EIR

TABLE 4.2-5 **EDEN AREA HARD RECREATION FACILITIES**

Facility	Sub-Area	Acres[a,c]	Amenities[b]
Arroyo High School	San Lorenzo	1.0	swim center, open lawn area, P, R
Bohannon School	San Lorenzo	2.7	ball fields, soccer fields, open lawn area
Ashland Park	Ashland	1.2	picnic tables, BBQs, play area, community center building, meeting rooms, open lawn area , P, R
Cherryland Park	Cherryland	4.0	picnic tables, BBQs, play area, basketball courts, horseshoe courts, open lawn area, skate area, P, R
Del Rey Park	San Lorenzo	3.0	picnic tables, BBQs, play area, open lawn area, P
Edendale Park	Ashland	1.0	play area, open lawn area
Fairmont Linear Park	Ashland	1.2	picnic tables, BBQs, play area, open lawn area, P
Fairmont Terrace Park	El Portal Ridge	1.7	picnic tables, play area, basketball courts, open lawn area; to be expanded to 3+ acres
Hesperian Park	Ashland	0.8	play area, open lawn area
Hillcrest Knolls Park	Hillcrest Knolls	0.5	picnic area, play area to be expanded to 1.5 acres
McConaghy Park	San Lorenzo	3.1	picnic tables, BBQs, tennis courts, horse-shoe courts, open lawn area, historical building, P, R[d]
Meek Park	Cherryland	9.8	picnic tables, group picnic area, BBQs, play area, open lawn area, historical building, P, R
Mervin Morris Park	San Lorenzo	4.7	picnic tables, BBQs, play area, tennis courts, open lawn area, skate area, P, R
San Lorenzo Park	San Lorenzo	31	picnic tables, barbecues, play area, hik-ing/riding trails, ball fields, basketball courts, soccer fields, community center building, snack bar, meeting rooms, open lawn area, par course, lagoon, P, R

Notes: P = parking lot R = restrooms

[a] Personal communication with Eric Willyerd, HARD, February 12 and 26, 2003.

[b] HARD Facilities Directory (http://hard.dst.ca.us/fac_directory.html, accessed on Jan. 27, 2005)

[c] The acreages in this table reflect only the open space that HARD maintains. Acreages of school-maintained open space are not accounted for.

[d] Restrooms are located at Kennedy Park, which is next door.

- **Service Area –** ½ to ¾ mile radius
- **Size –** Typically 3 to 10 acres
- All but one of the parks in the Eden Area fall in this category.

♦ **Community Parks**
- **Definition –** Large parks that include a mix of passive and active recreation areas that serve the entire Eden Area or a large portion of the Eden Area. A community park should include, but not be limited to, the facilities that are typically found at neighborhood and mini-parks.
- **Service Area –** Minimum 2-mile radius
- **Size –** Generally 15 - 20 acres
- San Lorenzo Park is the only park in the Eden Area that falls under this category.

♦ **Regional Parks**

Definition – A large park that serves the open space and recreation needs for all users of the Eden Area and the Planning Area. Regional parks primarily contain natural open spaces and passive recreation areas but may also contain some amount of active recreational facilities.
- **Service Area –** Entire Area
- **Size –** Greater than 100 acres
- There are no HARD-operated regional parks in the Eden Area.

HARD maintains parks adjacent to a number of school facilities in the Eden Area, at locations including:

♦ Arroyo High School (1 acre)
♦ Bohannon Elementary School (2 acres)
♦ Edendale Elementary School (1.1 acre)
♦ Hesperian Elementary School (.8 acre)

At the school facilities, HARD maintains the portion of the school yard that is designated for public use. Each respective school, under the direction of the San Lorenzo Unified School District (SLZUSD), maintains the portions of the school yard not maintained by HARD, and these areas are open to the public for use during non-school hours, with the permission of SLZUSD.

Some individuals or organizations may be charged a fee for usage depending on the proposed use of the facilities.

Additionally there are recreational spaces at Colonial Acres School in Cherryland, which contains a play area and open lawn area, and San Lorenzo High School which contains ball fields and soccer fields. These areas are also maintained by the school district.

HARD is currently updating its Recreation and Parks Master Plan, which is scheduled to be finalized by sometime in the summer of 2006. Within the revised Master Plan, HARD is proposing a combined standard park-to-population ratio of 5 acres per 1,000 population (excluding regional parkland and open space trails and linear parks).[38]

b. East Bay Regional Park District (EBRPD)

The Eden Area is also served by two regional parks operated by EBRPD: Hayward Regional Shoreline Park, and Anthony Chabot Regional Park and Lake Chabot. A portion of both of these parks fall within the Eden Area's planning boundaries. Both of these parks provide various recreational, interpretive, natural and scenic opportunities. Such activities included fishing, boat rentals, picnic areas and multi-use trails.

The 1997 Master Plan for the EBRPD system does not include plans for additional regional open space in the Eden Area. However, a 3-acre portion of the San Francisco Bay shoreline, located in the Eden Area, and owned by the Oro Loma Sanitary District, is being considered by the County as a potential opportunity site for an additional park resource should it become available for purchase. It is a unique recreational opportunity that could be enhanced by improved connections to the Eden Area.

[38] Amphion, March 2006, *Hayward Area Recreation and Park District: Recreation & Parks Master Plan*, page 105, Hayward. (http://www.hard.dst.ca.us/index.html) pdf file.

c. The Bay Trail

The Bay Trail is a planned recreational corridor that, when complete, will encircle San Francisco and San Pablo bays with a continuous 400-mile network of bicycling and hiking trails. It will connect the shoreline of all nine Bay Area counties, link 47 cities, and cross the major toll bridges in the region.

In the Eden Area, the Bay Trail runs along the undeveloped western edge of the Grant Avenue Industrial Area immediately adjacent to San Francisco Bay. A trail head and parking lot are located near the western terminus of Grant Avenue. This trail head is a spur trail that connects to the larger Bay Trail. To the south of the Eden Area the bay trail connects to the Hayward Regional Shoreline.[39]

The approach to the trail runs along a circuitous route that uses portions of a Pacific, Gas & Electric access road and a fire road to meet up with the maintained trail on the north side of the San Lorenzo Creek channel. There are currently no plans to improve the connection.[40]

d. Existing Parks to Population Ratio

Recreational opportunities are often measured in terms of the combined standard of park-to-population. In the Eden Area there are 67 acres of parkland, including the Hayward Regional Shoreline and excluding the Anthony Chabot Regional Park and the school maintained recreational areas. The population of the Eden Area as of 2004 was estimated at 59,858 people. Thus, the parks-to-population ratio in the Eden Area is 0.89 acres per 1,000 residents. By comparison, the parks-to-population ratio in Hayward is 2.5 acres per 1,000 residents; in San Leandro it is 2.6 acres per 1,000 residents.[41]

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[39] Bay Trail's website, Association of Bay Area Governments. http://baytrail.abag.ca.gov/overview.html, March 21, 2006.

[40] Bay Trail's website, Association of Bay Area Governments. http://baytrail.abag.ca.gov/overview.html, March 21, 2006.

[41] These ratios were calculated based on the populations and park acreages published in each city's general plan. For Hayward, the park-to-population ratio is

3. Standards of Significance

The proposed project would have a significant impact to parks and recreational resources if it would:

- Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.
- Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

4. Impact Discussion

Population growth projections under the proposed General Plan would potentially increase demand for parks and recreational areas within the Eden Area. The population is expected to increase by approximately 16,560 under the proposed General Plan. This increase in population could result in the deterioration of existing facilities or in a need for additional parks.

To accommodate future growth under the proposed General Plan, based on the Alameda County's policy of 5 acres of parkland for every 1,000 people, the Eden Area would need a minimum of 82.8 new acres of parkland available for public use. That is a 124 percent increase from current parkland acres available. While it will be difficult to meet the minimum standard for parkland acres, especially in built out areas such as the Eden Area, these standards form an essential function in implementing the HARD Master Plan. These established standards and formulas are critical for determining development exactions, per the County's Park Dedication Park Dedication Ordinance mentioned above, and ensuring that there is a strong nexus, or relationship, to a project's impacts. The Ordinance requires payment of fees or dedicated parkland to offset increase in park needs by new development. Potential im-

taken from *City of Hayward General Policies Plan*, April 1995. For San Leandro the data was taken from *Public Review Draft San Leandro General Plan*, November 2001.

pacts associated with construction and operation of parks and recreation facilities in the future would be addressed through project-specific CEQA review.

The proposed General Plan includes a number of goals, policies and actions to ensure that the Area's parkland goals are met and existing facilities are not negatively impacted by future growth. Goal PR-1 would seek to improve the quality of life in the Eden Area through the maintenance and improvement of parks and recreation facilities. Policy P4 under this Goal would require the County, with collaboration with HARD, to strive to achieve a combined park acreage-to-population ratio of 5 acres per 1,000 population for local and community parks in the Eden Area. Also supporting this Goal is Policy P5, which would require the County, with collaboration with HARD, to strive to locate a park within a half mile walking distance of every Eden Area resident.

There are various policies and actions supporting the effort to develop new parks and recreational facilities in the Eden Area to meet existing deficiencies (Goal PR-2). Policy P4 of this Goal would require new development to pay an impact fee or dedicate parkland at 5 acres of parks per 1,000 people to offset the increase in park needs resulting from new residents to the greatest extent allowed by law. Strengthening this effort would be the requirement for in-lieu park fees to be maintained at levels that reflect true costs of land acquisition and park development costs (Policy P5 of this Goal). Being sensitive to property owners when increasing parks throughout the Eden Area, Policy P8 of this Goal would require that the needs and rights of property owners be respected to the greatest extent possible without restraining the rights of the County to acquire land as allowed by State and federal law. Furthermore, in regards to new investments in parks, the proposed plan would highly encourage new parks be focused on neighborhoods that are the least served in terms of park access and variety of recreational amenities (Policy P9 of this Goal) and be located in predominantly residential areas (Policy P10 of this Goal).

Goal PR-3 would pursue the joint use of public facilities for recreational purposes. Supporting this Goal is Policy P1, which would require the County, with collaboration with HARD, to promote joint use agreements with school districts and other public agencies to maximize public access to all public spaces and grounds during non-business or school hours. Additionally, the Policy P3 of this Goal would require the County to work with the school districts to implement design changes that allow school grounds to function as parks and recreational facilities.

Given these existing and proposed provisions, a less than significant impact in regard to parks and recreation facilities is anticipated from implementation of the Eden Area General Plan

5. Impacts and Mitigation Measures

Since no significant impacts related to parks and recreation facilities were identified as a result of the General Plan, no mitigation measures are required.

4.3 TRAFFIC AND CIRCULATION

This section presents information on existing traffic and circulation conditions in the Eden Area and describes potential environmental impacts the proposed General Plan would have on the circulation system, as well as the standards of significance by which they are evaluated.

A. Existing Setting

This section presents a brief description of the circulation system in the Eden Area and its current operations and regulatory setting.

1. Regulatory Setting

a. State

Interstate freeways and State Routes are under the jurisdiction of the California Department of Transportation (Caltrans). The Eden Area is located at the confluence of three Interstate freeways: Interstates 880 (I-800), I-580 and I-238. In addition, State Route 185 serves the Eden Area, operating as East 14th Street/Mission Boulevard.

b. Regional

The majority of Federal, State, and local financing available for transportation projects is allocated at the regional level by the Metropolitan Transportation Commission (MTC), the transportation planning, coordinating, and financing agency for the nine-county Bay Area. The current regional transportation plan, know as Transportation 2030, was adopted by MTC on February 23, 2005. Transportation 2030 specifies a detailed set of investments and strategies throughout the region from 2005 through 2030 to maintain, manage and improve the surface transportation system. The plan specifies how anticipated Federal, State, and local transportation funds will be spent in the Bay Area during the next 25 years. Most of this "committed funding" will go toward protecting the region's existing transportation infrastructure.

The Bay Area Air Quality Management District (BAAQMD) is the regional agency with the authority to develop and enforce regulations for the control

of air pollution throughout the Bay Area. The Clean Air Plan is BAAQMD's plan for reducing the emissions of air pollutants that lead to ozone. BAAQMD has also published CEQA Guidelines for the purpose of evaluating the air quality impact of projects and plans. One of the criteria that the Guidelines describe is that plans, including General Plans, must demonstrate reasonable efforts to implement transportation control measures included in the Clean Air Plan that identify local governments as the implementing agencies. On-road motor vehicles are the largest source of air pollution in the Bay Area. To address the impact of vehicles, the California Clean Air Act requires air districts to adopt, implement, and enforce transportation control measures.

The Alameda County Congestion Management Agency (CMA) has a *Congestion Management Program* (CMP) that includes a Capital Improvements Program aimed at maintaining or improving the operation of the multimodal transportation system and requires development projects to contribute towards transportation impact mitigation. The CMP includes operating standards for key roads and freeways in the Eden Area: Foothill Boulevard, Center Street, "A" Street, Hesperian Boulevard, I-880, I-580 and I-238.

The County does not set LOS standards for freeways, the CMA does, which has general standards for designated CMA facilities throughout the County, including freeways. The Alameda CMA is not a County agency but an independent agency created between the County and all its citizens.

Regional transit agencies providing service to the Eden Area include AC Transit, the San Francisco Bay Area Rapid Transit District (BART) and Amtrak.

c. Local

Streets within the Eden Area are generally under the jurisdiction of Alameda County, except for State Routes that are under Caltrans' jurisdiction. *Public Works Design Guidelines* for streets in the Eden Area establish standards for

the width of streets and sidewalks. The 1983 *Eden Area (portion) General Plan* contains broad overall goals and specific recommendations for facilitating traffic circulation, maintaining an acceptable level of service (LOS) on major roadways, improving transit service and enhancing bicycle and pedestrian circulation. The City of Hayward has jurisdiction over streets surrounding Mount Eden.

A number of local planning efforts guiding or potentially affecting the Plan Area have been implemented within the Eden Area. A summary of the key planning efforts pertaining to transportation are discussed below:

- The *Eden Area Redevelopment Plan* contains a variety of transportation projects that could be undertaken by the County Redevelopment Agency, including the widening of key streets and the installation of curbs, sidewalks, gutters, streetscape improvements and traffic calming devices. Improvements to benefit alternative modes of transportation envisioned by the Redevelopment Plan include improved bus shelters, bicycle racks and trails, enhanced railroad crossings, wider sidewalks, and accessibility improvements such as wheelchair ramps.
- The *Countywide Bicycle Plan* and the *Alameda County Master Plan Update for Western Unincorporated Areas* includes recommendations for improving bicycle connections in the Eden Area. The Countywide Plan includes recommendations for developing regional bicycle routes on Foothill Boulevard and the northern portion of East 14th Street, while the Western Unincorporated Areas Plan proposes bicycle paths along San Lorenzo Creek and the BART right-of-way, as well as proposed bicycle lanes on Mission/East 14th, Hesperian Boulevard, Lewelling Boulevard, and Meekland Avenue. However, the more recent corridor plans for Mission/East 14th and Lewelling do not include bicycle lanes.
- The *Alameda County Neighborhood Traffic Calming Program* outlines a process for neighborhood input into requesting the installation of traffic calming devices on local and minor collector streets, and describes typical traffic calming measures including striping, streetscape improvements

such as street trees or enhanced pedestrian crossings, bulb-outs, speed humps, roundabouts and partial or full roadway closures.

- The *East 14th/Mission Boulevard Master Plan* includes recommendations for reducing blight and improving pedestrian circulation along the corridor. Extensive streetscape enhancements including undergrounding of utilities, a raised median, street trees, new street lighting and pedestrian improvements including sidewalk extensions at intersections (bulb-outs) to reduce pedestrian crossing distances are envisioned. Bicycle lanes are not included in the proposed corridor plan; instead, a signed "bicycle route" geared towards bicycle commuters is proposed.

- The *Lewelling Boulevard Improvement Project* plans to widen the street and make improvements to sidewalks. Currently, Lewelling Boulevard has limited facilities for pedestrians or bicyclists, is not landscaped, and has higher than normal accident rates. Phase I of the project (between Hesperian Boulevard and Meekland Avenue) is envisioned to include four travel lanes, provide a center median/two-way turn lane and 10-foot wide sidewalks. Bicycle lanes would not be provided. Phase II (between Meekland Avenue and Mission Boulevard) would provide two travel lanes, plus a two-way center turn-lane, on-street parking and 5-foot sidewalks. Street trees would be provided in both phases either within or behind the sidewalks.

- The *Hesperian Corridor Streetscape Master Plan* develops a vision for revitalizing the Hesperian corridor and achieving an inviting streetscape for pedestrians, residents and merchants. Key goals include improved pedestrian and bicycle circulation and increased use of public transit. Streetscape improvements and traffic calming measures will be provided where possible. Proposed improvements include narrower travel lanes, wider sidewalks, bicycle lanes, street trees and raised medians. Key parking areas would be retained.

- The *San Lorenzo Village Specific Plan* contains recommendations for enhancing the economic viability of the historic core of San Lorenzo as a "main street" environment, including pedestrian and streetscape improvements.

2. Roadway System

The Alameda County roadway classification system consists of arterial, collector and local street designations. Additionally, several freeways travel through the Eden Area. Figure 4.3-1 shows the road system within the Eden Area. Descriptions of the freeways, arterial and collector streets are provided below, along with a discussion of key issues pertaining to local streets.

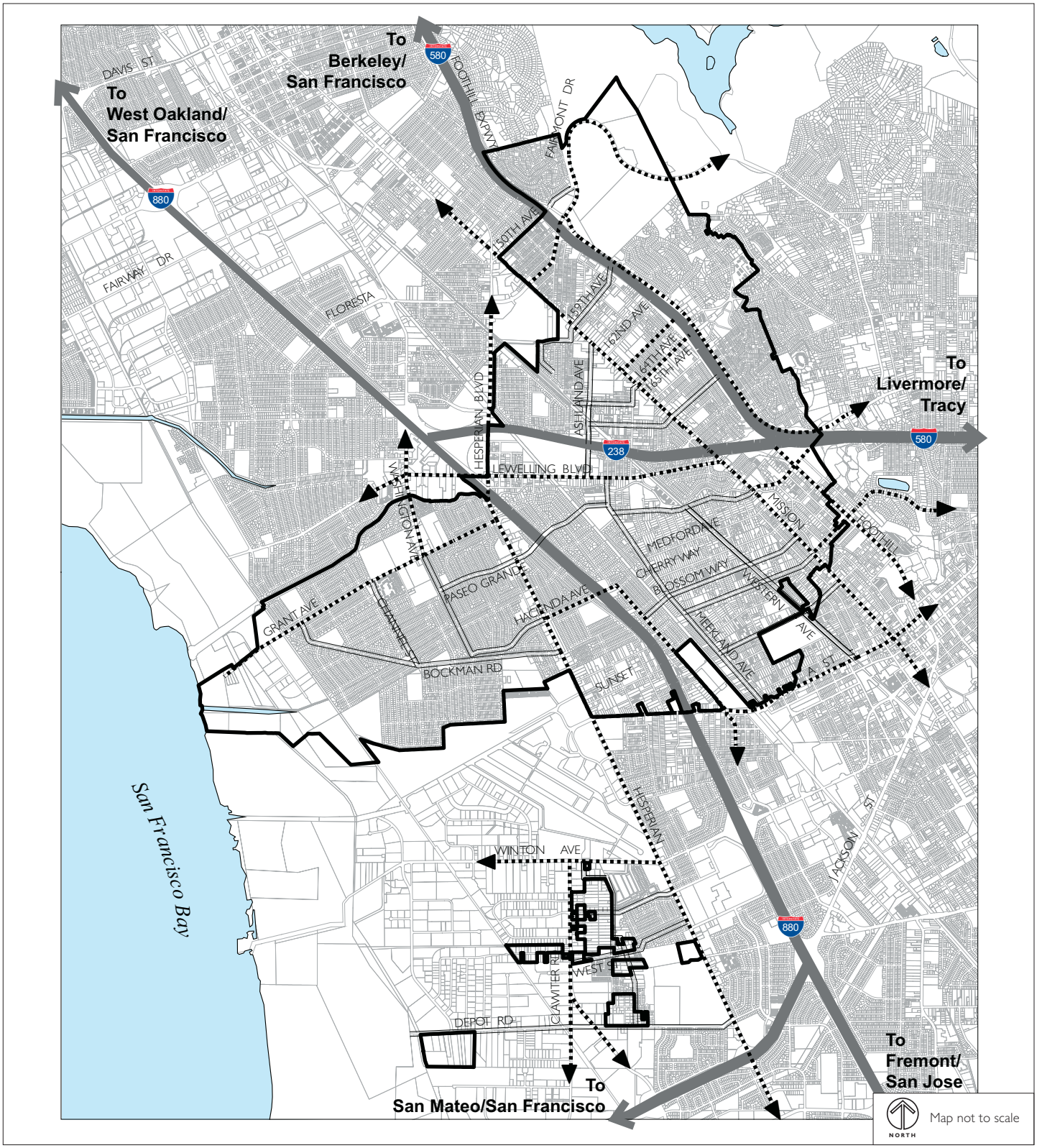
a. Freeways

Freeways are high-speed, high-capacity transportation facilities serving regional and countywide travel. These limited access facilities provide for relatively long trips between major land use generators. The Eden Area is located at the confluence of three regional freeways:

- *I-880* is a ten-lane freeway within the Eden Area running north and south between the San Francisco-Oakland Bay Bridge and San Jose. The freeway passes through San Lorenzo and Hayward Acres in the Eden Area. There is a high volume of truck traffic on I-880, in part due to truck restrictions on a segment of I-580 in Oakland.
- *I-580* is an 8- to 10-lane freeway that runs west and east from U.S. 101 in San Rafael traveling through the Eden Area in Ashland, before turning east to Castro Valley, Livermore and I-5 in the Central Valley. Truck traffic is prohibited on a segment of I-580 in Oakland.
- *I-238* is a four-lane freeway that connects I-580 and I-880. Due to restrictions on truck travel on I-580 in Oakland, I-238 carries a relatively high proportion of truck traffic. Caltrans is planning to widen I-238 from 4 to 6 lanes, with additional capacity for eight lanes in the future. This project is expected to reduce future traffic growth on Lewelling Boulevard.

b. Arterial Streets

Arterials are relatively high speed/high capacity roads that provide access to regional transportation facilities and serve relatively long trips, or medium speed/medium capacity roads for intra-community travel as well as access to the rest of the countywide arterial system. On-street parking and direct ac-



Source: Fehr & Peers, May 2006

Freeway

Arterial

Collector

Study Area Boundary

FIGURE 4.3-1

ROADWAY INTERSECTIONS

cess to properties may be limited. *Alameda County Public Works Design Guidelines* require a minimum curb-to-curb street width of 44 feet for a two-lane arterial (additional lanes are 12 feet wide each) with an 8-foot sidewalk adjacent to the curb (although sidewalk width and location vary). A separated bicycle lane is provided where feasible. The main arterial streets that serve the Eden Area are:

- ***East 14th Street/Mission Boulevard*** (State Route 185) is a four-lane road that travels north and south through Ashland and Cherryland and operates as a parallel route to I-880. It is one of the primary commercial and transit corridors in the Eden Area. Bus service is provided by AC Transit.
- ***Hesperian Boulevard*** is six-lane road divided by a landscaped median that runs north-south through the San Lorenzo sub-area. AC Transit bus service is provided. Hesperian Boulevard is designated by Caltrans as a reliever route to accommodate additional traffic when I-880 is extremely congested. It is one of the primary commercial corridors in the Eden Area.
- ***Lewelling Boulevard*** is a 2- to 4-lane road between the railroad right-of-way, near the San Francisco Bay, and State Route 185 (East 14th Street). Limited bus service is provided. The corridor alternates between commercial and residential uses.
- ***Grant Avenue*** is a 2- to 4-lane road running west from Hesperian Boulevard to a its terminus in the Grant Avenue Industrial Area. AC Transit bus service is provided on a limited segment of Grant Avenue. Grant Avenue provides truck access to existing industrial facilities, along with residential access from the adjacent residences. The western portion of Grant Avenue is striped with bicycle lanes that connect with the San Francisco Bay Trail, while the eastern portion, closest to Hesperian Boulevard, is off-limits to trucks over 5 tons.
- ***Washington Avenue*** is a four-lane road that runs north from Grant Avenue and provides a connection with the southwest section of the City of San Leandro.

- ***A' Street*** is a four-lane, east-west road running east from Hesperian Boulevard on the southern border of the Eden Area between Haywood Acres and the City of Hayward. AC Transit bus service is provided and bicycle lanes are provided. 'A' Street has a mix of small-scale commercial and residential uses. A proposed extension of "A" Street by the City of Hayward would provide an extension to the industrial area near the Hayward Airport.
- ***Grove Way*** is a two-lane, east-west road running east from Meekland Avenue to Castro Valley. Bus service is not provided on Grove Way within the Eden Area. Grove Way is lined with residential uses.
- ***Foothill Expressway*** has 2 to 4 lanes and travels north-south parallel to I-580. AC Transit bus service is provided. The corridor has a mix of commercial and residential uses.
- ***Fairmont Drive*** is a four-lane road that runs east from I-580 through the Fairmont sub-area into Castro Valley. AC Transit bus service is provided. Fairmont Drive has limited access points and borders public uses on one side and residential uses on the other.

c. Collector Streets

Collectors are generally two lane streets with lower volumes than arterials and provide for circulation within and between neighborhoods. The minimum curb-to-curb width is 42 feet for a two-lane collector, with an 8-foot sidewalk immediately adjacent to the curb (although sidewalk width and location vary). Separated bicycle lanes are included where feasible. These roads serve relatively short trips and are meant to collect vehicles from local streets and distribute them to the arterial network. The key collector streets serving the Eden Area are:

- Bockman Road
- Via Alamitos
- Ashland Avenue
- Meekland Avenue
- Western Avenue
- Hampton Avenue
- Blossom Way
- Sunset Boulevard
- Middle Lane
- Depot Road
- Dunn Road
- Eden Avenue
- Saklan Road
- 150th Avenue

d. Local Streets

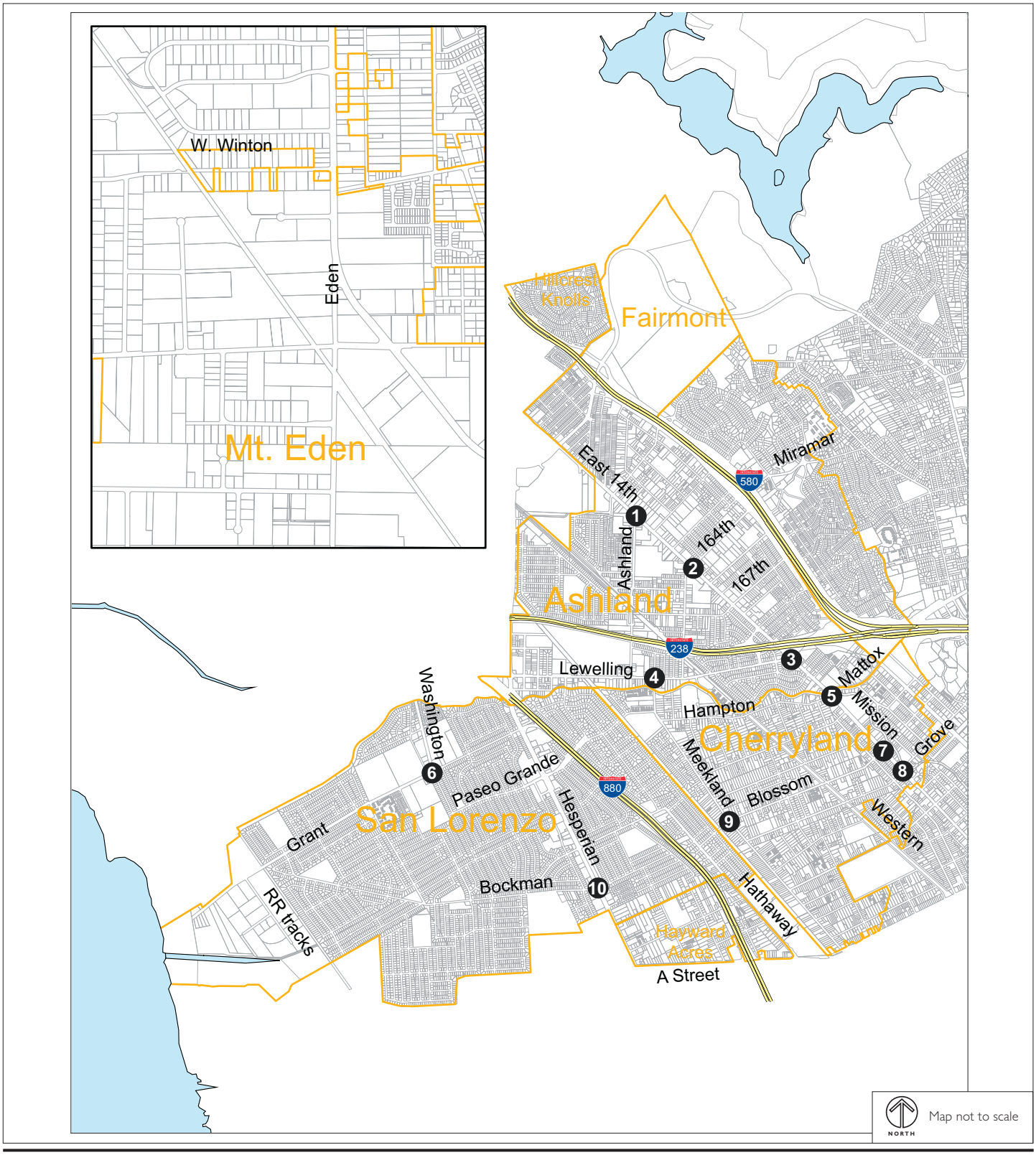
Local streets provide access to individual properties, primarily residences and businesses, and connect to the County's network of arterial and collector streets. *Alameda County Public Works Design Guidelines* require a minimum curb-to-curb width of 40 feet for a minor residential street, with a 5-foot sidewalk immediately adjacent to the curb. There are many streets in the Eden Area that do not conform to the current standards since they were built prior to their adoption. Additionally, there are many local street segments that have not yet been completed with full street widths, curbs, gutters or sidewalks.

Barriers to travel on local streets in the Eden Area include the freeways, railroad lines and San Lorenzo Creek. These barriers result in increased traffic volumes on roadways that cross these barriers, limit the mobility of pedestrians and bicyclists, and result in "cut-through" traffic problems on some local streets as motorists attempt to reach routes that cross these barriers.

3. Study Intersections

For the purposes of evaluating the land use changes, transportation improvements and other policy directives that will ultimately result from the *Eden Area General Plan* (Proposed General Plan), ten study intersections were identified by County of Alameda staff, as shown on Figure 4.3-2. These locations were analyzed to determine the impact of proposed land use changes envisioned by the Proposed General Plan. The ten study intersections are:

1. East 14th Street/Ashland Avenue
2. East 14th Street/164th Avenue
3. Mission Boulevard/Lewelling Boulevard
4. Meekland Avenue/Lewelling Boulevard
5. Mission Boulevard/Hampton/Maddox
6. Grant Avenue/Washington Avenue/ Via Alamitos
7. Mission Boulevard/Blossom Way
8. Mission Boulevard/Grove Way
9. Meekland Avenue/Blossom Way
10. Hesperian Boulevard/Bockman



Source: Fehr & Peers, May 2006

1 Study Intersections

Neighborhood Boundary

FIGURE 4.3-2

STUDY INTERSECTIONS

a. Level of Service Criteria

The concept of "Level of Service" (LOS) is used to characterize how well the roadway network operates for motor vehicles. LOS is a standard measure of the quality of traffic flow. Letter grades are used, ranging from A (best) to F (worst). LOS is determined by assessing the magnitude of traffic flow on a roadway and the ability of that facility to handle the traffic flow.

i. Freeways

Freeway segments are analyzed using volume-to-capacity (V/C) ratios. The capacities of the study freeway facilities were obtained from the *Highway Capacity Manual* (HCM). According to the HCM, for a freeway segment with minimum 12-foot travel lane widths, 6-foot shoulder widths, 2-foot median lateral clearance, a traffic stream composed entirely of passenger cars, interchange spacing greater than 2 miles, level terrain, and a driver population composed principally of regular users, the ideal freeway capacity is 2,400 vehicles per hour per lane. However, given the large percentage of heavy vehicles, including trucks, buses, and recreational vehicles, on freeways within the study area, the capacity of 2,000 vehicles per hour per lane was selected as an appropriate freeway capacity per lane through the Eden Area. This volume is commonly used to estimate freeway capacity. Table 4.3-1 summarizes the relationship between V/C and LOS for freeway segments.

The Alameda CMA considers LOS F to represent unacceptable conditions.

ii. Intersections

Like other roadway facilities, intersections are evaluated using a LOS system. For this EIR and for preparation of the Proposed General Plan, this evaluation is based on methodologies provided in the 2000 Highway Capacity Manual. The 2000 *Highway Capacity Manual* utilizes a methodology that assesses the average control delay at intersections. The LOS ranges for signalized intersections is provided below in Table 4.3-2.

TABLE 4.3-1 **LEVEL OF SERVICE CRITERIA FOR FREEWAYS**

Level of Service	Traffic Conditions	Upper V/C Threshold
A	Little or no congestion	0.60
B	Small amount of traffic congestion	0.70
C	Average traffic congestion	0.80
D	high traffic congestion	0.90
E	Very high traffic congestion	1.00
F	Oversaturated, stop-and-go conditions	> 1.00

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

Unsignalized intersections are analyzed using a similar methodology. Please note that delay is calculated for movements that operate under traffic control. Therefore the delay at side-street stop controlled intersections reflects only the delay accruing to vehicles that are stopping at the stop sign. The LOS ranges for the unsignalized intersections are shown in Table 4.3-3.

4. Existing Traffic Conditions

The following provides a summary of the existing traffic conditions for freeway segments and study intersections.

a. Freeway Volumes and LOS

As noted above, there are three major freeways that serve the Eden General Plan area; I-238, I-580, and I-880. I-238, an east-west freeway that primarily serves as a connector between I-880, to the west, and I-580, to the east, consists of two mixed-flow travel lanes in each direction with intermittent auxiliary lanes. I-580 is an east-west freeway with four mixed-flow travel lanes in each direction between US 101 in San Rafael, to the west, and I-5 in Tracy, to the east. I-880 is a north-south freeway that extends between I-80 in Emery-

TABLE 4.3-2 **SIGNALIZED INTERSECTION LOS CRITERIA**

Level of Service	Description	Average Control Delay (seconds)
A	Operations with very low delay occurring with favorable progression and/or short cycle length.	< 10.0
B	Operations with low delay occurring with good progression and/or short cycle lengths.	> 10.0 to 20.0
C	Operations with average delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures begin to appear.	> 20.0 to 35.0
D	Operations with longer delays due to a combination of unfavorable progression, long cycle lengths 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	Operation with delays unacceptable to most drivers occurring due to over saturation, poor progression, or very long cycle lengths.	> 80.0

Note: V/C = volume/capacity
Source: *Highway Capacity Manual*, Transportation Research Board, 2000.

ville/Oakland, to the north, and I-280 in San Jose, to the south. I-880 has a varying cross-section, which consists of four mixed-flow lanes and one HOV (2+) lane in each direction within the Eden General Plan area. All three of the freeways have a posted speed of 65 miles per hour (mph).

Existing PM traffic volumes were obtained from Caltrans' published freeway volumes for year 2004. Using the peak-hour volumes obtained from Caltrans and theoretical freeway peak-hour capacities (2,000 vehicles per hour per lane), the V/C ratio for each segment was calculated by dividing the actual traffic volumes by the theoretical capacity. This ratio was used to calculate the segment LOS.

TABLE 4.3-3 **UNSIGNALIZED INTERSECTION LOS CRITERIA**

Level of Service	Description	Average Control Per Vehicle (seconds)
A	Little or no delays	< 10.0
B	Short traffic delays	> 10.0 to 15.0
C	Average traffic delays	> 15.0 to 25.0
D	Long traffic delays	> 25.0 to 35.0
E	Very long traffic delays	> 35.0 to 50.0
F	Extreme traffic delays with intersection capacity exceeded	> 50.0

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

The existing conditions freeway volumes, as well as the theoretical capacity of each segment, the resulting V/C ratio, and the resulting LOS are depicted in Table 4.3-4. As shown, southbound I-880 traffic experiences oversaturated stop-and-go conditions throughout the Eden General Plan area during the PM peak hour, while the northbound traffic experiences acceptable levels of traffic congestion. Users of eastbound and westhbound I-580 currently face high traffic congestion in the PM peak hour, but traffic is not heavy enough to present breakdown conditions. Users of I-238, however, experience breakdown conditions in the northbound direction (approaching I-880 from I-580) during the PM peak hour.

b. Intersection Volumes and LOS

Existing AM and PM peak hour traffic volumes for each study intersection are shown on Figure 4.3-3. Existing LOS is shown in Table 4.3-5. The County's current level of service standard is to maintain LOS D or better during peak hours at intersections. At intersections located on Alameda Congestion Management Program (CMP) routes (East 14th/Mission and Hesperian Boulevard), the standard is to maintain LOS E or better.

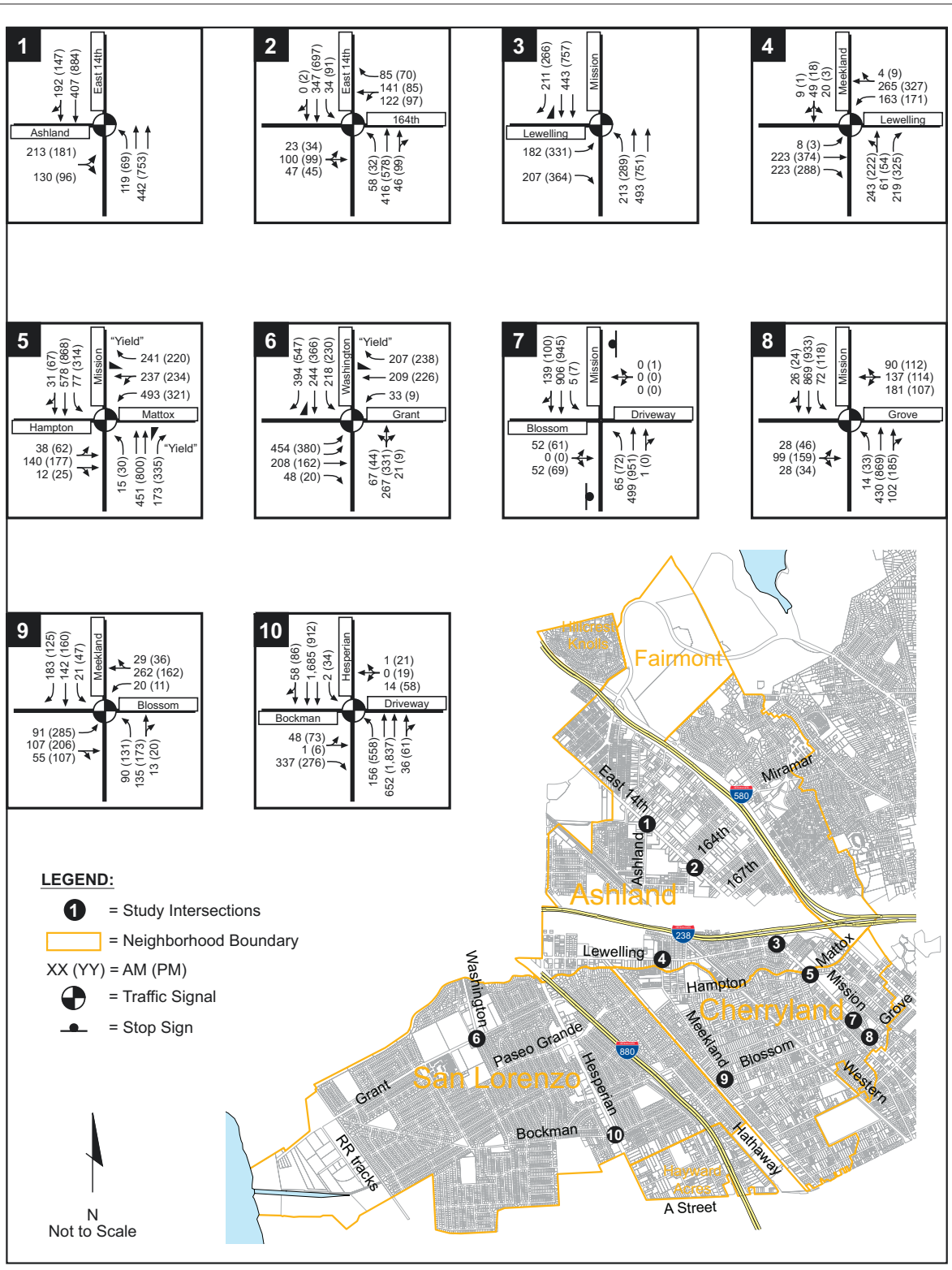
TABLE 4.3-4 **FREEWAY PM PEAK-HOUR V/C RATIO AND EXISTING LOS**

Freeway Segment	Direction	Lanes[a]	Existing Volume[b]	Theoretical Capacity[c]	V/C	LOS
I-880, north of Washington Avenue	NB	4.5	7,700	9,000	0.86	D
	SB	**4.5**	**9,400**	**9,000**	**1.04**	**F**
I-880, north of A Street	NB	4.5	7,900	9,000	0.88	D
	SB	**4.5**	**9,600**	**9,000**	**1.07**	**F**
I-880, south of A Street	NB	4.5	7,800	9,000	0.87	D
	SB	**4.5**	**9,900**	**9,000**	**1.10**	**F**
I-580, north of Fairmont Drive	EB	4	7,000	8,000	0.88	D
	WB	4	6,400	8,000	0.80	D
I-580, east of I-238	EB	4	6,400	8,000	0.80	D
	WB	4	6,400	8,000	0.80	D
I-238, east of Hesperian Boulevard	**NB (WB)**	**2**	**4,200**	**4,000**	**1.05**	**F**
	SB (EB)	2.5	3,800	5,000	0.76	C

Note: **Bold** indicates failing conditions (LOS F) based on CMP standards.
[a] 0.5 lane = Auxiliary or HOV lane
[b] *Caltrans Traffic Volumes on California State Highways*, 2004.
[c] Assumes freeway capacity of 2,000 vehicles per hour per lane.
Source: Fehr & Peers, April 2006.

The majority of study intersections operate acceptably during both the AM and PM peak hours, with the exception of two intersections that operate unacceptably during the PM peak hour:

- Washington/Grant/Via Alamitos is the only signalized study intersection to operate unacceptably. Delay at this intersection is increased by the off-set approaches in both the north-south and east-west directions that requires split-phase signal operation (separate signal phases for each direction of travel) that is less efficient than typical signal phasing.



Source: Fehr & Peers, May 2006

FIGURE 4.3-3

EXISTING LANE CONFIGURATIONS, TRAFFIC CONTROL AND PEAK HOUR TRAFFIC VOLUMES

TABLE 4.3-5 **INTERSECTION LEVEL OF SERVICE - EXISTING CONDITIONS**

Intersection	Control	LOS[a]/Delay (Seconds/Vehicle)[b] Existing Conditions	
		AM Peak Hour	PM Peak Hour
1. East 14th/Ashland	Signal	B/18.9	B/18.5
2. East 14th/164th	Signal	B/16.4	B/16.3
3. Mission/Lewelling	Signal	B/11.4	B/18.9
4. Meekland/Lewelling	Signal	C/26.2	C/26.6
5. Mission/Hampton/Maddox	Signal	C/23.2	D/35.2
6. Washington/Grant/Via Alamitos	Signal	D/44.8	**E/75.7**
7. Mission/Blossom	Side-street stop	C/18.9	**F/>50.0**
8. Mission/Grove	Signal	C/33.6	D/42.1
9. Meekland/Blossom	Signal	C/20.1	C/23.6
10. Hesperian/Bockman	Signal	C/29.5	C/31.0

Note: **Bold** indicates unacceptable peak hour intersection operations (LOS E on non-CMP routes; LOS F on CMP routes).
[a] LOS = Level of Service.
[b] Delay in seconds calculated using the 2000 *Highway Capacity Manual*. Worst approach reported for side-street stop-controlled intersections.
Source: Fehr & Peers, 2006.

- Mission Boulevard /Blossom Way is a side-street stop-controlled intersection that experiences unacceptable delay to stop-controlled vehicles (approaching the intersection on Blossom Way) during the PM peak hour. Based on existing volumes, it appears likely that signalization is warranted.

5. Bicycle System

Bicycle access in the Eden Area is characterized by a general lack of bikeways in most areas. Bicycle facilities are classified according to a typology established by Caltrans as documented in "Chapter 1000: Bikeway Planning and Design" of the *Highway Design Manual* (5th Edition, California Department of Transportation, January 2001). The Caltrans standards provide for three distinct types of bikeway facilities, as generally described below:

- **Class I Bikeway (Multi-Use Trail)** provides a completely separate right-of-way and is designated for the exclusive use of bicycles and pedestrians with vehicle and pedestrian cross-flow minimized.
- **Class II Bikeway (Bike Lane)** provides a restricted right-of-way and is designated for the use of bicycles with a striped lane on a street or highway. Vehicle parking and vehicle/pedestrian cross-flow are permitted.
- **Class III Bikeway (Bike Route)** provides for a right-of-way designated by signs or pavement markings for shared use with pedestrians or motor vehicles.

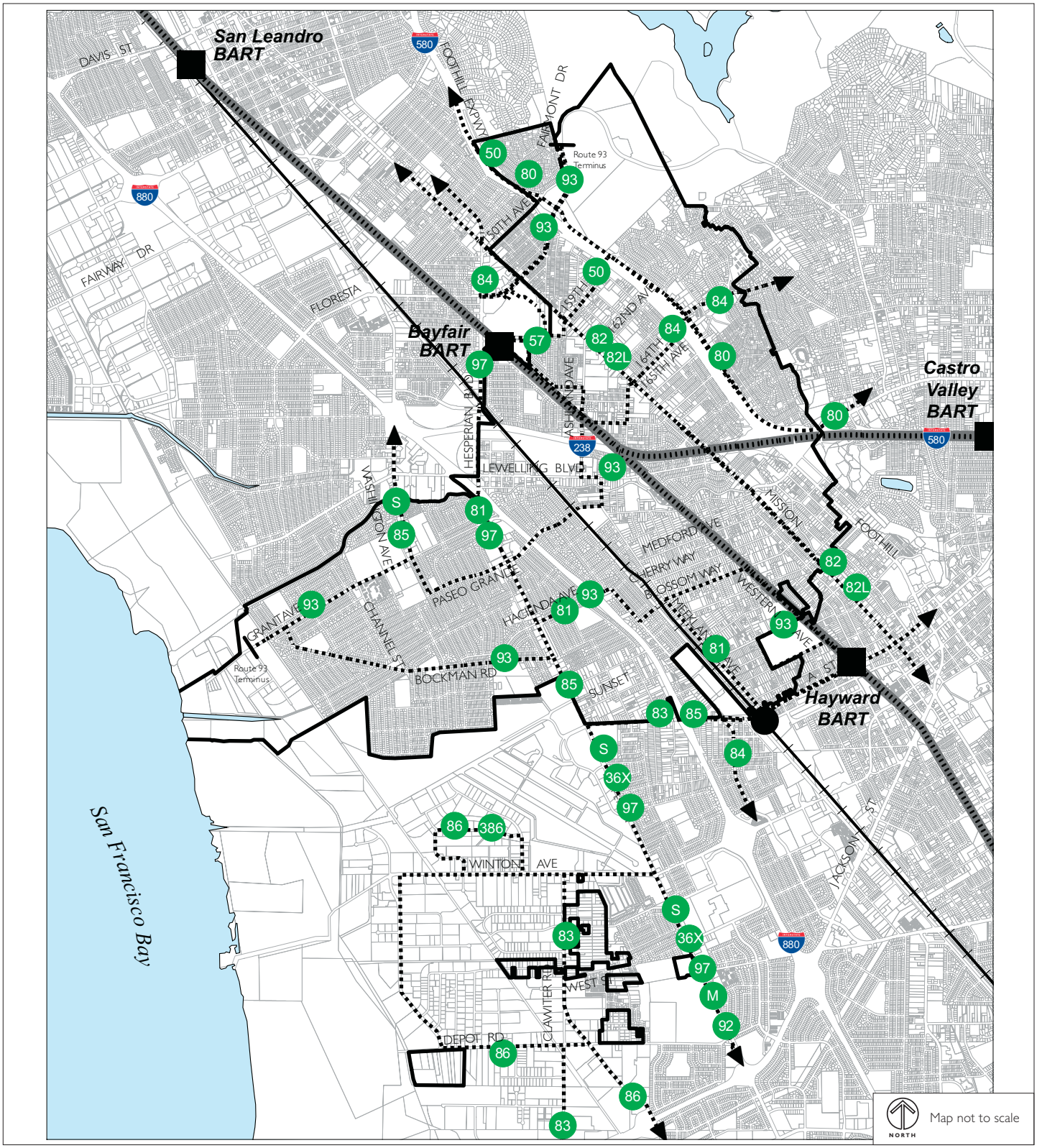
The existing bikeway network in the Eden Area consists of the following:

- Class II bicycle lanes on Grant Avenue (west of Washington Avenue/Via Alamitos) that connect with the Class I San Francisco Bay Trail.
- Class II bicycle lanes on "A" Street.
- Class III bicycle route on Washington Avenue (north of Grant).
- Class III bicycle route on Hesperian Boulevard (north of "A" Street) that connects with Class II bicycle lanes on the portion of Hesperian Boulevard that is within the City of San Leandro.

6. Public Transit System

The transit lines that provide service to the Eden Area are shown on Figure 4.3-4. The transit providers are described below:

- **AC Transit**. AC Transit operates a network of bus lines serving the Eden Area that provide connections within the Eden Area, to and from



Source: Fehr & Peers, May 2006

- BART Station
- Capitol Corridor Station
- 35 Bus Route Number
- AC Transit Bus Line
- BART Line
- Amtrak Capitol Corridor Line
- Study Area

FIGURE 4.3-4

EXISTING TRANSIT FACILITIES

- the BART stations described below, and to adjacent cities. Future improvements to bus service in the Eden Area include a planned bus route on Lewelling Boulevard and a proposed "enhanced bus corridor" on Hesperian Boulevard.
- **San Francisco Bay Area Rapid Transit (BART).** BART provides relatively frequent heavy-rail rapid transit service between East Bay cities, San Francisco and the San Francisco International Airport, with headways between trains generally less than 10 minutes on weekdays and 20 minutes during evening and weekend hours. There are three BART stations bordering the Eden Area: Bayfair Station, Hayward Station and Castro Valley. Approximately 4,900 people ride BART daily from Bayfair Station on a typical weekday, while another 4,400 ride from Hayward Station.
- **Amtrak Capitol Corridor.** The Capitol Corridor train service between San Jose and Sacramento includes a stop in Hayward at the southern border of the Eden Area.

Despite the transit network, there are issues regarding frequency of service and convenience of the routes, which prevent the Eden Area from being well-served by transit.

7. Pedestrian System

The pedestrian environment plays a key role in determining the overall livability and general characteristics of any community. A challenging pedestrian environment characterizes much of the Eden Area. Key issues include:
Absence of curbs, gutters and sidewalks on many local streets, especially in Mt. Eden, Ashland and Cherryland.

- Lengthy crossing distances, many unsignalized pedestrian crossings and numerous vehicle crossings (such as driveways) on arterial streets such as Hesperian Boulevard, "A" Street and East 14th/Mission Boulevard.
- Rolled (not vertical) curbs have been installed on many local streets and on some arterial streets such as Grant Avenue. Motorists tend to park on

the sidewalk when rolled curbs are provided, partially obstructing the pedestrian pathway.

- Freeways and railroad lines act as barriers to pedestrian movement in parts of San Lorenzo, Ashland and Cherryland.
- Speeding and cut-though traffic in some areas may create conflicts with pedestrian travel.
- Mixed street widths due to sequential development after many years.
- A desire for improvements to school-related pedestrian circulation improvements.

In general, the relatively low-density development pattern in the Eden Area (in comparison with higher density areas such as San Francisco, Oakland or Berkeley) tends to be oriented towards automobile travel at the expense of other modes, such as walking or transit. In recent years, redevelopment funds and other funding sources have been identified for pedestrian improvements in key areas, such as along the East 14th/Mission Boulevard corridor and Lewelling Boulevard.

B. Standards of Significance

This section describes the criteria used to determine whether potential transportation impacts will be significant or not. The Eden Area General Plan would create a significant traffic and circulation impact if it would:

- Cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system (i.e. result in a substantial increase in either the number of vehicle trips, the V/C ratio for freeways, or congestion at intersections).
- Exceed, either individually or cumulatively, a level of service (LOS) standard established by the Congestion Management Agency or County of Alameda for designated roads or highways.
- 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.

- Substantially increase hazards due to a design feature (i.e. sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment).
- Result in inadequate emergency access.
- Result in inadequate parking capacity.
- Conflict with adopted policies, plans, or programs supporting alternative transportation.

The above general significance criteria are interpreted as follows in evaluating the proposed General Plan:

1. Freeway Impacts

The Alameda County CMP identifies LOS E or better as acceptable for CMP facilities such as freeways. Based on this standard, significant traffic impacts on freeway segments in the Eden Area are identified if the proposed General Plan causes:

- The volume on a freeway segment to exceed its capacity (cause LOS E or better to deteriorate to LOS F).
- An increase in the amount of traffic on a freeway segment already exceeding its capacity by more than one percent of the freeway segment's design capacity.

2. Intersection Impacts

The County's current level of service standard is to maintain LOS D or better, while the Alameda County CMP identifies LOS E or better as acceptable for CMP facilities including Hesperian Boulevard and East 14th Street/Mission Boulevard. Based on this standard, traffic impacts are identified as significant if the proposed General Plan would cause:

- Operations (LOS) at a signalized intersection to deteriorate from an acceptable level under existing conditions to an unacceptable level;
- For non-CMP signalized intersections that operate unacceptably at LOS E under existing conditions, the LOS to deteriorate to LOS F;

- For signalized intersections operating at LOS F without the project, any additional vehicle trips to the intersection;
- For unsignalized intersections operating acceptably under existing conditions, the LOS to deteriorate to unacceptable conditions and the traffic volumes at the intersection would satisfy the Caltrans peak-hour volume warrant criteria for traffic signal installation; or
- For unsignalized intersections operating at unacceptable levels under existing conditions, average delay to increase by five or more seconds and the traffic volumes at the intersection would satisfy the Caltrans peak-hour volume warrant criteria for traffic signal installation.

3. Bicycle Impacts

A bicycle impact is considered significant if it would:

- Disrupt existing bicycle facilities;
- Interfere with planned bicycle facilities;
- Conflict or create inconsistencies with adopted bicycle system plans, guidelines, policies or standards; or
- Not provide secure and safe bicycle parking in adequate proportion to anticipated demand.

4. Pedestrian Impacts

A pedestrian impact is considered significant if it would:

- Disrupt existing pedestrian facilities;
- Interfere with planned pedestrian facilities; or
- Create inconsistencies with adopted pedestrian system plans, guidelines, policies or standards.

5. Transit Impacts

A transit impact is considered significant if it would:

- Result in a significant unanticipated increase in transit patronage, which would overburden transit providers;
- Be inaccessible to transit riders (defined as within ¼ mile of a transit stop);
- Disrupt existing transit service; or
- Interfere with planned transit facilities.

C. Impact Discussion

This section describes future (year 2025) transportation conditions with adoption and implementation of the proposed General Plan.

a. Forecasting Methodology

Land use data for development anticipated by the year 2025 under the proposed General Plan was developed by the County of Alameda based on growth projections for the Eden Area. Four categories of development (single-family residential, multi-family residential, commercial and industrial) were summarized, with peak hour trip generation forecasts developed based on trip generation rates developed by the Institute of Transportation Engineers (ITE). Based on this data, development under the proposed General Plan is forecasted to generate 5,484 AM peak hour trips and 8,465 PM peak hour trips in the year 2025.

To predict the distribution of traffic resulting from the land uses envisioned by the proposed General Plan (i.e. the routes that most motorists will follow to and from specific development areas and to/from major regional destinations outside of the Eden Area), a traffic model was created using TRAFFIX software to track the distribution and assignment on the Eden Area's arterial and collector roadways and study intersections. Trip distribution information was derived from the Alameda County Congestion Management Au-

thority (ACCMA) Countywide Travel Demand Forecasting Model. The Countywide Model is a regional travel demand model that uses socio-economic data and roadway and transit network assumptions to forecast traffic volumes using a four-step modeling process that includes trip generation, trip distribution, mode split, and trip assignment.

In addition to trips resulting from development under the proposed General Plan, the growth in background traffic on regional cut-through routes was incorporated into the traffic model. A 20 percent (i.e. approximately 1 percent per year) growth in background traffic volumes is assumed on Hesperian Boulevard and East 14th/Mission Boulevard, given their role as regional routes.

For the purposes of the freeway segment analysis, traffic generated by the proposed General Plan was added to the existing freeway segment volumes along with the projected background growth between the 2005 and 2025 ACCMA models to develop a forecast of 2025 freeway volumes.

b. Freeway Operations (Year 2025)

Table 4.3-6 compares the existing and future traffic volumes, V/C ratios and the resulting LOS on selected freeway segments within the Eden General Plan area. All future roadway segments are assumed to have the same number of lanes as existing, except for I-238, which is scheduled to have an additional lane in both directions, scheduled for completion in 2010. As shown in the table, the freeway segments in the Eden General Plan Area currently operate at or near capacity and would receive additional traffic with the addition of background growth and the proposed General Plan land uses and background traffic growth forecasted by the Countywide Model.

Although traffic would increase on I-238 due to project and background traffic, the V/C ratio would reduce due to the addition of one travel lane in each direction, as planned by Caltrans, resulting in I-238 to operate at an acceptable LOS. Most segments of I-580 and I-880 will operate at unacceptable LOS

TABLE 4.3-6 **FREEWAY PM PEAK-HOUR V/C RATIO AND LOS SUMMARY - YEAR 2025 WITH PROPOSED GENERAL PLAN**

		Existing Conditions					Year 2025 with Proposed General Plan				
Freeway Segment	Direction	Lanes[a]	Volume[b]	Theoretical Capacity[c]	V/C	LOS	Lanes[a]	Volume[b]	Theoretical Capacity[c]	V/C	LOS
I-880, north of Washington Avenue	NB	4.5	7,700	9,000	0.86	D	4.5	8,753	9,000	0.97	E
	SB	4.5	9,400	9,000	1.04	F	4.5	10,095	9,000	1.12	F
I-880, north of A Street	NB	4.5	7,900	9,000	0.88	D	4.5	9,598	9,000	1.07	F
	SB	4.5	9,600	9,000	1.07	F	4.5	10,157	9,000	1.13	F
I-880, south of A Street	NB	4.5	7,800	9,000	0.87	D	4.5	9,403	9,000	1.04	F
	SB	4.5	9,900	9,000	1.10	F	4.5	10,864	9,000	1.21	F
I-580, north of Fairmont Drive	EB	4	7,000	8,000	0.88	D	4	8,926	8,000	1.12	F
	WB	4	6,400	8,000	0.80	D	4	8,355	8,000	1.04	F
I-580, east of I-238	EB	4	6,400	8,000	0.80	D	4	7,447	8,000	0.93	E
	WB	4	6,400	8,000	0.80	D	4	7,076	8,000	0.88	D
I-238, east of Hesperian Boulevard	NB (WB)	2	4,200	4,000	1.05	F	3	4,597	6,000	0.77	C
	SB (EB)	2.5	3,800	5,000	0.76	C	3.5	4,582	7,000	0.65	B

[a] 0.5 lane = Auxiliary or HOV lane
[b] *Caltrans Traffic Volumes on California State Highway*, 2004.
[c] Assumes freeway capacity of 2,000 vehicles per hour per lane.
Source: Fehr & Peers, May 2006.

F. Northbound segments of I-880 currently operate at LOS F and will continue to do so under year 2025 conditions. Southbound segments of I-880 and the segment of I-580 north of 150th Avenue will decline to LOS F, due to the expected background growth in traffic and the addition of project traffic resulting from the proposed General Plan. Trips generated by the proposed General Plan are forecasted to represent between 2 and 14 percent of the peak hour traffic on these segments in the year 2025, resulting in a significant impact to these freeway segments.

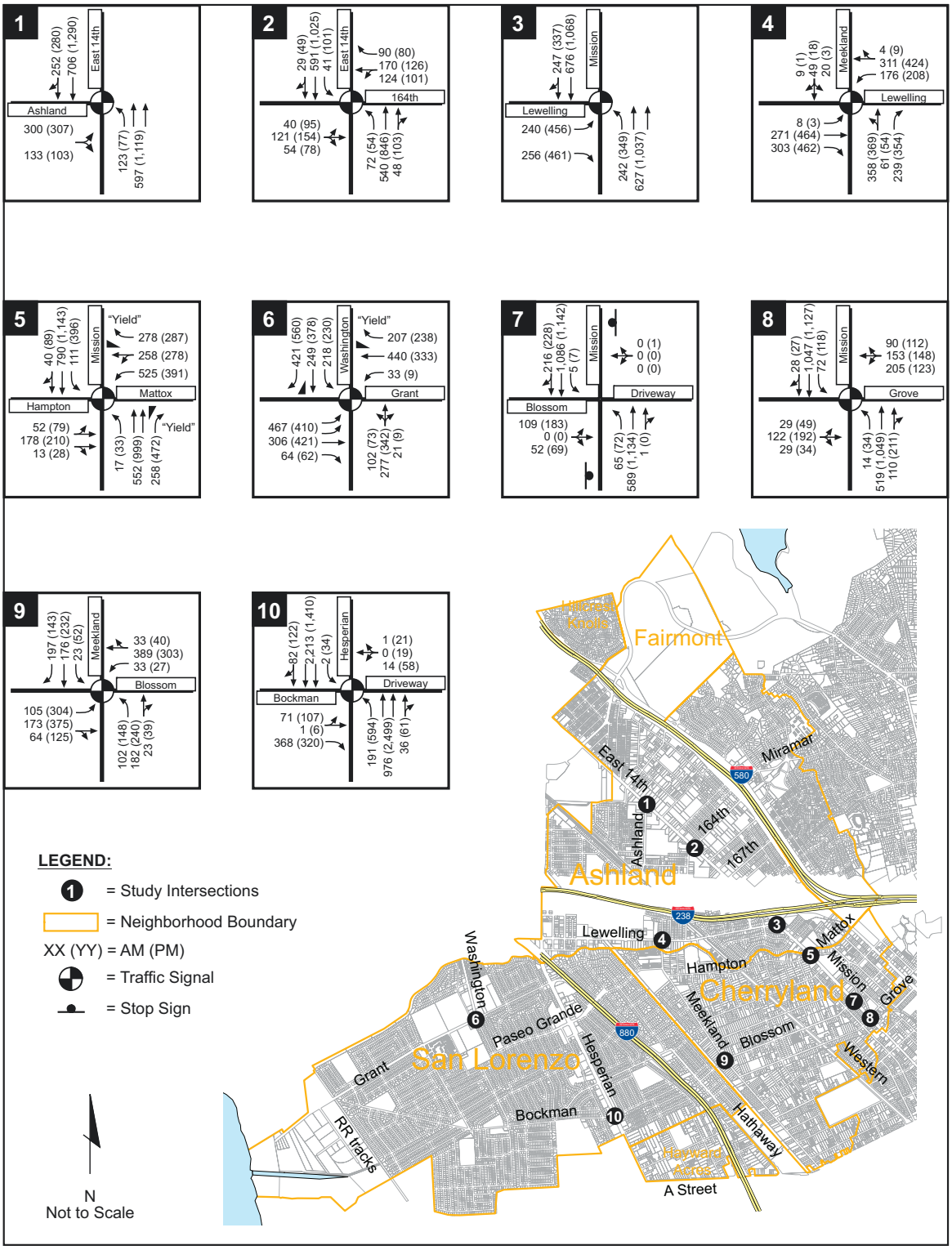
Based on the analysis of freeway segments in the Eden Area for Year 2025 Conditions with the Proposed General Plan:

- Impacts to I-238 are less than significant.
- Impacts to the I-880 and I-580 freeways are *significant*.

c. Intersection Operation (Year 2025)

Figure 4.3-5 shows the forecasted traffic volumes at each study intersection in the Year 2025 with the Proposed General Plan. Figure 4.3-7 shows the resulting LOS and provides a comparison with existing conditions at each study intersection. As shown on Table 4.3-7, LOS at eight of the 10 study intersections will continue to be acceptable in the year 2025 under the proposed General Plan. The Grant/Washington/Via Alamitos and Mission/Blossom intersections operate at an unacceptable LOS during the PM peak hour under Existing Conditions, and delay will worsen at both intersections under Year 2025 Conditions with the proposed General Plan:

- Delay at the signalized Grant/Washington/Via Alamitos intersection will cause LOS to decline from LOS E to F during the PM peak hour. This impact is *significant*.
- Delay at the side-street stop-controlled Mission/Blossom intersection will increase by more than five seconds. This impact is *significant*.



Source: Fehr & Peers, May 2006

FIGURE 4.3-5

FUTURE (YEAR 2025) PEAK HOUR TRAFFIC VOLUMES WITH PROPOSED GENERAL PLAN

TABLE 4.3-7 **FUTURE (YEAR 2025) INTERSECTION LOS WITH PROPOSED GENERAL PLAN**

		LOS[a]/Delay (Seconds/Vehicle)[b]		LOS[a]/Delay (Seconds/Vehicle)[b]	
		Existing Conditions		Year 2025 with Proposed General Plan	
Intersection	Control	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
East 14th/Ashland	Signal	B/18.9	B/18.5	D/37.2	C/31.1
East 14th/164th	Signal	B/16.4	B/16.3	B/17.6	C/21.9
Mission/Lewelling	Signal	B/11.4	B/18.9	B/12.4	C/28.8
Meekland/Lewelling	Signal	C/26.2	C/26.6	C/26.5	C/34.0
Mission/Hampton/ Maddox	Signal	C/23.2	D/35.2	C/24.4	D/53.9
Washington/Grant	Signal	D/44.8	**E/75.7**	D/51.3	**F/>80.0**
Mission/Blossom	Side-street stop	C/18.9	**F/>50.0**	D/28.7	**F/>50.0**
Mission/Grove	Signal	C/33.6	D/42.1	C/34.6	D/52.7
Meekland/Blossom	Signal	C/20.1	C/23.6	C/22.5	C/28.8
Hesperian/Bockman	Signal	C/29.5	C/31.0	B/28.7	C/33.1

Note: **Bold** indicates unacceptable operations.
[a] LOS = Level of Service
[b] Delay in seconds calculated using the 2000 *Highway Capacity Manual*. Worst approach reported for side-street stop-controlled intersection.
Source: Fehr & Peers, 2006.

The proposed General Plan includes goals and policies intended to ensure that future land use and transportation decisions are in balance with the capacity of the transportation system, and to provide for efficient motor vehicle circulation. In order to achieve this, an emphasis is placed on facilitating travel by multiple travel modes to provide additional transportation choices and lessen the potential burden on motor vehicle facilities. The proposed General Plan Circulation Element recommends the following actions to be undertaken by the County to enhance multi-modal circulation:

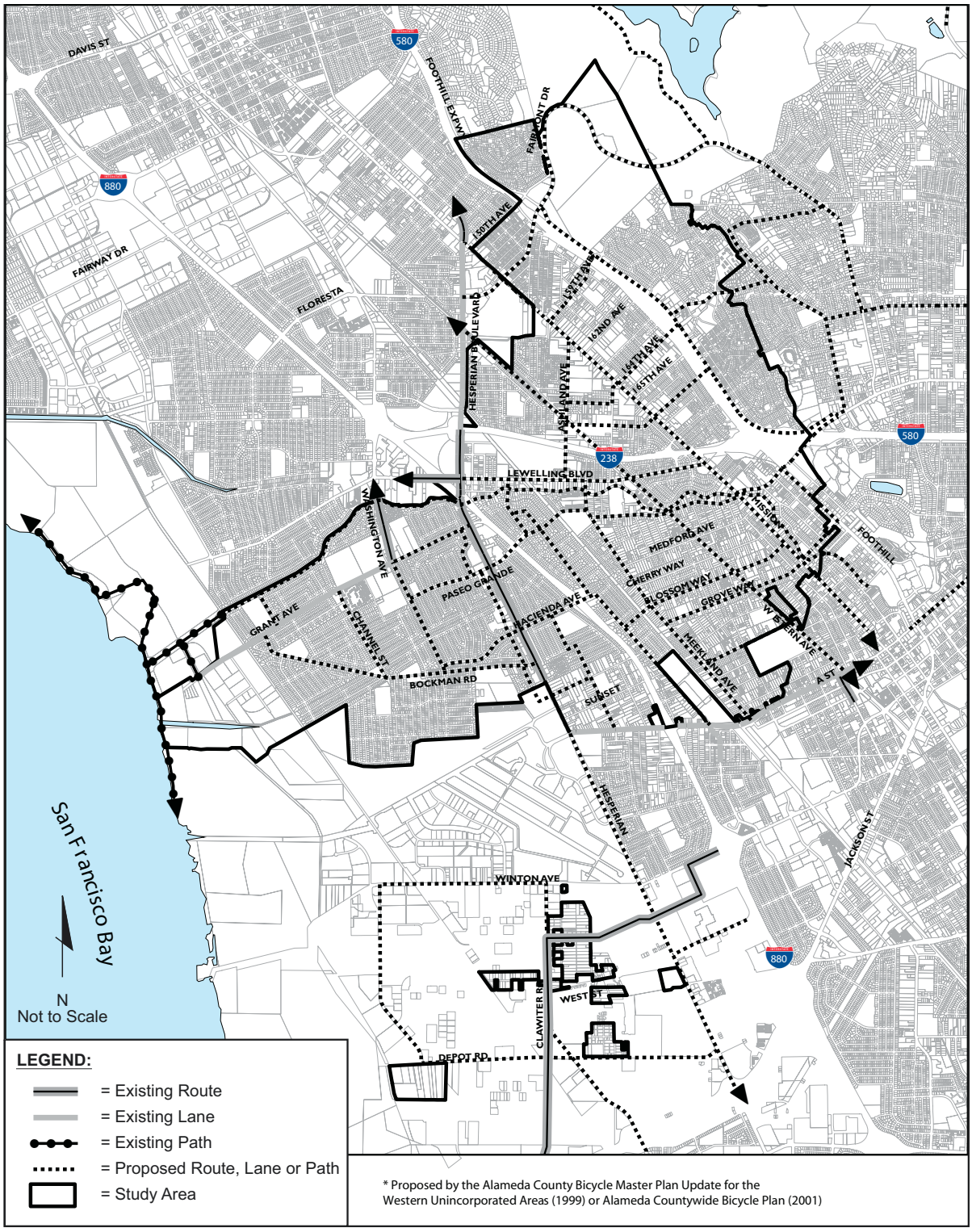
- Review and revise capital improvement programs to prioritize multi-modal projects that accommodate anticipated growth.
- Review and revise the County's impact fees to ensure they adequately address street improvement costs and that new development pays a fair share of infrastructure costs.
- Develop a local TDM program to identify target reductions in automobile travel and desirable mode splits, and require TDM measures for new large-scale development.
- Update the functional street classifications and *Public Works Street Design* standards for the Eden Area.
- Work with Bay Area RIDES to coordinate and promote rideshare efforts, such as for County employees and other large employers in the Eden Area.
- Pursue funding and implementation of the East 14th/Mission Boulevard Master Plan, the Lewelling Boulevard Improvement Project, the Hesperian Corridor Streetscape Master Plan, and the San Lorenzo Village Master Plan, and consider revising these plans to include additional facilities for bicyclists.
- Ensure that projects implemented as part of the Neighborhood Traffic Calming Program maintain street connectivity and appropriate emergency vehicle access.
- Review and update the truck route designations contained in the County's Truck Restriction Ordinance.

- Review existing enforcement mechanisms to restrict the use of non-designated facilities by trucks, and develop strategies to increase enforcement if needed.

d. Bicycle System

The proposed General Plan would not disrupt or interfere with existing or planned bicycle facilities and would not create conflicts or inconsistencies with adopted bicycle system plans. Figure 4.3-6 shows the existing and proposed bikeway network in the Eden Area. The proposed General Plan Circulation Element recommends the following actions to be undertaken by the County to enhance bicycle circulation:

- Update the *Bicycle Master Plan for the Western Unincorporated Areas* and adopt as part of the General Plan for the Eden Area.
- Adopt a bicycle parking ordinance as part of the Zoning Ordinance.
- Work with BART and the Union Pacific Railroad to determine the feasibility of constructing a bicycle path within the BART right-of-way.
- Provide dedicated staff within the Alameda County Public Works Department to plan and promote projects to enhance bicycle and pedestrian improvements.
- Pursue outside sources of funding for bicycle and pedestrian projects.
- Implement the bicycle facilities called for by the *Countywide Bicycle Plan* and the *Alameda County Bicycle Master Plan for Western Unincorporated Areas.* The Countywide Plan includes recommendations for developing regional bicycle routes on Foothill Boulevard and the northern portion of East 14th Street, while the Western Unincorporated Areas Plan proposes bicycle paths along San Lorenzo Creek and the BART right-of-way, as well as proposed bicycle lanes on Mission/East 14th, Hesperian Boulevard, Lewelling Boulevard, and Meekland Avenue. Consider revisions to those plans as needed to conform to more recent planning efforts on key corridors including Mission/East 14th and Lewelling Boulevard, which have not included bicycle lanes.



Source: Fehr & Peers, May 2006

FIGURE 4.3-6

EXISTING AND PROPOSED BICYCLE NETWORK

- Improve east-west bikeway connections, particularly across the major north-south barriers, such as I-880, I-580 and the railroad tracks. Additionally, study the feasibility of the proposed bicycle path along San Lorenzo Creek.
- Implement recommended north-south regional routes, including the proposed Foothill Boulevard route that would connect with the Bancroft Avenue bicycle lanes in San Leandro and a bikeway within or parallel to the BART corridor that would connect with similar facilities envisioned in San Leandro, Oakland and Berkeley.
- Develop bicycle routes that provide connections between residential neighborhoods, BART stations, commercial districts, schools and parks within or immediately adjacent to the Eden Area.
- Require the provision of bicycle parking as part of the development review process and seek funding for the provision of sidewalk bicycle racks in existing commercial areas.

Implementation of the action items described above would result in substantially improvements to bicycle circulation and bicycle parking in the Eden Area. Bicycle impacts are *less than significant*.

e. Transit System

The proposed General Plan is not anticipated to disrupt existing or planned transit service or result in a significant unanticipated increase in transit patronage. Furthermore, a key goal of the proposed General Plan is to focus a significant portion of future land development in corridors or districts that are accessible to transit, such as the East 14th/Mission corridor, San Lorenzo Village or Bay Fair BART Station. Impacts to transit are *less than significant*.

The proposed General Plan Circulation Element recommends the following transit-supportive actions to be undertaken by the County within the Eden Area:

- Support efforts by AC Transit to secure funding for enhanced bus service in the Eden Area, including increased frequency and duration of service on existing bus lines.
- Support efforts by BART to expand service to San Jose.
- Support efforts by the Amtrak Capitol Corridor to expand service and study additional station locations, including potential station locations in the Eden Area.
- Consider transit access as part of the County's development review process.

Within the Eden Area, AC Transit is planning to provide bus service to Lewelling Boulevard (via Route 81) and is considering the implementation of an "enhanced bus corridor" (that could include signal preemption, improved shelters, Next Bus technology and other measures to increase the speed and efficiency of bus service) on Hesperian Boulevard.

f. Pedestrian System

The proposed General Plan will not disrupt existing or planned pedestrian facilities or create inconsistencies with adopted pedestrian system plans, guidelines, policies or standards. Impacts to the pedestrian system are *less than significant*.

The proposed General Plan Circulation Element recommends the following actions to be undertaken by the County to improve the pedestrian circulation network within the Eden Area:

- Complete and regularly update the inventory of sidewalk deficiencies in the Eden Area.
- Complete and adopt the *Pedestrian Master Plan* for the Eden Area that includes priorities for sidewalk installation and identifies obstacles to Americans with Disabilities ACT (ADA) compliance.
- Develop an ADA transition plan for streets and sidewalks.

- Pursue funding for the construction of pedestrian improvements described in the East 14th/Mission Boulevard Master Plan, the Lewelling Boulevard Improvement Project, the Hesperian Corridor Streetscape Master Plan, and the San Lorenzo Village Master Plan.

D. Impacts and Mitigation Measures

Impact CIR-1: The growth under the proposed General Plan would contribute traffic to regional freeways (I-580 and I-880) that are currently operating unacceptably or are forecasted to operate unacceptably under year 2025 conditions with the addition of regional traffic and traffic generated by the proposed General Plan. Direct mitigation of the impact on these freeway segments is not feasible. Factors that limit the mitigation of impacts include constrained right-of-way, regional funding limitations, and the inherent difficulties with widening freeways, such as the need to widen over crossings and structures adjacent to the freeway. This would be a *significant and unavoidable* cumulative impact.

Impact CIR-2: The proposed General Plan would result in a decline in level of service (LOS) from LOS E to F at the signalized intersection of Grant/Washington/Via Alamitos during the PM peak hour. This intersection is located close to a school and experiences significant pedestrian volumes before and after school hours. This would be a *significant* impact.

Mitigation Measure CIR-2: The County should update its capital improvement program to include one of the following two improvement options at this intersection:

- Option A: Re-align the Grant/Washington/Via Alamitos intersection to allow east/west movements (on Grant Avenue) without split-phase operations. (Currently, east-bound and west-bound movements have separate signal phases.) The intersection would operate acceptably at LOS D with this improvement. Improving the intersection alignment would also be desirable to enhance pedestrian circulation.

- Option B: Add a second southbound (heading towards Via Alamitos) right-turn lane on Washington, approaching the Grant/Washington/ Via Alamitos intersection. The intersection would operate at LOS E with this mitigation, which would be an acceptable LOS for intersections located near schools based upon LOS criteria that would be adopted as part of the proposed General Plan. However, provision of a second southbound right-turn lane could result in undesirable crossing conditions for pedestrians.

With the improvement, the intersection would operate at acceptable levels of service in all peak study periods. However, the improvement is not included in the current capital improvement program and there is no funding programmed for the improvement. Until such time as the recommended measures are programmed. This impact would be considered *significant and unavoidable*.

Significance After Mitigation: *Significant and unavoidable.*

Impact CIR-3: The proposed General Plan would result in increased delay at the side-street stop-controlled Mission/Blossom intersection during the PM peak hour. This intersection currently operates at LOS F (indicating failing conditions) during the PM peak hour and delay would increase by more than five seconds with the Proposed General Plan. This would be a *significant* impact.

Mitigation Measure CIR-3: The County should update its capital improvement program to plan for signalization of the Mission/Blossom intersection. Following signalization, this intersection would operate acceptably at LOS D during the PM peak hour.

With the improvement, the intersection would operate at acceptable levels of service in the PM peak study period. However, the improvement is not included in the capital improvement program and there is no funding programmed for the improvement. Until such time as the recom-

mended measures are programmed. This impact would be considered significant and unavoidable.

Significance After Mitigation: *Significant and unavoidable.*

4.4 INFRASTRUCTURE

This chapter describes the existing water, wastewater, and solid waste infrastructure in the Eden Area and the potential environmental impacts from the proposed project on these services. Stormwater infrastructure and drainage is discussed in Chapter 4.9, Hydrology and Flooding.

A. Water

1. Existing Setting

Water is provided to the entire Eden Area, with the exception of Mt. Eden, by the East Bay Municipal Utility District (EBMUD).

a. East Bay Municipal Utility District

EBMUD's water system serves approximately 1.3 million people in a 325-square-mile area.[1] Figure 4.4-1 shows the water service area boundaries in the Eden Area. EBMUD has water rights for up to 325 million gallons per day (MGD) (997 acre-feet) from the Mokelumne River, which is from where almost all of EMBUD's water supply comes. In normal years, EBMUD reservoirs in the East Bay receive an additional 30,000 acre-feet (about 30 MGD) of water from local watershed runoff.[2]

In 2004, total water consumption in the District was 82,088 millions of gallons (224 MGD), up from 77,760 million gallons (213 MGD) in 2003. The number of accounts in 2004 was 378,251, up from 377,094 in 2003.[3] In fiscal year 2004, EBMUD's Water Conservation Program, coupled with water awareness education programs and new technology, saved 2.0 MGD of wa-

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[1] EBMUD, *All About EBMUD*, no date, page 1. (downloaded from http://www.ebmud.com/about_ebmud/publications/default.htm on February 22, 2005.

[2] EBMUD, *All About EBMUD*, no date, page 2. (downloaded from http://www.ebmud.com/about_ebmud/publications/default.htm on February 22, 2005)

[3] EBMUD, *Annual Report 2004*, 2004, page 14.

ter.[4] For the year 2020, the Water Supply Management Program, adopted by EBMUD in 1993, forecasts a District demand of 277 MGD without savings from water recycling or conservation and 229 MGD with successful water recycling and conservation programs in place.[5]

EBMUD's Mokelumne River supply is sufficient during normal or wet years, but falls short during droughts.[6] The Water Supply Management Program found that during severe droughts EBMUD would be unable to meet the need for water without imposing extreme rationing measures -- exceeding 25 percent. EBMUD has since been exploring various options for securing future water supplies. Three of EBMUD's current projects address the need for additional supply during drought periods and two current projects improve water supply reliability.[7] Projects include exploring underground alternatives and desalination opportunities.[8] In addition, EBMUD has ongoing conservation and recycling efforts.

Of particular relevance to the Eden Area are the Freeport Regional Water Project and the Bayside Groundwater projects. EBMUD approved the environmental documentation for the Freeport Regional Water Project in 2004. This project will provide an additional 100 MGD of supplemental water in dry years. The project is expected to be completed in 2009.[9] EBMUD has acknowledged that even with water from the Freeport Project, its customers will need to reduce water use by 25 percent in a severe drought.[10] The Bayside Groundwater Project is proposed to have an initial phase of one MGD average annual capacity, by converting the existing demonstration well on the

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[4] EBMUD, *Water Conservation and Recycling, Fiscal Year 2004 Annual Report*, 2004, pages E to 4.

[5] EBMUD, *Urban Water Management Plan*, 2000, pages 4 to 25.

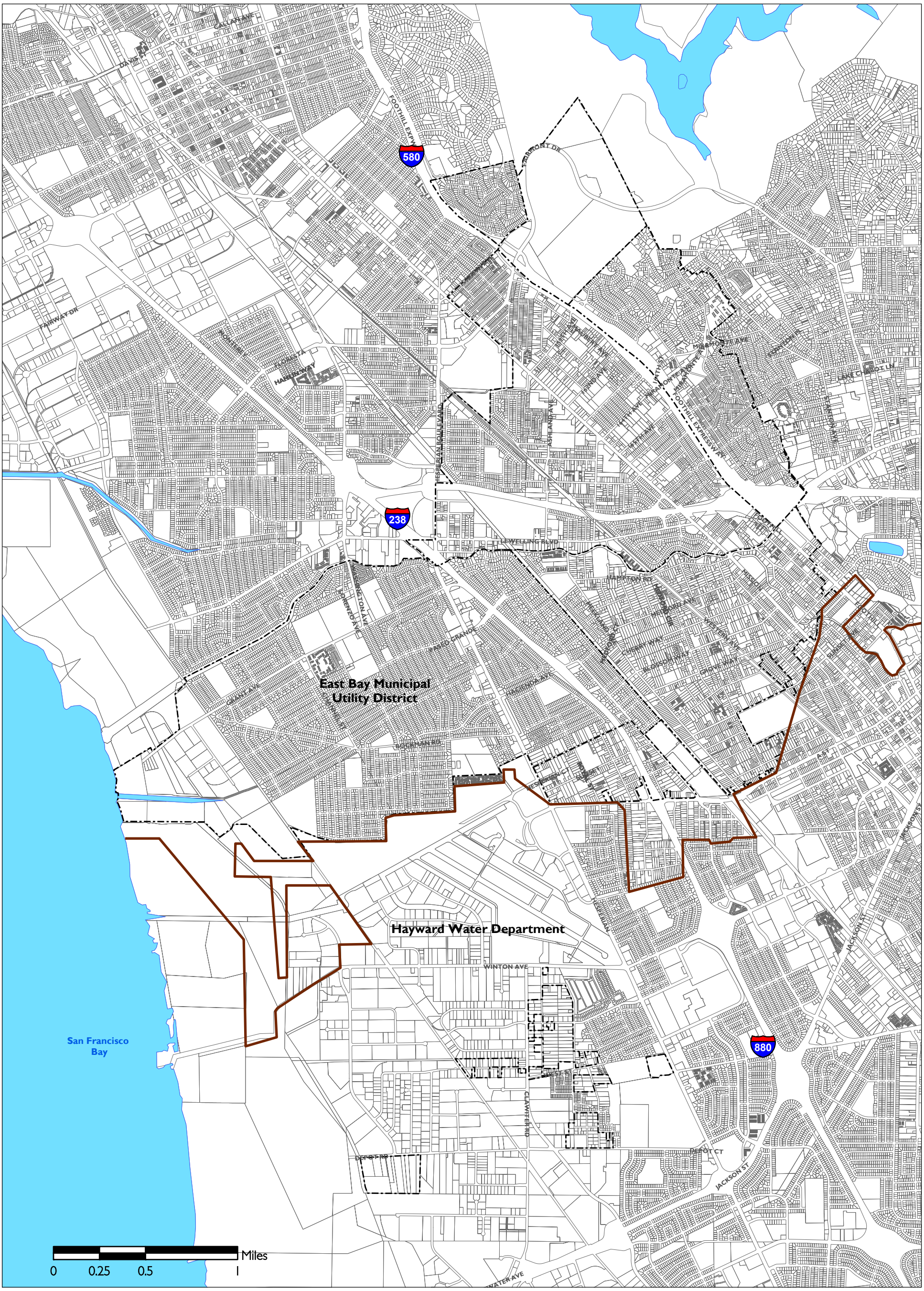
[6] EBMUD, *Annual Report 2004*, 2004, page 1.

[7] EBMUD website, http://www.ebmud.com/water_&_environment/water_supply/current_projects/default.htm, accessed February 23, 2005.

[8] EBMUD, *Annual Report 2004*, 2004, page 5.

[9] EBMUD, *Annual Report 2004*, 2004, page 4.

[10] EBMUD, *Annual Report 2004*, 2004, page 1.



Service Area Boundary

Study Area Boundary

FIGURE 4.4-1

WATER SERVICE AREA BOUNDARY

Oro Loma Wastewater Treatment Plan site in San Lorenzo, into a permanent potable water source. Water levels, water quality and ground surface elevations will be monitored during operation of the Phase one project to understand the feasibility and potential effects of implementing a second phase that would expand capacity up to ten MGD.[11]

The Eden Area is located in the southern portion of EBMUD's Central Pressure Zone (PZ), which serves the East Bay Plain, from Richmond in the north to San Lorenzo in the south. The Central PZ receives treated water from both the Orinda Water Treatment Plant (WTP) and the Upper San Leandro WTP. Water at these facilities is stored in the Central Reservoir and the Dunsmuir Reservoir. From there, it flows via gravity throughout the EBMUD water transmission system.[12]

Average demand in the southern portion of the Central PZ, the area south of High Street, is approximately 25 MGD.[13] There are approximately 60,000 customer accounts within the southern portion of the Central PZ, 90 percent of which are for residences. Single-family and multi-family dwellings consume 67 percent of the water delivered to this portion of the District. Industrial and commercial users make up approximately 25 percent of the demand.

Major water storage and distribution facilities located in the Eden Area include: [14]

- South Reservoir, located off Gail Drive (capacity 50.4 million gallons)
- Stanton Reservoir located off Fairmont Drive (capacity 1.0 million gallons)

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[11] EBMUD Bayside Groundwater Project website, http://www.ebmud.com/water_&_environment/water_supply/current_projects/bayside_groundwater/default.htm, accessed on February 24, 2005.

[12] *San Lorenzo Village Center Specific Plan Draft EIR*, June 2003, page III-51.

[13] East Bay Municipal Utility District. *Bayside Groundwater Project Draft EIR, 2001*

[14] *Eden Area Redevelopment Plan DEIR*, April 2000, pages 12-14 and 12-15.

- Bayview Pumping Plant located on Mattox Road (capacity 3.4 million gallons)
- Mattox Rate Control Station on Mattox Road
- Oak Rate Control Station on Oak Street[15]

Additionally, there are several transmission mains in the Eden Area along roadway easements, including:

- Foothill Boulevard
- Blossom Way
- Hathaway Avenue
- Dell Court
- Bartlett Avenue
- Grove Way
- Mission Boulevard
- Oak Street
- Apple Avenue
- Mattox Road

Additional facilities include EBMUD's right-of-way easements in other parts of the area. These facilities are critical to the operation of EBMUD's water supply and distribution system.[16]

b. Hayward Water District

Residents in Mt. Eden receive water from three sources, the City of Hayward Water District, the Mohrland Mutual Water Association and individual wells. There are water quality problems associated with the use of individual wells due to contamination by industrial uses and the shallowness of the wells in the area.[17] The Mohrland Mutual Water Association (MMWA) derives its

[15] *Eden Area Redevelopment Plan DEIR*, April 2000, page 12-15.

[16] *Eden Area Redevelopment Plan DEIR*, April 2000, pages 12-14 and 12-15.

[17] *Eden Area Redevelopment Plan DEIR*, April 2000, page 12-15.

water from local wells, and the amount of water it serves the Mt. Eden area is of an inconsequential amount for this analysis.[18]

The following information for the City of Hayward Water District comes from personal communication from the Department of Public Work with the City of Hayward, unless otherwise notes.[19] The City of Hayward owns and operates the water distribution system for most of the City. A small portion of the City, which does not include the Mt. Eden area, is served by EBMUD. Water is purchased on a wholesale basis from the San Francisco Public Utilities Commission (SFPUC), delivered to the City via two aqueducts with a maximum gravity capacity of 32 MGD. The capacity can exceed 50 MGD by using the booster pumps on the transmission mains.

The following facilities are currently operating within Hayward's service area:

- Two aqueducts to receive water from SFPUC.
- 14 storage reservoirs (with total capacity of 25 MG).
- Ten pump stations, including two system-wide booster pump stations.
- Over 300 miles of transmission mains.
- Five emergency wells (for short-term emergency use only).
- Two emergency water interties with EBMUD and Alameda County Water District.

[18] Jacklin, Edith. Senior Utilities Service Representative, Department of Public Works, City of Hayward. Personal communication with José Moreno, DC&E, June 26, 2006.

[19] Mosher, Marilyn. Administrative Analyst, Department of Public Works/Utilities, City of Hayward. Personal e-mail communication with José Moreno, DC&E, June 28, 2006.

The following major projects are included in the City's five-year capital improvement program:

- Various main replacements and upgrades.
- New 2 x 3.0 MG High School Reservoir (replaces existing smaller reservoir).
- New 1.5 MG Highland 250 Reservoir (replaces existing smaller reservoir).
- New 2.0 MG Highland 1000 Reservoir (replaces existing smaller reservoir).

As mentioned above, the City of Hayward receives its water supply from SFPUC, in accordance with a contract that allows Hayward to purchase sufficient water to meet its demands, within the ability of SFPUC to deliver the water. The contract has no pre-set cap and no termination date, and it is expected that Hayward will continue to utilize this water source. SFPUC is undertaking a $4 billion regional water system improvement program to increase system reliability during earthquakes and water shortages. Future water shortages are not anticipated under normal operating and water supply conditions. There are no known water quality issues that are expected to affect Hayward water supplies.

In years that water supplies are below normal, Hayward is allocated a portion of the available supply according to the terms of an Interim Water Shortage Allocation Plan, developed in cooperation with SFPUC and other suburban purchasers. The IWSAP allocates water based on a combination of average usage and supply assurance. Short-term emergency water supplies, for use during catastrophic events such as an earthquake, are available through interties with neighboring agencies and five emergency wells.

Water demand fluctuates from year to year, depending upon climatic conditions. The demand for the Hayward Water District in 2004-05 averaged 18.5 MGD.

2. Standards of Significance

The proposed project would have an impact on water service if it would:

- Require or result in the construction of new water facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.
- Have insufficient water supplies available to serve the project from existing entitlements and resources, therefore requiring new or expanded entitlements.
- 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.
- Require or result in the construction of recycled water facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

3. Impact Discussion

This section discusses the potential impacts of the adoption of the proposed General Plan on water supply in the Eden Area.

Implementation of the Plan could result in an increase of dwelling units and an increase in employment-generating commercial uses within the Area, which would increase water demand within the Eden Area and to its two main water providers, EBMUD and SFPUC, that serve the area.

As previously stated, EBMUD has water rights for up 325 mgd or 997 acre-feet from the Mokelumne River. Furthermore, EBMUD reservoirs receive an additional 30,000 acre-feet or 30 mgd of water from local watershed runoff, as mentioned above. The EBMUD's Urban Water Management Plan (UWMP) 2000, which used ABAG's *Projections 2000* for its population assumptions, projected a customer demand of 277 MGD by the year 2020, well below its current water rights level. Consequently, the UWMP 2000 determined that EBMUD will be able to meet customer demand through the year 2020 if no serious droughts or catastrophes occur within that time. In such as case

where drought lasts for consecutive years, EBMUD would implement a number of contingency plans which include various conservation measures, in order to both meet basic water demands and to preserve water supplies.

Hayward's Water District purchases its water supply from the San Francisco Public Utilities Commission (SFPUC) via its Regional Water System (RWS). The SFPUC RWS currently serves an average of approximately 265 million MGD to 2.4 million users in Tuolumne, Alameda, Santa Clara, San Mateo and San Francisco counties. The SFPUC RWS supplies water from two primary sources:

- Tuolumne River through the Hetch Hetchy Reservoir; and
- Local runoff into reservoirs in Bay Area reservoirs in the Alameda and Peninsula watersheds.

SFPUC's UWMP 2005 projected a customer demand of 286 MGD by the year 2020 for its RWS, with an equal amount of supply. The UWMP also indicates that during normal precipitation years, the SFPUC has adequate supplies to meet its projected retail and wholesale water demands up to the year 2030.[20] In preparation for drought-years, SFPUC utilizes a "Design Drought" model, which helps in the planning and modeling of future drought scenarios. Additionally, SFPUC is undertaking the Waster System Improvement Program (WSIP) and has a set of its own contingency plans in order to meet basic water demands to its entire service area.

In summary, it is expected that existing water supplies available to this area, from Mohrland Mutual Water Association, the City of Hayward Water District and EBMUD would be sufficient under the proposed General Plan.

Furthermore, the proposed General Plan is designed to help the County address growth pressures, in part by providing a policy framework to control and direct growth as it occurs. The proposed General Plan also includes policies and guidelines encouraging water conservation, which would reduce the

[20] SFPUC, 2005, *Urban Water Management Plan 2005*, page 47.

potential impact of increase water demand associated with project development in the Eden Area. These policies are meant to address potential impacts associated with water service in the Eden Area. For example, Policy P1 under Goal PF-9 would require the County to support the efficient use of water through such means as conservation and recycling, and encourage the development of water recycling facilities to help meet the needs in the Eden Area.

Given that landscape irrigation is one of the highest water consuming uses, the Plan addresses the need to minimize the impact from such use: the County would encourage the efficient use of water for non-residential landscape irrigation by supporting the use of recycled water (Policy P4 under Goal PF-9); and the County would require that new development meet the Landscape Water Conservation Guidelines adopted by the Alameda Board of Supervisors as a condition of permit approval (Policy P6 under Goal PF-9).

Additionally, in order not to overextend the limited water supply, the Plan would require that the approval of new development be conditional on the availability of sufficient water for the project (Policy P2 under Goal PF-9).

Implementation of General Plan policies and actions, in concert with EBMUD and SFPUC policies, standards and requirements would reduce the potential for impacts associated with water service to the Eden Area to a less than significant level.

4. Impacts and Mitigation Measures

Since no impacts to water service were identified, no mitigation measures are required.

B. Wastewater

This section describes current conditions and potential impacts of the proposed General Plan with regard to wastewater in the Eden Area.

1. Existing Setting[21]

Wastewater treatment service in the Eden Area is provided by two sanitary sewer districts, described below and shown on Figure 4.4-2:

- **Oro Loma Sa**nitary District, which serves Ashland, Cherryland, San Lorenzo, Hayward Acres, Hillcrest Knolls and El Portal Ridge.
- Castro Valley San**itary District**, which serves the Fairmont Complex.

Mt. Eden is on individual septic systems as there is no municipal wastewater provided for the area.

a. Oro Loma Sanitary District

The Oro Loma Sanitary District (OLSD) collects wastewater flows from an approximately 12.8 square mile service area that includes the Eden Area. The OLSD treats flows collected from its service area as well as from the Castro Valley Sanitary District (CVSD) service area (see section b below).[22]

The OLSD and the CVSD share a treatment plant, the Oro Loma/Castro Valley Wastewater Treatment Plant, located in San Lorenzo. The plant has a peak dry weather treatment capacity of 20 MGD.[23] OSLD treats about 15 MGD, including flow from the CVSD.[24] In general, the capacities of the sewer facilities are considered adequate for the level of development for which the Eden Area is currently zoned.[25]

OLSD is in the process of upgrading the treatment plant through the OLSD Wastewater Treatment Plant Capacity Restoration Project. The project is necessary to restore the plant's 20 MGD treatment capacity in compliance

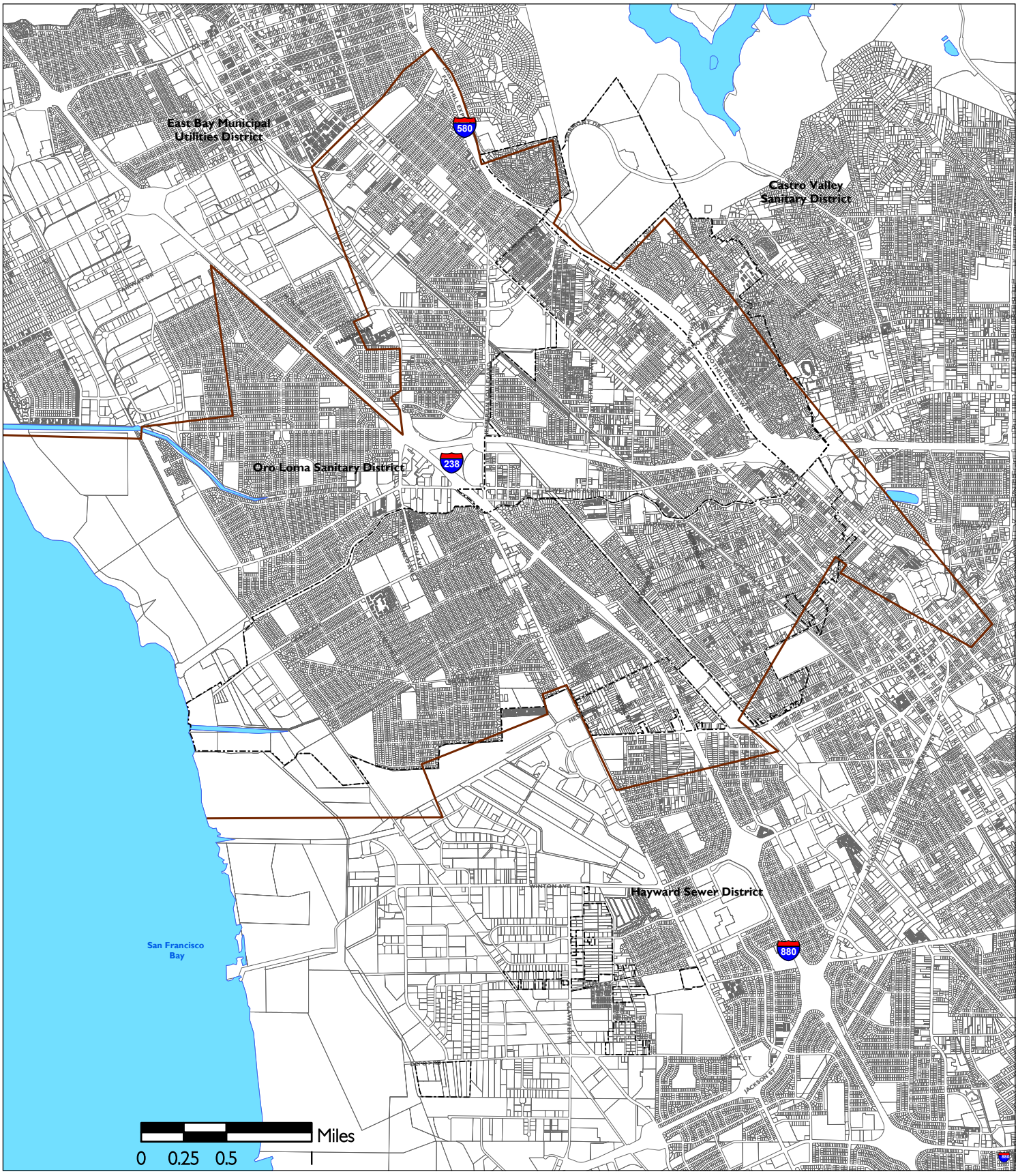
[21] *Eden Area Redevelopment Plan DEIR*, April 2000, pages 12-16 to 12-17

[22] *Eden Area Redevelopment Plan DEIR*, page 12-15.

[23] EBMUD, *Urban Water Management Plan 2000*, February 2001, page 5-32.

[24] EBMUD, *Urban Water Management Plan 2000*, February 2001, page 5-32.

[25] *Eden Area Redevelopment Plan DEIR*, April 2000, page 12-17.



Wastewater Service District Boundaries

Study Area Boundary

FIGURE 4.4-2

WASTEWATER SERVICE DISTRICTS

with newer, more stringent environmental and regulatory requirements.[26] The original treatment plant capacity was reduced over time because of tightening environmental requirements on the plant's effluent quality standards. Over the last forty years, the District's ability to treat wastewater has essentially been cut by 25 percent. The planned improvements will secure adequate capacity for modern discharge requirements, and provide redundancy in several key process units, which will allow a standby unit to process wastewater during periods of maintenance on parallel equipment.[27] Construction on the project began July 19, 2004. The project is scheduled for completion in 2007.[28]

b. Castro Valley Sanitation District

The Castro Valley Sanitation District (CVSD) provides wastewater collection services to the Fairmont Complex. The CVSD serves a population of approximately 55,000, with more than 22,000 single and multi-family residences and businesses.[29] The sewage collection system comprises approximately 155 miles of sewers and eight sewage pumping plants, together with five miles of outfall sewer lying outside the District boundaries.[30]

As stated above, the collected wastewater in the CVSD is treated through the Oro Loma/Castro Valley Wastewater Treatment Plant. The CVSD owns 25 percent of the treatment plant site.[31] CVSD is entitled to a nominal average dry-weather flow of 5 MGD through the plant. Daily dry-weather flows have

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[26] OSLD, "Plans are Underway for Oro Loma's Plant Addition Project," *Oro Loma Ne*ws, Issue 31, Spring 2003.

[27] OLSD, "Restoration Project Groundbreaking," *Oro Loma Ne*ws, Issue 35, Summer 2004.

[28] OLSD, "Plant Capacity Restoration Project Timeline," *Oro Lomo News*, Issue 36, Fall 2004.

[29] CVSD website, http://www.cvsan.org/, accessed on February 23, 2005.

[30] CVSD General Information website, http://www.cvsan.org/general.htm, accessed on February 23, 2005.

[31] CVSD Press Releases website, http://www.cvsan.org/pressrelease04.htm, accessed on February 23, 2005.

recently been averaging 3.7 MGD. Under drought conditions in the past, the daily dry-weather flow averaged approximately 2.3 MGD.[32]

Last year, the CVSD embarked on a wastewater collection system master plan to identify components of the collection system that are under capacity and require rehabilitation or replacement. This project is scheduled to be completed in March of 2006.[33]

2. Standards of Significance

The proposed project would have a significant impact to wastewater service if it would:

- Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board.
- 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.
- Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.

3. Impact Discussion

Increased residential, commercial and industrial development under the proposed General Plan could potentially cause an increase in wastewater generation. Projected development could increase the amount of paved, impermeable surfaces, which could result in non-point sources of pollution being discharged into local water bodies.

[32] CVSD General Information website, http://www.cvsan.org/general.htm, accessed on February 23, 2005.

[33] CVSD, *Annual Report 2003-2004*, page 16.

The proposed General Plan includes policies which are meant to address any impacts associated with the proposed project with respect to wastewater services in the Eden Area. Goal PF-10 seeks to ensure that wastewater is collected, treated and disposed of in a manner that is safe, sanitary and environmentally acceptable. This goal is supported by Policy P1, which would require that the approval of new development be conditional on the availability of adequate, long-term capacity of wastewater treatment, conveyance and disposal sufficient to service the proposed development. The proposed Plan goes further by requiring all new development to demonstrate to the County that the downstream sanitary sewer system is adequately sized and has sufficient capacity to accommodate anticipated sewage flows. If the downstream mains are found to be inadequate, the developer would be required to provide additional facilities to accept the additional sewage expected to be generated by the development (Policy P3 under Goal PF-10).

Finally, in the effort to protect current Eden Area residents from future development, Policy P2 under Goal PF-10 would require, to the greatest extent feasible, upgrades to wastewater conveyance systems not to disrupt the quality of life for Eden Area residents by significantly increasing noise, air pollution or traffic congestions.

Implementation of the General Plan policies and actions, in concert with the EBMUD, OLSD and ABAG policies, standards and requirements would reduce the potential for impacts associated with wastewater service to the Eden Area to a less than significant level.

4. Impacts and Mitigation Measures

Since no impacts were identified, no mitigation measures are required.

C. Solid Waste

This section describes current conditions and potential impacts of the proposed General Plan with regard to solid waste collection and disposal services in the Eden Area.

1. Existing Setting

This section describes the existing solid waste and recycling services available to Eden Area residents and businesses. The Eden Area falls within the jurisdictional boundaries of several agencies responsible for solid waste and recycling collection and education: the Alameda County Waste Management Authority, Oro Loma Sanitary District and Castro Valley Sanitary District.

a. Alameda County Waste Management Authority

Solid waste and recycling collection service and programming in the Eden Area is overseen by the Alameda County Waste Management Authority (ACWMA). The ACWMA is a public agency formed in 1976 by a Joint Exercise of Powers Agreement among the County of Alameda, each of the fourteen cities within the county, and two sanitary districts that provide refuse and recycling collection services. The ACWMA is responsible for preparing the CoIWMP, which is described in Section 2.c below. ACWMA's other responsibilities include enforcing CoIWMP policies, implementing information and public education programs, implementing the green building and construction and demolition debris recovery program, and providing funding and policy oversight for the County Household Hazardous Waste Collection Program.[34]

b. Oro Loma Sanitary District

Most of Alameda County's unincorporated residents are within either the Oro Loma Sanitary District (OLSD) or Castro Valley Sanitary District (CVSD). Solid waste disposal and recycling services in most the Eden Area is

[34] Alameda County Waste Management Authority, *Countywide Integrated Waste Management Plan*, Adopted: February 26, 2003, page II-4.

provided by the OLSD, which is a member agency of the ACWMA.[35] In 2003, the entire service area of the OLSD disposed of about 43,100 tons of solid waste.[36]

Residential recycling diversion tonnage for the OLSD in 2000 was 4,926 tons.[37] The waste diversion rate for the Oro Loma Sanitary District was 71 percent in 2000, which exceeds the State-mandated requirement of 50 percent. The OLSD had the highest diversion rate in 2000 of all of the member agencies in the ACWMA.[38] Waste collected within the OLSD is disposed of at the Altamont Landfill.[39]

The OLSD contracts with Waste Management of Alameda County for solid waste and recycling collection service. The OLSD has curbside collection for residential recycling. Recyclables are collected in wheeled recycling "carts" and the recycling is commingled (i.e., all acceptable recyclable materials are placed into one cart). All businesses in unincorporated Alameda County are eligible for Oro Loma's commercial recycling services.[40]

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[35] Oro Loma Sanitary District does not collect information on solid waste specifically for the Eden Area.

[36] Alameda County Waste Management Authority, *Jurisdiction Quarterly Tonnages Report*, 2003, Run Date: February 7, 2005.

[37] Alameda County Waste Management Authority, *Countywide Integrated Waste Management Plan*, Adopted: February 26, 2003, page III-6.

[38] Alameda County Waste Management Authority, *Countywide Integrated Waste Management Plan*, Adopted: February 26, 2003, page III-8.

[39] Brown, Vence & Associates, *Alameda County Source Reduction and Recycling Board "5 Year Audit" Programmatic Overview and Evaluation*, April 2002, section 2-3.

[40] OLSD Commercial Recycling Services, http://www.oroloma.org/services/garbage&recycling/recycling/commercial_services.html,accessed on February 2, 2005.

c. Castro Valley Sanitary District

A small portion of the El Portal Ridge area falls within the Castro Valley Sanitary District (CVSD), which is a member agency of the ACWMA. Through a franchise agreement with Waste Management of Alameda County the CVSD performs a weekly service[41] to collects refuse, green wastes and recyclables within the District, serving a population of about 55,000 people.[42] The total disposal tons for the CVSD in 2003 was about 34,684 tons (77,692,160 pounds).[43] It is not known how much of this could be attributed to residents or businesses within the portion of El Portal Ridge that lies within the General Plan area.

The CVSD diverted 61 percent of its garbage to recycling in 2003.[44] Much like Oro Loma Sanitary District, Waste collected within the CVSD is disposed of at the Altamont Landfill.[45] According to the CoIWMP, the Altamont Landfill is expected to remain open until 2071.[46]

d. Unincorporated Alameda County

Most of Alameda County's unincorporated areas lie within the OLSD. Small pockets on the east side of the Eden Area are in the CVSD. About one percent of the County's population is located within unincorporated areas outside these two districts; in small areas surrounding cities, in unincorporated

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[41] Castro Valley Sanitary District Recycling Guide, http://www.cvsan.org/recycling.htm, accessed on February 2, 2005.

[42] Personal e-mail communication from Noelle Hartshorn, CVSD, to Sue Beazley, DC&E, February 16, 2005.

[43] Personal communication with Tom Padia, Recycling Director, Alameda County Waste Management Authority, February 2, 2005.

[44] CVSD, *Annual Report 2003-2004*, page 33.

[45] Brown, Vence & Associates, *Alameda County Source Reduction and Recycling Board "5 Year Audit" Programmatic Overview and Evaluation*, April 2002, section 2-3.

[46] Alameda County Waste Management Authority, *Countywide Integrated Waste Management Plan*, Adopted: February 26, 2003, pages II-36 and III-16. Remaining capacity was as of mid-2001.

communities such as Sunol, or in remote ranch and farming areas. Since the County of Alameda does not presently franchise for waste collection, residents and businesses in these areas generally self-haul or contract for collection service with the nearest provider.[47] Total disposal tonnage for 2003 for unincorporated Alameda County was about 12,200 tons.[48] It is not known what proportion of this total is from the pockets of the Eden Area not covered by the OLSD and CVSD.

The Mount Eden area, which is surrounded by the City of Hayward, is served by Waste Management pursuant to a franchise agreement with Alameda County. The City of Hayward also has a franchise agreement with Waste Management of Alameda County to provide waste and recycling collection service to Hayward residences. Garbage and recycling collection services for the Mount Eden area are comparable to those provided to residential and businesses within incorporated Hayward. These services include weekly curbside collection of garbage, recyclables, and green waste for single family dwellings. Multi-family dwellings are provided with bi-weekly recyclables collection. Waste collected in the Eden Area is hauled to the Altamont landfill.[49]

In 1999, the Alameda County Board of Supervisors approved the formation of the County Service Area for the provision of recycling services to unincorporated areas not served (portions of unincorporated Hayward, West A Street, Mount Eden, and Fairview). The franchise agreement for recycling in these areas is between the County and Waste Management of Alameda

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[47] Alameda County Waste Management Authority, *Countywide Integrated Waste Management Plan*, Adopted: February 26, 2003, page II-21. Information verified through personal communication with Tom Padia, Recycling Director, Alameda County Waste Management Authority, February 2, 2005.

[48] Alameda County Waste Management Authority, *Jurisdiction Quarterly Tonnages Report*, 2003, Run Date: February 7, 2005.

[49] Personal email communication with Vera Dahle-Lacaze, Solid Waste Manager, City of Hayward, to Sue Beazley, DC&E, February 2, 2005.

County. The materials picked up for recycling are the same as those picked up in the OLSD and the City of Hayward.[50]

e. Landfills

Operating landfills in Alameda County include the Altamont Landfill Resource Recovery Facility near Altamont Pass, the Tri-Cities Recycling and Disposal Facility in Fremont, and the Vasco Road Landfill north of Livermore. Each is privately owned and operated. The Tri-Cities facility was originally scheduled to close in 2004, but it is now likely to remain open until the end of 2006. After it closes, waste will be disposed of at the Altamont landfill.[51] The Countywide Integrated Waste Management Plan projected that as of mid-2001, there was an estimated combined remaining capacity of 81 million tons for the three landfills in Alameda County.[52] Table 4.4-1 shows the waste disposal and diversion rate by jurisdiction. Table 4.4-2 indicates the remaining capacities at each of these landfills.

2. Regulatory Setting

This section summarizes the key solid waste legislation in California and the two primary documents guiding solid waste management in the Eden Area.

a. California Integrated Waste Management Act

California's Integrated Waste Management Act of 1989 (AB 939) set a requirement for cities and counties to divert 50 percent of all solid waste from landfills by January 1, 2000, through source reduction, recycling and composting. To help achieve this, the Act requires that each City and County prepare and submit a Source Reduction and Recycling Element. AB 939 also

[50] Letter from Adolph Martinelli, Director of Community Development, Alameda County Community Development Agency, to Board Members, April 26, 2000.

[51] Personal communication with Tom Padia, Recycling Director, Alameda County Waste Management Authority, February 2, 2005.

[52] Alameda County Waste Management Authority, *Countywide Integrated Waste Management Plan*, Adopted: February 26, 2003, page III-16.

TABLE 4.4-1 **WASTE DISPOSAL AND DIVERSION, BY JURISDICTION**

Jurisdiction	Total Disposal, 2003 Tons[a]	Waste Diversion Rate[b]
CVSD	34,684	61% (2003)[c]
OLSD	46,113	71% (2000)
Unincorporated Alameda County	12,232	65% (2000)

[a] Personal communication with Tom Padia, Recycling Director, Alameda County Waste Management Authority, February 2, 2005; and Alameda County Waste Management Authority, *Jurisdiction Quarterly Tonnages Report*, 2003, Run Date: February 7, 2005.

[b] Alameda County Waste Management Authority, *Countywide Integrated Waste Management Plan*, Adopted: February 26, 2003.

c CVSD, *Annual Report 2003-2004*, page 33.

TABLE 4.4-2 **ESTIMATED REMAINING CAPACITY AND DISPOSAL TONNAGE OF ALAMEDA COUNTY LANDFILLS**

Landfill	Remaining Capacity (million tons)[a]	Expected Closure Date[a]	Average Tons per Day[c]	Maximum Tons per Day[d]
Altamont	67	2071	5,600	11,150
Tri-Cities Recycling & Disposal	less than 1	end of 2006[b]	1,000	2,346
Vasco Road Landfill	14	2037	1,600	2,518

[a] Alameda County Waste Management Authority, *Countywide Integrated Waste Management Plan*, Adopted: February 26, 2003, pages II-36 and III-16. Remaining capacity was as of mid-2001.

[b] Personal communication with Tom Padia, Recycling Director, Alameda County Waste Management Authority, February 2, 2005.

[c] EBMUD, *Bayside Groundwater Project Draft EIR*, 2001, page 3.6-5.

[d] CIWMB Landfill Compliance Study website, http://www.ciwmb.ca.gov/landfills/complystudy/, accessed on February 25, 2005

established the goal for all California counties to provide at least 15 years of ongoing landfill capacity.[53]

b. Alameda County Source Reduction and Recycling Plan: Vision 2010: 75% and Beyond

The Alameda County Source Reduction and Recycling Plan identifies specific programs, objectives, and strategies for the County to reach a 75 percent and beyond diversion rate. The Plan is intended to serve as a guiding document together with the Countywide Integrated Waste Management Plan (CoIWMP), which is described in Section 2.c below. The Plan was prepared in response to the Source Reduction and Recycling Initiative ("Measure D"), which was approved by voters in 1990. Measure D established aggressive countywide waste diversion goals above the goals mandated by the State.[54]

c. Countywide Integrated Waste Management Plan

The CoIWMP is mandated by State law under AB 939. The purpose of the CoIWMP is to describe local waste diversion and disposal conditions and lay out realistic programs to achieve the waste diversion goals outlined in AB 939. The CoIWMP serves as the primary tool for designing waste reduction programs that are countywide in scope. The Plan also addresses the county's landfill needs in a comprehensive way. The CoIWMP consists of the following elements:

- A Source Reduction and Recycling Element (SRRE) for each city and unincorporated area that details local waste reduction programs;
- A Household Hazardous Waste Element (HHWE) for each city and unincorporated area that details local programs to reduce this waste;

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[53] California Integrated Waste Management Board's website. http://www.ciwmb.ca.gov/landfills/needfor/ default.htm, accessed on February 25, 2005.

[54] *Alameda County Source Reduction and Recycling Plan: Vision 2010: 75% and Beyond*, adopted by Alameda County Source Reduction And Recycling Board on January 9, 2003, and by Alameda County Waste Management Authority on January 29, 2003.

- A Non-Disposal Facility Element (NDFE) for each city and unincorporated area that locates and describes certain waste diversion facilities;
- A Countywide Integration Summary Plan that describes countywide programs and recaps the local SRREs, HHWEs and NDFEs; and
- A Countywide Siting Element that describes landfill disposal needs and programs.[55]

In Alameda County, waste reduction and disposal facilities that require Solid Waste Facility Permits must conform with the policies contained in the CoIWMP.

3. Standards of Significance

The proposed project would have a significant impact related to solid waste disposal if it would *not*:

- Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs.
- Comply with federal, State, and local statutes and regulations related to solid waste.

4. Impact Discussion

Under the proposed General Plan an increase in residential, industrial and commercial development could result in an increase in solid waste generation. The Eden Area is currently served by three landfills, two of which are scheduled to still be in service years after the time horizon for the proposed General Plan has passed. These landfills serve the entire County of Alameda and a population increase in the Eden Area of approximately 16,000 people would not be expected to represent a significant impact to local landfills. This is due to the small percentage growth increase relative to landfill capacity, which currently stands at 82 millions tons. Additionally, two of the largest solid waste collectors in the Eden Area achieve a waste diversion rate ranging from

[55] Alameda County Waste Management Authority, *Countywide Integrated Waste Management Plan*, Adopted: February 26, 2003, page 3.

50-70%, far surpassing current State regulations. Furthermore, the proposed General Plan contains policies and guidelines which are meant to address any potential impacts to solid waste services under the proposed project.

The proposed Plan would require the County to strive to meet or exceed the goals fore reducing, recycling and safely storing waste stated in the *Alameda County Integrated Waste Management Plan* (Policy P2 under Goal PF-8). Strengthening this Policy is Policy P8 under Goal PF-8, which encourages the County to work to expand curbside recycling to all residential communities within the Eden Area to ensure equal levels of service and divert solid waste from the landfill, in compliance with State law. The Plan would also target public buildings by requiring them to be designed or improved with on-site storage facilities for solid waste and recyclable materials (Policy P4 under Goal PF-8). As for the private sector, the Plan would encourage the County to work with residents, businesses and other members of the community, including architects, builders and contractors, to achieve standards set by LEED™ for commercial buildings and the Alameda County Waste Management Authority Green Points and Green Building Guidelines for residential projects (Policy P7 under Goal PF-8).

Implementation of the General Plan policies in concert with other local and regional policies would reduce the potential for impacts associated with solid waste service to the Eden Area to a less than significant level.

5. Mitigation Measures

Since no impacts were identified, no mitigation measures are required.

4.5 HAZARDS AND HAZARDOUS MATERIALS

This chapter describes the existing setting with respect to hazardous materials, their transport and containment within the Eden Area. The chapter also describes potential environmental impacts the proposed General Plan would have on the utilization, transportation and containment of hazardous materials with in the Eden Area.

A. Existing Setting

This section summarizes the regulations and information on hazardous materials in the Eden Area and evaluates environmental conditions within the project site.

1. Regulatory Setting

Hazardous materials use, generation, disposal and transportation are subject to numerous federal, State, and local laws and regulations. Hazardous materials are regulated by various agencies whose jurisdictions and responsibilities sometimes overlap. Much of the information about federal, State, regional and local regulations as they pertain to hazardous materials, found in this section is taken from *Understanding Environmental Impact Assessment,* written by Grassetti Environmental Consulting, dated February 2003.

a. Federal Level Regulations

At the federal level, the Environmental Protection Agency (EPA) is the principal regulatory agency. The Occupational Safety and Health Administration (Fed/OSHA) regulates the use of hazardous materials, including hazardous building materials, insofar as these affect worker safety through a delegated State program. Furthermore, at the federal level, the Department of Transportation (DOT) regulates transportation of hazardous materials.

i. Resource Conservation and Recovery Act of 1974 (RCRA)

RCRA was enacted in 1974 to provide a general frame work for the national hazardous waste management system, including the determination of whether hazardous waste are being generated, techniques for tracking wastes to eventual disposal, and the design and permitting of hazardous waste management facilities.

ii. The Hazardous and Solid Waste Amendments

The Hazardous and Solid Waste Amendments were enacted in 1984 to better address hazardous waste; this amendment began the process of eliminating land disposal as the principal hazardous waste disposal method.

iii. Compensation and Liability Act of 1980 (CERCLA)

CERCLA, also know as Superfund, was enacted in 1980 to ensure that a source of funds were available to clean up abandoned hazardous waste sites, compensate victims, address releases of hazardous materials , and establish liability standards for responsible parties.

iv. The Superfund Amendments and Reauthorization Act of 1986 (SARA)

SARA amended CERCLA in 1986 to increase Superfund budget, modify contaminated site clean up criteria and schedules, and revise settlement procedures. SARA also provides a regulatory program and fund for underground storage tank clean ups.

b. State Regulations

At the State level, agencies such as Cal/OSHA, the Office of Emergency Services (OES), and the Department of Health Services (DHS) have rules governing the use of hazardous materials that parallel federal regulations and are sometimes more stringent. The Department of Toxic Substances Control (DTSC) is the primary State agency governing the storage, transportation and disposal of hazardous wastes. DTSC is authorized by the U.S. Environmental Protection Agency to enforce and implement federal hazardous materials laws and regulations. DTSC has oversight of Annual Work Plan sites (commonly known as State Superfund sites), sites designated as having the greatest potential to affect human health and the environment.

The primary California State laws for hazardous waste are: the California Hazardous Waste Control Law (HWCL), the State equivalent of RCRA, and the Carpenter-Presley-Tanner Hazardous Substance Account Act (HSAA), the State equivalent of CERCLA. State hazardous materials and waste laws are contained in the California Code of Regulations, Titles 22 and 26. The State regulation

concerning the use of hazardous materials in the workplace is included in Title 8 of the California Code Regulations.

One key State law, which requires special assessment under CEQA, relates to Hazardous Waste and Substance Sites (Cortese) List which is a planning document used by State and local agencies and developers to comply with CEQA requirements in providing information about the location of hazardous materials release sites. Government Code Section 65962.5 requires that an updated list be prepared at least annually by the California EPA.

c. Regional and Local Regulations

The Regional Water Quality Control Board (RWQCB) is authorized by the State Water Resources Control Board to enforce provisions of the Porter-Cologne Water Quality Control Act of 1969. This act gives the RWQCB authority to require groundwater investigations when the quality of groundwater or surface waters of the State is threatened and to require remediation of the site, if necessary. Both of these agencies are part of the Cal EPA. In the Bay Area, the Bay Area Air Quality Management District (BAAQMD) may impose specific requirements on remediation activities to protect ambient air quality from dust or other airborne contaminates.

Administration and enforcement of the major environmental programs were transferred to local agencies as Certified Unified Program Agencies (CUPAs) beginning in 1996. The purpose of this was to simplify environmental reporting by reducing the number of regulatory agency contacts a facility must maintain and requiring the use of more standardized forms and reports.

Hazardous waste programs in the Eden Area are also governed by the *Alameda County Hazardous Waste Management Plan* and the *Alameda County Integrated Waste Management Plan*. These plans include forecasts for the generation of hazardous waste and provide policies for the management of this waste in Alameda County. The primary focus of both plans is to reduce the amount of hazardous waste generated in the County and to safely reuse, recycle or store waste that is generated.

2. Hazardous Materials in the Eden Area

Nearly all businesses and residences in the Eden Area generate some amount of hazardous wastes. The most common industrial hazardous wastes in the Eden Area are generated from gasoline service stations, dry cleaners, automotive mechanics, auto body repair shops, machine shops, printers and photo processors. Most of these wastes are petroleum-based or hydrocarbon hazardous waste and include cleaning and paint solvents, lubricants, and oils. Moreover, medical wastes, defined as potentially infectious waste from sources such as laboratories, clinics and hospitals, are also included among the hazardous wastes found in the Eden Area.

The Alameda County Waste Management Authority has primary responsibility for enforcing most regulations pertaining to hazardous materials in the Eden Area. The Alameda County Hazardous Materials Division acts as first responder to hazardous materials incidents within the Eden Area.

In addition to the programs and plans mentioned above, the Alameda County Household Hazardous Waste Program is operated as a partnership between the Alameda County Department of Environmental Health and the Alameda County Waste Management Authority. Eden Area residents may take their household hazardous waste to any of three collection facilities located in either Hayward, Oakland or Livermore. Approximately 233,982 tons of waste (or 9.53 percent of total non-commercial hazardous waste) was received by the Alameda County Household Hazardous Waste program from households living in Eden Area zip codes in fiscal year 2003.[1]

[1] Zip codes were used to define the area because this is the level at which the Alameda County Waste Management Authority Household Hazardous Waste Program collects data. Zip codes used to approximate the Eden Area were 94541, 94546, 94578 and 94580. Personal Communication with William Pollock, Alameda County Waste Management Authority, Household Hazardous Waste Program, to DC&E on November 9, 2004.

A search of the DTSC's EnviroStor database, which contains information on properties in California where hazardous substances have been released or where the potential for a release exists, did not identify any Superfund (NPL) or State Response sites within the Eden Area.[2]

In addition to hazardous materials used and generated within the Eden Area, hazardous materials and waste also pass through the community enroute to other destinations via the railroads and major regional routes, including I-880, I-580 and I-238. The County does not have direct authority over the transport of hazardous materials on the major roads and rail lines within the Eden Area. As mentioned above, transportation of hazardous materials by truck and rail is regulated by the DOT.

3. Hayward Executive Airport (HWD)

Hayward Executive Airport is a full service airport located just east of Hesperian Boulevard in the City of Hayward, outside of the geographical boundaries of the Eden Area. HWD has been serving the public, private and military sector since its construction in 1942. Over the years, ownership of the airport has been transferred from the United States Army to local city government control. Currently the airport is operated by the City of Hayward and provides services ranging from fueling, flight training, aircraft rental, avionic sales, maintenance for aircrafts to hangar and aircraft tie-down rentals.[3]

Airspace in the vicinity of the Hayward Executive Airport is impacted by the number of airports and the high level of aircraft activity in the Bay Area. The Airport is located within Class D airspace, which is controlled airspace surrounding airports with an air traffic control tower. The Class D airspace for the Air-

[2] California Department of Toxic Substances Control's website. http://www.envirostor.dtsc.ca.gov/public/search.asp?cmd=search&city=&zip=94541,%2094546,%2094578,%2094580&county=&federal_superfund=True&state_response=True&voluntary_cleanup=&school_cleanup=&display_results=Report&pub=True, accessed on June 27, 2006.

[3] Coffman Associates, Inc., 2002, *Airport Master Plan*, pages 1-3 to 1-4, Hayward: Hayward Executive Airport.

port extends approximately four miles to the northeast and southwest and one nautical mile northwest terminating at the Class C airspace surrounding Oakland International Airport. The Class D airspace also extends approximately five miles to the east to accommodate the primary arrival routes for the instrument approach procedures to the airport.[4]

HWD falls under the jurisdiction of the Alameda County Airport Land Use Commission (Alameda County ALUC) and is subject to its regulations concerning hazards to people living and/or working in the vicinity of the airport.[5] Alameda County ALUC also has the following powers per the California Public Utilities Code 21674:[6]

- To assist local agencies in ensuring compatible land uses in the vicinity of all new airports and in the vicinity of existing airports to the extent that the land in the vicinity of those airports is not already devoted to incompatible uses.
- Local agencies whose general plan includes areas covered by an ALUC plan must submit its general plan, or any specific plans, zoning ordinances, or building regulations that affect the area covered by the ALUC plan, to the commission.

Portions of the Plan Area are within HWD's Traffic Pattern Zone, which include San Lorenzo, Hayward Acres, Cherryland and Mt. Eden. San Lorenzo is further impacted as it is within HWD's Runway Protection, Inner Safety, Inner Turning and Outer Safety Zones. The California Land Use Safety Zones for HWD are shown in Figure 4.5-1. Potential risks associated with hazards resulting from this close proximity to HWD are discussed below, under the Impact Discussion Section.

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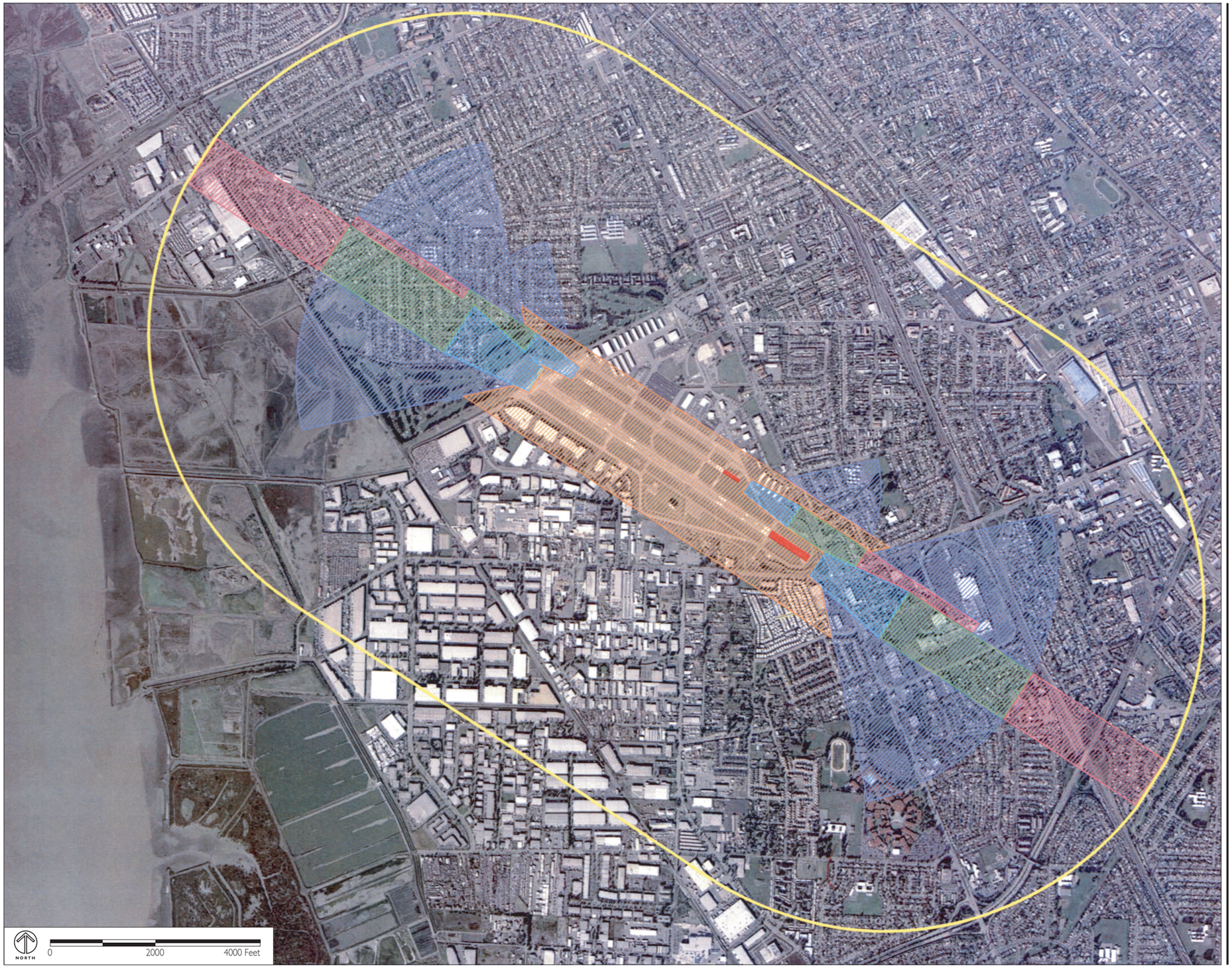
[4] Coffman Associates, Inc., 2002, *Airport Master Plan*, pages 1-17 to 1-19, Hayward: Hayward Executive Airport.

[5] Coffman Associates, Inc., 2002, *Airport Master Plan*, page 5-17, Hayward: Hayward Executive Airport.

[6] Aviation Noise Law's website. http://home.netvista.net/~hpb/aluc.html, accessed on June 27, 2006.



Source: Hayward Executive Airport Report, Airport Master Plan, Aril 2002

FIGURE 4.5-1

CALIFORNIA LAND USE SAFETY ZONES

4. Emergency Preparedness

Emergency preparedness is an important aspect of minimizing potential damage that may occur in the event of a disaster. Public education, pre-determined evacuation routes and coordination among emergency response agencies are key components to an effective strategy for dealing with any potential hazard.

a. Background Information

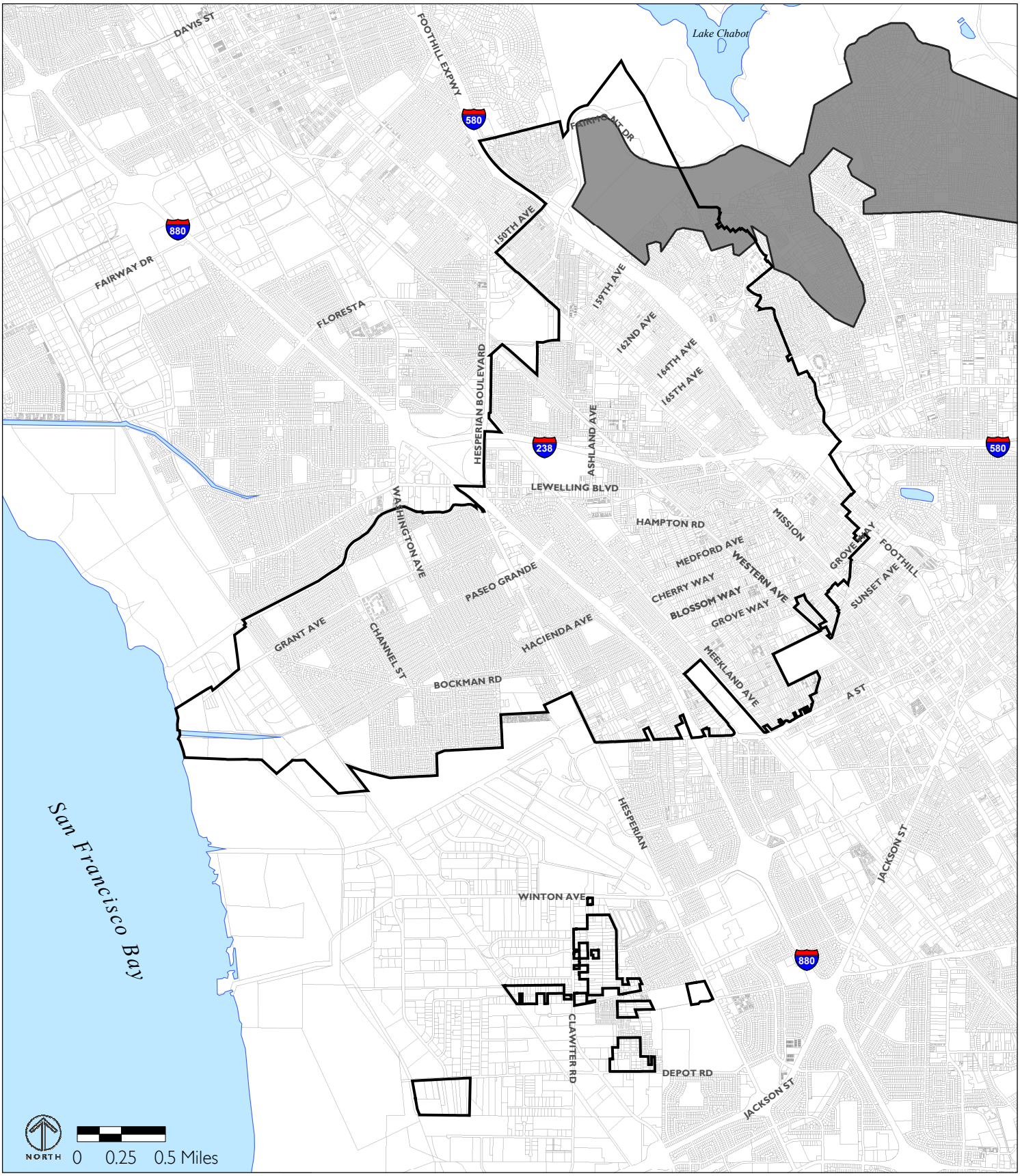
As required by State law, Alameda County has established emergency preparedness procedures to be prepared for and respond to a variety of natural and man-made disasters that could confront the community. Emergency and disaster planning is primarily conducted through the Public Health Department, in collaboration with other County departments. Resources are also available to the public at the Department of Public Health website.[7]

5. Wildland Fire Hazards

The Eden Area is faced with risk associated with wildland fires. The hillside area in and around the Fairmont Campus is most at risk for wildland fires. This area is of particular concern because of the proximity of housing and other development to large amounts of highly flammable vegetation. Planning, defensive siting and building techniques are essential tools to manage the risks to adjacent development.

In response to the Oakland Hills fire in 1991 and the passage of the AB 337 Bates Bill (Government Code Sections 51175 to 51189), the State mapped areas considered Very High Fire Hazard Severity Zones (VHFHSZ). VHFHSZ's were identified by the California Department of Forestry and Fire Protection (CDF), in cooperation with local authorities, through a ranking process based on fuels, topography, dwelling density and weather. The VHFHSZ identified in the Eden Area is shown in Figure 4.5-2.

[7] Alameda County Public Health Department website. http://www.acphd.org/, accessed on April 14, 2005.



Source: California Department of Forestry and Fire Protection, 2003.

FIGURE 4.5-2

Study Area Boundary

Very High Fire Hazard Severity Zones

WILDLAND FIRE RISK ZONES

Local jurisdictions have the option to adopt VHFHSZs in their jurisdictions or to add or subtract areas from the identified zones. They also may adopt the model ordinance developed by the State Fire Marshal for the zones, indicate whether or not they already "meet or exceed" the Bates minimums, or pursue a combination of these.[8]

Alameda County has not yet adopted the State's identified VHFHSZ, which allows for more stringent enforcement by jurisdictions that have less stringent existing codes, but can also negatively affect residents' insurance rates. The County already has a stringent fire enforcement program and building standards, so adoption of the VHFHSZ may not provide for more stringent fire protection regulations, but may increase insurance rates. As of April 2005, the County's Community Development Agency and Fire Department staff was collaborating to ensure that the fire enforcement program, building standards, vegetation management program and associated ordinances to manage wildland fires were consistent with the intent of AB 337.[9]

B. Standards of Significance

The proposed project would have an impact on hazardous materials if it would:

- Create a significant hazard to the public or the environment through the routine transport, use or disposal of hazardous materials.
- Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.
- Emit hazardous emission or handle hazardous materials, substances or waste within one-quarter mile of an existing or proposed school.

[8] Very High Fire Hazard Severity Zones Data Documentation accessed via CERES Natural Hazard Disclosure Statement pages on wildfire hazards Actual text from: ftp://ftp.ca.gov/pub/gis/nhdf/bates.txt accessed on March 29, 2005.

[9] County of Alameda, 2006, *Eden Area Draft General Plan*, page 7-22.

- 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 would create a significant hazard to the public or the environment.
- For a project within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people living or working in the project area.
- For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people living or working in the project area.
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.
- 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.

C. Impact Discussion

As a result of increased development proposed under the General Plan, inevitably more hazardous materials could be used, transported and disposed of within the project area. Also, the risk for wildland and urban fires in the northeast corner of the Eden Area, as well as the potential for the proposed plan to interfere with Alameda County emergency preparedness plans due to future development and population growth, remains a potential risk. However, the General Plan contains goals, policies and actions which attempt to minimize the risks posed to the Eden Area by hazardous material utilization and wildland fires. While at the same time addressing the issue of emergency preparedness.

1. Hazardous Materials and Waste

The following specifically address the potential hazards associated with the use, transportation and disposal of hazardous materials and waste within the Eden Area.

As mentioned above, nearly all businesses and residents in the Eden Area generate some amount of hazardous wastes. Although the proposed plan could allow for expansion of light industrial uses, those businesses using hazardous materials in large quantities would be regulated extensively by federal, State, regional, County and local agencies.

To that effect, Goal SAF-5 of the proposed plan seeks to minimize Eden Area residents' from exposure to the harmful effects of hazardous materials and waste. This Goal is supported by various policies and action, one of them, Policy 1 of this Goal, being the requirement of the County to strive to reduce hazardous waste using the following hierarchy of waste management strategies:

- Reduce the sources of hazardous waste.
- Recycle and reuse hazardous waste.
- Treat or incinerate residual hazardous waste.
- Place reduced or untreatable waste in secure land disposal units.

Additionally, under Policy P6 of this Goal, developers would be required to conduct the necessary level of environmental investigation to ensure that soil, groundwater and buildings affected by hazardous material releases from prior land uses and lead or asbestos in building materials will not have a negative impact on the natural environment or health and safety of future property owners or users. This would be required to occur as a pre-condition for receiving building permits or planning approvals for development on historically commercial or industrial parcels.

As for the promotion of safe transport of hazardous materials through the Eden Area, Policy P7 of this Goal would require the implementation of the following measures:

- Maintain formally-designated hazardous material carrier routes to direct hazardous materials away from populated and other sensitive areas
- Prohibit the parking of legally designated empty or full vehicles marked for transporting hazardous materials on County streets.

- Require new pipelines and other channels carrying hazardous materials to avoid residential areas and other immobile populations to the extent possible.

Finally, for any large generators of hazardous waste, emergency response plans would be required to be submitted as part of all use applications (Policy P8 of this Goal).

Considering the limited amount of hazardous materials that will be used or produced with the Eden Area, along with all the existing regulations governing these type of materials, this impact is considered less than significant.

2. Proximity to Schools and Other Sensitive Receptors

The Eden Area General Plan does not include plans to build any facilities that would produce or emit hazardous materials near any sensitive receptors such as schools, hospitals, homes for the elderly or daycare facilities. The proposed plan, though, does provide a policy that would require the adequate separation be provided between areas where hazardous materials are present and sensitive uses, such as schools, residences and public facilities (Policy P5 under Goal SAF-5A).

Therefore, the implementation of the General Plan does not pose a significant risk to any sensitive receptors within the project area.

3. Located on a Listed Site

As mentioned previously in this section, there are no Superfund or other hazardous materials sites in the Eden Area that currently require DTSC action. As a result, there is a *less than significant* impact associated with hazardous materials sites, as compiled pursuant to Government Code Section 65962.5.

However, there are many properties in the Eden Area where past uses could have produced localized contamination or concentrations of hazardous substances. Use or storage of petroleum-based or inorganic chemicals, solvents, or other substances may have left residues in site soils, which could expose people to those substances if the site were to be redeveloped or excavated. Although no

inventory of such sites has been compiled, many industrial uses have been known to exist within the Plan Area.

To address these concerns, the proposed General Plan would require developers to conduct the necessary level of environmental investigation to ensure that soil, groundwater and buildings affected by hazardous materials releases from prior land uses and lead or asbestos in building materials will not have a negative impact on the natural environment or health and safety of future property owners or users. This would be required to occur as a pre-condition for receiving building permits or planning approvals for development on historically commercial or industrial parcels (Policy P6 under Goal SAF-5). This policy, along with those under Goal SAF-5,

4. Located Near a Public or Private Airport

Portions of Eden Area are within two miles of HWD and implementation of the proposed General Plan would result in further development within two miles of HWD. As a result, there are potential impacts related to airports or airstrip hazards. However, Action A.1 under Goal LU-11 encourages the creation of an incentive program to encourage property owners to redevelop non-conforming uses into uses consistent with the land use designation for the parcel. Furthermore, individual's projects that affect the area within HWD's airport planning boundary established by the Alameda County Airport Land Use Commission (ALUC) would be subject to review by the Commission.[10] However, unless a project is proposed at either end of the airport's runways, it is unlikely to impact the airport and its operations.[11] Nevertheless, the Commission would assure all public safety measures, including setbacks and height requirements, would be met by proposed projects, in accordance to the Alameda County Airport Land Use Policy Plan, which is currently being comprehensively updated by the County.

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[10] Coffman Associates, Inc., 2002, *Airport Master Plan*, page 5-17, Hayward: Hayward Executive Airport.

[11] Shiner, Brent. Airport Manager, Hayward Executive Airport, City of Hayward. Meeting with José Moreno, DC&E, July 20, 2006.

As a result of these policies and existing regulations, implementation of the proposed General Plan would reduce any potential impacts on safety related to operation of the airport or airstrip to a *less than significant* level.

5. Emergency Preparedness

The proposed plan could result in new development and population growth, which could affect implementation of adopted emergency response and evacuations plans during disasters. Emergency preparedness is an important aspect of minimizing potential damage that may occur in the event of a disaster. Public education, predetermined evacuation routes and coordination among emergency response agencies are key components to an effective strategy for dealing with any potential hazard.

Recognizing the need to plan for adequate emergency response to protect existing and future development in the Eden Area, the proposed plan includes Goal SAF-6. This Goal would seek to prepare and keep current County emergency procedures in the event of potential natural or manmade disasters. Supporting this Goal are Policy P1 and P2. Policy P1 would require the County to coordinate with emergency response agencies in adjacent jurisdictions to prepare for natural and manmade disasters. While Policy P2 would require for adequate emergency water flow, emergency vehicle access and evacuation routes to be incorporated into any new development prior to project approval.

Taken together, proposed policies and actions would reduce the potential emergency preparedness impact to a less than significant level.

6. Wildland Fires

As discussed earlier, certain areas of the Eden Area are considered to be of high risk to wildland fires. Of particular concern is the hillside area in and around the Fairmont Campus because of the proximity of housing and other development to large amounts of highly flammable vegetation. The CDF identifies this area as

being in a moderate to high Fire Hazard Severity Zone.[12] Other areas of risk are those with steep slopes, narrow roads and hilly terrain.

To address these concerns, the County will be required to follow the Wildland Fire Safety requirements contained in the *Alameda County fire Protection Master Plan* when approving private and public development projects (Policy P3 under Goal SAF-4). Additionally, the County will be required to restrict development as necessary in areas with steep terrain in order to ensure fire safety (Policy P4 under Goal SAF-4). The proposed plan also addresses public work projects by requiring the County to incorporate drought-resistant and fire-resistant plants into such projects, especially in areas subject to wildland fires (Policy P6 under Goal SAF-4). Finally, Action A2 under Goal SAF-4 calls for the maintenance of a current map of areas subject to wildland fires.

The identified goal and policies under the General Plan, which are aimed at minimizing loss of life and property from wildfires, would reduce potential impacts to a less than significant level.

D. Impacts and Mitigation Measures

Given the policies and goals outlined in the Eden Are General Plan, no impacts are identified, thus no mitigation measures are required.

[12] California Department of Forestry and Fire Protection's website, Fire Hazards Severity Zones Map, (http://frap.cdf.ca.gov/webdata/maps/statewide/ fhszmap.pdf), accessed June 27, 2006.

4.6 AESTHETICS

This section summarizes information on the visual and aesthetic resources of the Eden Area and provides an evaluation of the effects the proposed General Plan may have on these resources.

A. Existing Setting

This section provides a general description of the existing visual character of the Eden Area.

1. Development Characteristics

The Eden Area is characterized by a diverse mix of uses and development patterns that resulted from the rapid transformation of an agricultural and manufacturing based area to residential and commercial based area during the mid-20th Century.

a. Post-War Bungalow Neighborhoods

A relatively large percentage of the Eden Area contains single-family bungalows dating from the middle of the 20th century. The homes are built on a traditional street grid with small block sizes, uniform street trees, standard street widths, and sidewalks. Much of San Lorenzo and parts of Cherryland and Ashland contain this traditional development pattern.

b. Cul-De-Sac Subdivisions

Larger subdivisions of single-family neighborhoods that were built in the past few decades can be found throughout the Eden Area. El Portal Ridge contains a number 1960s and 1970s subdivisions of ranch style and split-level homes along groupings of curvilinear streets. Newer subdivisions of single-family homes from the 1980s and 1990s can be found near the Bayfair BART station in Ashland and along Hesperian Boulevard in Hayward Acres and San Lorenzo. These newer subdivisions tend to break from the street grid and contain internal streets with a few access points to collector or arterial streets. There are also a minimal number of pedestrian connections with surrounding

uses. Homes in this subdivision tend to be multi-story, single-family homes on small lots.

c. Mini-Subdivisions

Cherryland, Ashland and Hayward Acres contain mini-subdivisions of up to six single-family homes located on former agricultural sites. These mini-subdivisions have a single access point to the public street and the homes are centered on an alleyway or driveway.

d. Apartment Complexes

Numerous apartment complexes, usually two stories in height dating from the 1960s and 1970s, are commingled with single-family housing throughout much of Ashland, Cherryland, Hayward Acres, and El Portal Ridge. These buildings are often located on large, narrow, deep lots. Many of the buildings are separated from the street by landscaping or parking lots. In parts of Ashland, many of the multi-family parcels are fenced to restrict access.

e. Large Lot Single Family

In addition to multi-family housing, there are numerous locations in Cherryland and Mt. Eden where there are single-family homes located on large lots. Some of these homes have fallen into disrepair and thus have added to the visual blight of the area.

f. Corridor Commercial Development

The major corridors of East 14th Street/Mission Boulevard, Hesperian Boulevard, Lewelling Boulevard, West 'A' Street, and Foothill Boulevard contain a variety of strip and stand-alone commercial buildings. Most of these buildings are set back from the street and have little relationship to one another. Furthermore, a large number of the parcels are vacant or contain buildings that are underutilized and in a state of disrepair.

g. Campus Development

The Fairmont Complex is a unique part of the Eden Area because it is functionally separate from the rest of the sub-areas. The public buildings are situated in a campus-like setting and access is limited to several locations on Foothill Boulevard and Fairmont Drive. Buildings on the campus include:

- Fairmont Hospital (closed facility)
- Alameda County Sheriff's substation
- Alameda County Animal Shelter
- Alameda County Juvenile Justice Facility

h. Industrial

Industrial uses are spread throughout the Eden Area and are concentrated in several locations including Depot and Dunn Roads in Mt. Eden, at the western end of Grant Avenue in San Lorenzo, and on the southern part of Meekland Avenue in Cherryland.

2. Blight

The Eden Area Redevelopment Plan and its Environmental Impact Report were adopted in July 2000 and, according to the report, a large percentage of the Eden Area is considered to be blighted. Under California redevelopment law, a blighted area contains physical or economic conditions that can only be improved with governmental assistance. Some of the physical and economic conditions include buildings with code violations, incompatible land uses, irregular parcel sizes, high business vacancies, an excess of bars, liquor stores and/or adult business and a high crime rate. For an area to be considered blighted, the blight must be prevalent and substantial. However, the determination does not mean that every property is blighted.

Based on this definition, there are many locations in the Eden Area that are blighted. Ashland has one of the largest concentrations of blight in the entire Eden Area, as identified in the recent redevelopment plan area formation process. There are numerous buildings that do not conform to the current building code, land uses that pre-date current zoning, and irregular parcel sizes. There also are a considerable number of deteriorated and poorly main-

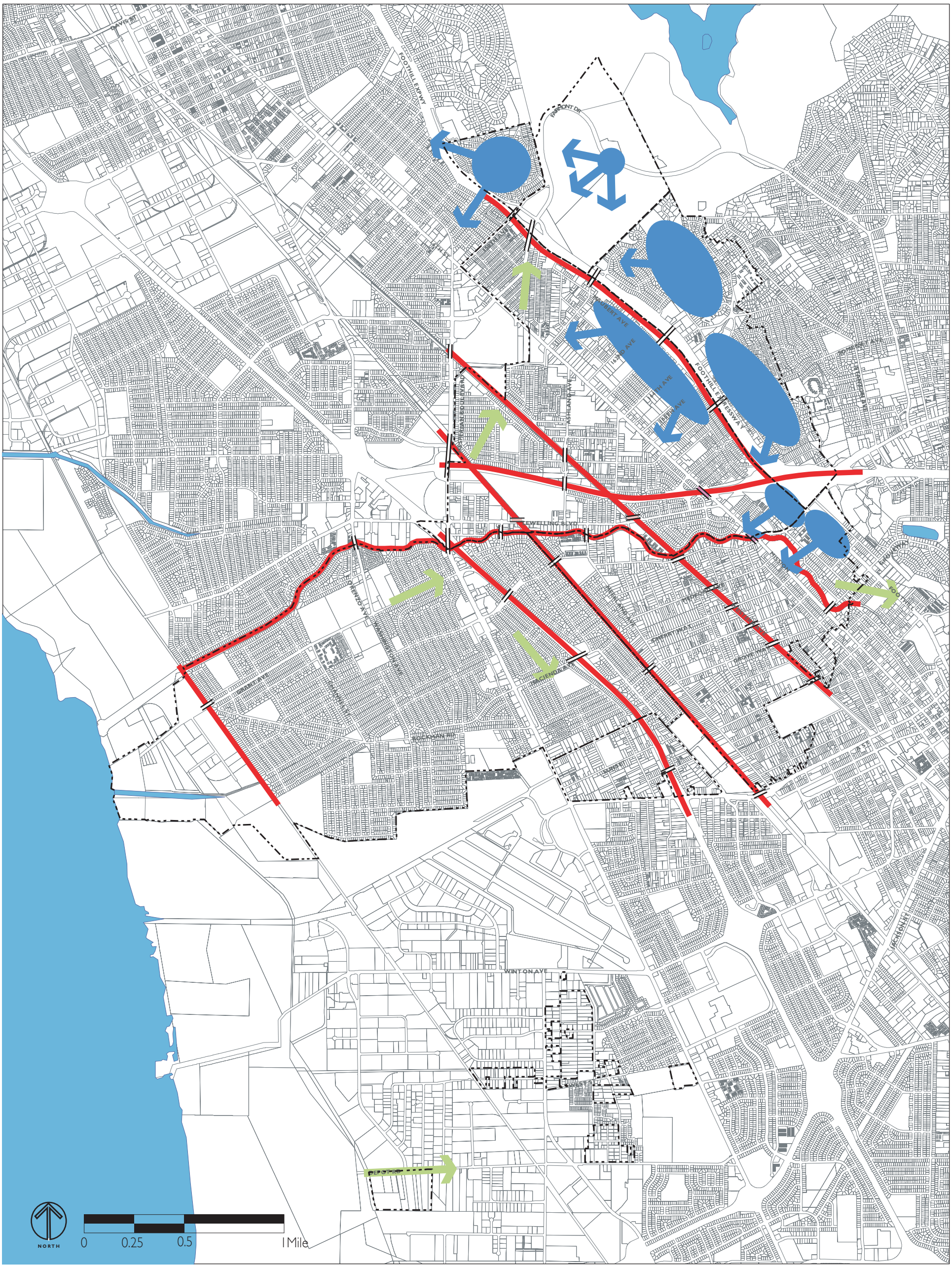
tained properties, as well as unmitigated impacts from freeways and railroad infrastructure. Finally, the large block sizes that result from the area's agricultural past add to the area's incoherence and diverse mix of uses. The most blighted areas in Ashland include East 14th Street and the area between East 14th Street and Interstate 580.

Much of Hillcrest Knolls, Hayward Acres, and Mt. Eden could be considered blighted. In Hillcrest Knolls the blight is due to the age and disrepair of properties and the high number of building and zoning code violations. In Hayward Acres, the blight is due to the disrepair of the buildings and the dissimilar mix of building types and land uses. For example, there is a mix of single-family homes, apartment buildings, retirement communities, mobile home parks and retail development in close proximity. Mt. Eden contains an incompatible mix of single-family, commercial and industrial uses on large, deep lots. Some of the buildings and parcels are in disrepair, there are numerous building code violations, and none of the residential uses are connected to the municipal sewer system.

Cherryland and El Portal Ridge also contains pockets of blight including the older strip commercial development along Foothill and Mission Boulevards, narrow, deep lots, and the incompatible mix of uses on the southern part of Meekland Avenue.

3. Barriers

The transportation corridors which run through the Eden Area have created physical barriers to uniform and cohesive development patterns. As shown in Figure 4.6-1 three rail lines run north-south through the Eden Area, and while most of the crossings are at-grade, only a limited number of streets cross the tracks. BART operates above grade along Western Avenue in Cherryland and Wagner Avenue in Ashland. While the BART tracks generally do not inhibit movement, they create noise and are a visual barrier.



Barriers and Openings

- Barrier
- Opening

Views

- Views to Hillsides
- Views to San Francisco Bay

FIGURE 4.6-1

VIEWS AND BARRIERS

Three interstate highways, I-880, I-580 and I-238 also run through the Eden Area. These highways are major barriers for mobility between Eden sub-areas, are a source of noise and provide visual barriers.

Finally, San Lorenzo Creek, which runs in a fenced-off culvert, divides Ashland from Cherryland and San Lorenzo from the City of San Leandro. While there are bridges across the creek, it is generally a barrier to pedestrian and vehicular movement.

4. Views

One of the unique aspects of the Eden Area is its location between the San Francisco Bay and the East Bay Hills. Due to the topography of the area, views of these two natural features are possible from various locations. These views provide a sense of identity and pride to Eden Area residents and can be used as a way-finding tool when traveling through the area. The primary locations of views are mapped in Figure 4.6-1.

There are far field views of the San Francisco Bay from many of the upland areas east of East 14th Street/Mission Boulevard. Many west-facing homes in Hillcrest Knolls and El Portal Ridge have views of the Bay and the Peninsula. However, due to the lack of elevation, much if not all of the San Lorenzo area to the west of Interstate 880 does not have any views of the Bay even though it is the area closest to the Bay.

The low elevations in the western part of the Eden Area does allow for views of the East Bay hills from many locations. Some of the most spectacular views of the hills are from Grant Avenue (looking east), Hesperian Boulevard (looking south), and Mission Boulevard (looking east and south).

5. Pedestrian Environment

As part of the community character analysis for the General Plan process, the quality of the pedestrian environment was examined. In general, a high quality pedestrian environment has sidewalks on at least one side of the street that are separated from traffic by a planting strip and/or parked cars, street trees

that shade pedestrians and provide a visual canopy, visible and safe crosswalks, and a consistent urban development pattern that provides visual continuity (i.e. buildings that form a street wall).

Much of the Eden Area lacks the elements that define a high quality pedestrian environment. The locations that provide the best pedestrian experience are the older residential neighborhoods in San Lorenzo and Cherryland, and the single-family residential neighborhoods in El Portal Ridge. These areas generally have a nice tree canopy, consistent building setbacks, relatively narrow streets, and some speed bumps for slowing traffic. However, in some locations, sidewalks are inadequate or nonexistent and rolled curbs allow vehicles to infringe on pedestrian space.

Other locations in the Eden Area have only the most basic of pedestrian amenities. The major arterials (East 14th Street/Mission Boulevard and Hesperian Boulevard) have sidewalks but there is little or no buffering of the pedestrian environment from fast-moving traffic. Furthermore, numerous curbcuts create a dangerous situation for pedestrians. The visual blight created by large signs, overhead power lines, vacant lots and buildings in disrepair also detracts from the experience. In some residential areas, there are no sidewalks, curbs or gutters and pedestrians must walk in the street with traffic.

B. Standards of Significance

The Eden Area General Plan would have a significant impact to visual and design factors if it would:

- Have a substantial adverse effect on a scenic vista.
- Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings and historic buildings within a state scenic highway.
- Substantially degrade the existing visual character or quality of the site and its surroundings.

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

C. Impact Discussion

The implementation of the propose General Plan would allow for development and redevelopment within the Eden Area. The Eden Area currently consists of areas which have exceptional views of the East Bay Hills as wells as the San Francisco Bay. Development under the proposed General Plan has the potential to interrupt views of natural features and other visual resources, which would reduce the aesthetic value of the area. Furthermore, new development has the potential to increase the amount of light and glare within the Eden Area.

At buildout of the General Plan in 2025, an estimated 5,691 new units would be allowed for development, which would increase the population by an estimated 16,560 people within the Eden Area. Along with residential development, an additional 300 industrial jobs, an estimated 3,400 commercial jobs and approximately 2,100 research and development/office jobs are also projected within the life of the proposed plan.

A certain amount of development that would occur under the General Plan would be infill of residential and commercial parcels in sections of the Eden Area that are already extensively developed. The General Plan also envisions substantial amount of new development would occur within areas that are currently vacant or undeveloped. Both the introduction of new or redeveloped uses in existing community areas, and new development on currently vacant lands has the potential to alter the visual character and qualities of those places, and potentially to degrade the community's aesthetic character. However, the General Plan contains numerous policies and actions that would work in conjunction with existing County design and development standards to ensure that new development generally complements the existing aesthetic environment of the community and adjacent areas, impair scenic

vistas, affect scenic corridors, or worsen conditions of light and glare, and to avoid significant impacts to these resources.

1. Scenic Vistas

Scenic views and vistas, including those of the East Bay Hills and of the San Francisco Bay, along with undeveloped or minimally developed open space within the Eden Area, contribute strongly to the visual character of the Eden Area. The General Plan contains numerous goals, policies and actions intended to preserve these resources into the future. For example, Goal LU-12 seeks to improve the visual quality of the Eden Area. In regards to scenic views and vistas, two policies are of particular importance. Policy P1 of this Goal would highly encourage the County not to approve projects that have a substantial adverse effect on scenic vistas, substantially damage scenic resources, or substantially degrade the existing visual character or quality of the Eden Area. Additionally, when reviewing development proposals, the County would be highly encouraged to ensure that projects do not diminish views of natural features along public rights-of-way. Natural features are both within and around the Eden Area and include the San Francisco Bay and the East Bay Hills (Policy P3 of this Goal).

Taken together, the goals, policies and actions under the proposed plan would diminish the environmental impact to scenic vistas to a less than significant level.

2. Scenic Resources

As previously mentioned, there are no State-designated scenic highways in or through the Eden Area, according to the California Department of Transportation. As a result, the General Plan would not impact visual resources within a State-designated scenic highway.

3. Visual Character and Quality

As noted above, views to San Francisco and the East Bay Hills are found in the Eden Area. Implementation of the proposed General Plan could result in development which could block these views, thus degrading visual character

of the Eden Area. Within the Eden Area, many communities lack cohesive visual identity as a result of development controls, development patterns, physical barriers and lack of investment in building upkeep. Although portions of the Eden Area are afflicted by blight, the Eden Area has some visual character that are worth protecting under the proposed General Plan. The proposed General Plan includes a number of goals, policies and actions addressing the aforementioned issues and addressing controls on new development.

For example, Goal LU-4 would seek to preserve the quality and character of existing Neighborhoods in the Eden Area. In support of this, Policy P2 of this Goal would highly encourage that new residential construction be of a high-level of craftsmanship, and use exterior materials and façade designs that enhance the appearance of each Neighborhood. Additionally, the development of "gated' communities or the gating of already developed Neighborhoods or subdivisions would be highly discouraged (Policy P3 of this Goal). Furthermore, permit applications for alterations, additions and infill development would be required to be reviewed to ensure that they enhance the character and quality of neighborhoods (Policy P6 of this Goal).

Other goals within the proposed plan place higher emphasis on the visual quality of the Eden Area. Goal LU-10 and its supporting policies and actions would seek to ensure that the Eden Area remains attractive and free of public nuisances through enforcement and community involvement programs. Policy P1 would highly encourage that all housing and businesses to be adequately maintained and, where required, rehabilitated to protect the health and safety of Eden Area residents and visitors. Policy P2, P4, P5 and P6 would place requirements on the County ranges from maintaining building inspection and code enforcement procedures to maintaining graffiti removal and weed abatement programs throughout the Eden Area. Lastly, Policies P5 and P6 under Goal LU-12 would require new development and the County to incorporate comprehensive landscaping efforts, particularly tree planting along public right-of-ways, in order to improve aesthetics and livability within the Eden Area community.

Given these and the other General Plan goals, policies and actions to mitigate potentially adverse impacts of new development, the General Plan would result in less than significant adverse impacts on the visual character and quality of the Eden Area.

4. Light and Glare

Development and/or redevelopment under the proposed General Plan could introduce new sources of light and glare. Light and glare could have a negative impact, and further degrade the visual quality of the Eden Area. The policies and goals listed above do not explicitly refer to light and glare. However, light and glare is expected to be considered when the County implements the policies and actions under Goal LU-12, which seeks to improve the overall visual quality of the Eden Area. Based on the implementation of Goal LU-12, and site-specific environmental evaluation of each proposed project, any impacts associated with light and glare would be sufficiently addressed.

The policies and actions that implement this goal would reduce potentially significant impacts of light and glare on the Eden Area community to a less than significant level.

D. Impacts and Mitigation Measures

Since no impacts were identified, no mitigation measures are required.

4.7 CULTURAL RESOURCES

This section summarizes information on the cultural resources in the Eden Area and provides an evaluation of the effects the proposed General Plan would have on these sensitive resources.

A. Existing Setting

This section provides a general description of the existing cultural resources within the Eden Area, including the regulatory setting and historic overview of the area.

1. Regulatory Framework

There are several federal, State and local laws and regulations applicable to historical and architecturally significant resources, as well as paleontological and archaeological resources. The key regulations are discussed briefly below.

a. National Historic Preservation Act (1966)

The National Historic Preservation Act of 1966 (NHPA) is the most influential federal law dealing with historic preservation. In addition, Congress has enacted numerous other statutes that affect historic properties.

One of the most important provisions of the NHPA is the establishment of the National Register of Historic Places, the official designation of historical resources. Districts, sites, buildings, structures and objects are eligible for listing in the Register. Nominations are listed if they are significant in American history, architecture, archeology, engineering and/or culture. The National Register is administered by the National Park Service. To be eligible for the NRHP, a property must be significant under criterion A (history), B (persons), or C (design/construction); possess integrity; and ordinarily be 50 years of age or more.

Listing in the National Register does not entail specific protection or assistance for a property, but it does guarantee recognition in the planning for Federal or federally assisted projects (see Section 106), eligibility for Federal

tax benefits, and qualification for Federal historic preservation assistance.[1] The National Register is influential beyond its statutory role because it achieves uniform standards of documentation and evaluation. Additionally, project effects on properties listed in the National Register must be evaluated under CEQA.[2]

b. California Register of Historic Resources

The California Register of Historical Resources establishes a list of those properties which are to be protected from substantial adverse change (Public Resources Code Section 5024.1). A historical resource may be listed in the California Register if it meets any of the following criteria:

- It is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.
- It is associated with the lives of persons important in California's past.
- It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic value.
- It has yielded or is likely to yield information important in prehistory or history.

The Register includes properties that are listed or have been formally determined to be eligible for listing in the National Register, State Historical Landmarks and eligible Points of Historical Interest. Other resources require nomination for inclusion in the Register. These may include resources contributing to the significance of a local historic district, individual historical resources, historical resources identified in historic resource surveys conducted in accordance with State Historic Preservation Office (SHPO) procedures, historic resources or districts designated under a local ordinance consis-

[1] The National Parks Service's website. http://www.cr.nps.gov/local-law/nhpa1966.htm. Accessed on February 28, 2006.

[2] 2006 CEQA Guidelines. 15064.5(c). page 126.

tent with Commission procedures, and local landmarks or historic properties designated under local ordinance.[3]

c. California State Health and Safety Code, Section 7052 and 7050.5

Section 7052 of the California State Health and Safety Code states that the disturbance of Native American cemeteries is a felony. Section 7050.5 requires that construction or excavation be stopped in the vicinity of discovered human remains until the coroner can determine whether the remains are those of a Native American. If determined to be Native American, the coroner must contact the California Native American Heritage Commission (NAHC).[4]

d. California Native American Historical, Cultural and Sacred Sites Act

The California Native American Historical, Cultural and Sacred Sites Act applies to both State and private lands. The Act requires that upon discovery of human remains, construction or excavation activity cease and the county coroner be notified. If the remains are of a Native American, the coroner must notify the NAHC. The NAHC then notifies those persons most likely to be related to the Native American remains. The Act stipulates the procedures that the descendants may follow for treating or disposing of the remains and associated grave goods.[5]

e. California State Public Resource Code, Section 5097

Public Resources Code Section 5097 specifies the procedures to be followed in the event of the unexpected discovery of human remains on nonfederal land.

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[3] The California Environmental Resources Evaluation System's website. http://ceres.ca.gov/topic/env_law/ceqa/more/tas/page2.html. Accessed on February 28, 2006.

[4] The California Environmental Resources Evaluation System's website. http://ceres.ca.gov/nahc/statepres.html. Accessed on February 28, 2006.

[5] Arrowhead's website. http://www.arrowheads.com/burials.htm#CALIFORNIA. Accessed on February 28, 2006.

The disposition of Native American burial falls within the jurisdiction of the NAHC. Section 5097.5 of the Code states the following:

> "No person shall knowingly and willfully excavate upon, or remove, destroy, injure or deface any historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological site, including fossilized footprints, inscriptions made by human agency, or any other archaeological, paleontological or historical feature, situated on public lands, except with the express permission of the public agency having jurisdiction over such lands. Violation of this section is a misdemeanor."

As used in this section, "public lands" means lands owned by, or under the jurisdiction of, the State, or any city, county, district, authority, or public corporation, or any agency thereof. Consequently, Alameda County is required to comply with Public Resource Code Section 5097.5 for its activities.[6]

2. Historical Overview

The following information relating to the historical overview of the Eden Area contains information found in the Eden Area Existing Conditions Report, published by the County of Alameda on January 5, 2004.

The original occupants of the Eden Area were Native Americans of the Chochenyo-speaking tribes, which are related to the "Costanoan" language family. These populations were attracted to the creeks, lush vegetation and abundant game of the area. The first Spanish settlement occurred in 1797 with the establishment of Mission San Jose in the present Fremont area. Following the granting of its independence from Spain, Mexico controlled the area and awarded numerous grants of land.

[6]California Department of Transportation's website. http://www.dot.ca.gov/ser/vol1/sec3/physical/Ch08Paleo/chap08paleo.htm#statelaws. Accessed on February 28, 2006.

The gold rush and American annexation in the mid-nineteenth century, brought the first U.S. settlers to the area. In 1853, a landing was established at the mouth of the San Lorenzo Creek, providing regular freight and passenger schooner service to San Francisco and bringing new settlers into the area. The Eden Area quickly became a major agricultural district in the East Bay, specializing in fruit production. Agriculture-supporting industrial and manufacturing companies also began to locate in the area and several small trading centers, serving the agricultural industry, were established in Hayward, San Leandro and San Lorenzo.

Beginning in the 1870s, several railroad companies began to build rail lines through the area to provide service from Santa Cruz to the Oakland waterfront. By 1898, more fruit was shipped out of the San Lorenzo Railroad Station than from any other station in the state. During the 1890s, the Eden Area became part of the East Bay's rail transit network with construction of the Oakland, San Leandro and Hayward Electric Railway. Rail and transit lines stimulated new development. Farmlands and orchards were subdivided into town lots and much of the area became accessible for recreational users attracted by the agricultural beauty of the area. San Lorenzo became a small resort town that boasted two fine hotels in addition to the Grove Pavilion, which was a particularly popular regional destination for day trips.

Numerous immigrant groups joined earlier settlers as part of the growing population of the Eden Area. The largest numbers were Portuguese from the Azores, many of whom began to raise vegetables and poultry for commercial purposes. Eventually poultry raising and egg production became a major industry for the Eden Area and what would become the City of Hayward and the unincorporated town of Castro Valley.

German and Danish immigrants also settled in the area in the 1860s forming a community around Mt. Eden that was locally known as "Little Copenhagen." By the 1900s, a growing number of Japanese immigrants were also living in the area, working on farms as laborers and, in subsequent years, owning and operating plant nurseries.

In the 1920s, large ranches and farms were subdivided into one and two acre farm sets, more homes were built in the Eden Area and the landscape began to change to accommodate new roads for automobiles and trucks. East 14th Street/Mission Boulevard (then called County Road) became the major north-south highway for the East Bay.

Although population growth in the cities of Hayward and San Leandro slowed during the 1930s, the unincorporated area population continued to grow, due in large part to the strong demand for the area's agricultural products resulting from World War II. The Eden Area's role as a major agricultural area started declining in the late 1940s, when extensive farmlands began to be displaced by large, single-family subdivisions, and more recently by major commercial and industrial development.

The most ambitious and widely publicized development was the planned community of San Lorenzo Village, conceived and built by the Bohannon Organization, which greatly benefited from the support of the U.S. War Production Board. Government support meant that general restrictions on the availability of building materials for housing production were lifted for what was one of the largest home developments ever insured by the Federal Housing Agency. Bohannon used pre-assembly and streamlined mass construction methods, which they called "the California Method," to produce finished three-bedroom homes at a rate of one or more an hour between 1944 and 1945. The Village also included a shopping and entertainment center with a movie theater, restaurants, clothing stores, post office, fire house, the Homes Association office, a library and a community center.

Other important transportation infrastructure projects that have greatly affected the Eden Area include Interstate 880 (SR 17), which was opened in the late 1950s, and Highway 238 and Interstate 580, which were completed in the 1960s. These freeways effectively divided the Ashland, Cherryland and San Lorenzo communities, while providing improved automobile access to the greater Bay Region. In the 1970s, the Bay Area Rapid Transit System was

built as an elevated line over the Union Pacific Railroad tracks, and the Bayfair station was located at the north edge of Ashland, providing an additional level of transit service to the overall area.

3. Historic and Cultural Resources

The Eden Area has a rich history. Many cultures have left their imprint on the area beginning with the Native American people who were the original occupants and Spanish and Mexican settlers, American prospectors during the gold rush and the waves immigrants from all over the world that followed to reap the benefits of the rich agricultural land from which the Eden Area gets its name.

Several buildings in the Eden Area survive from the late 1880s.[7] More common in the area are the larger number of bungalows with low-pitched roofs and porches. There also are many examples of houses, such as the Bohannon Company houses in San Lorenzo and in the southeastern part of the Cherryland, built following Federal Housing Authority guidelines for small, inexpensive houses with modern amenities in the post World War II era. Several of the schools in the Eden Area are significant examples of public architecture from the 1940s and 50s and are among the few buildings that were designed by architects. In addition, there are several significant Quonset hut buildings, which are known for being preassembled, demountable and easily moved buildings which became quite popular during the WWII period. Several Quonset hut commercial buildings are found along East 14th Street/Mission Boulevard and the community church in San Lorenzo Village is made of three Quonset huts.

A comprehensive inventory of historic and cultural resources remains to be done in the Eden Area; however, there are historic resources listed on the National Register of Historic Places and the List of California State Points of

[7] Siegel & Strain Architects, 1998, *Preliminary Cultural Resources Survey,* April 30; Stock, Jody R. and Michael Corbett, 2000, *Unincorporated San Lorenzo Historic Building Survey, Summary Report*, November.

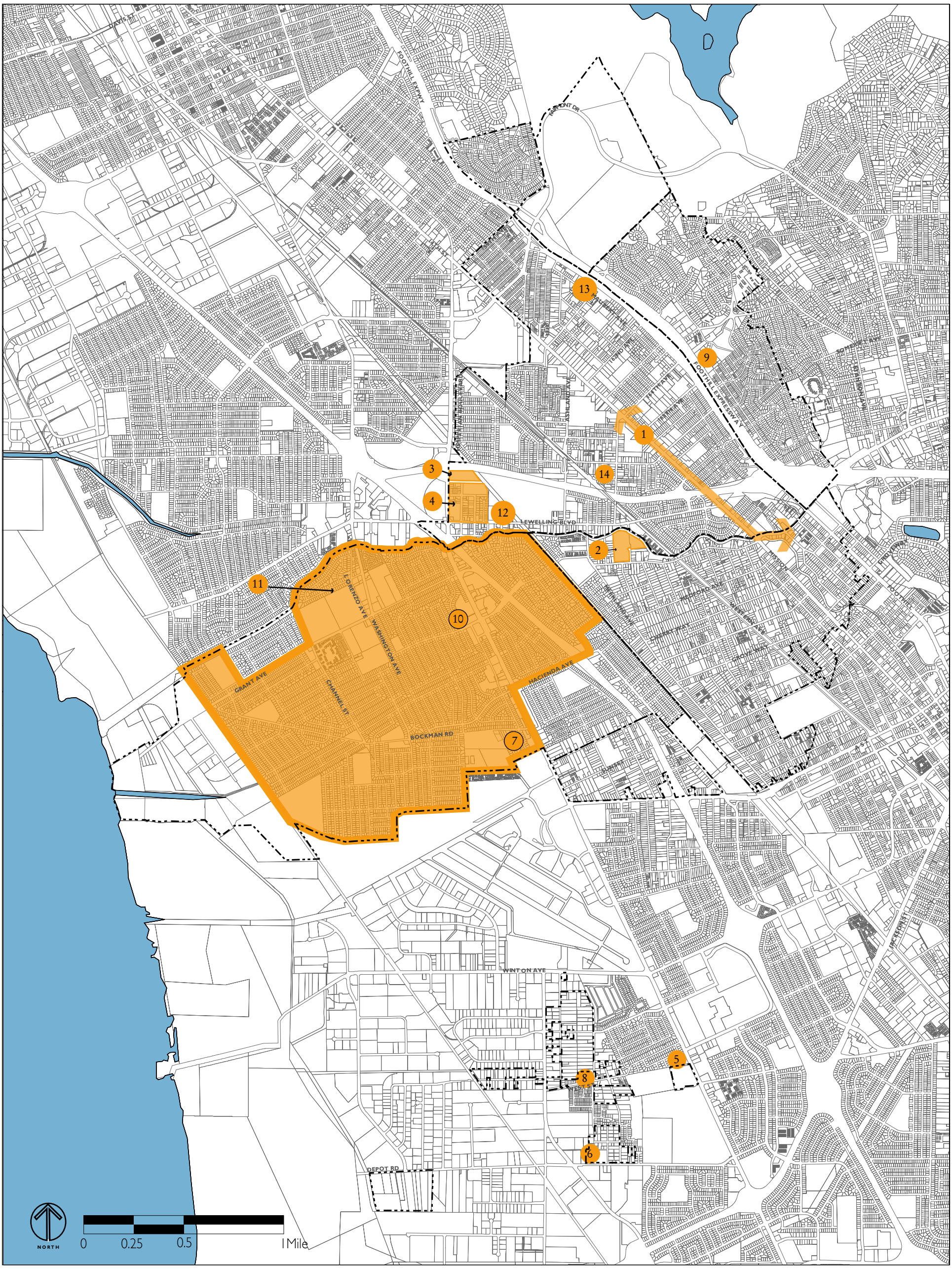
Historical Interest. These resources are listed below and mapped on Figure 4.7-1.

- The Meek Mansion and Carriage House in the Cherryland community is listed on the National Register. The surrounding Meek Estate Park is a designated California State Point of Historical Interest.
- San Lorenzo Cemetery, which is in the Four Corners area of Ashland, is a designated California State Point of Historical Interest (SPHI-ALA-021).

Additionally, professionally prepared inventories of potentially historic buildings, including identification of potentially significant properties, have been prepared for San Lorenzo and for portions of the Ashland and Cherryland Areas.[8] The following is a summary of potentially significant historical resources within San Lorenzo.

- The blocks adjacent to the San Lorenzo Cemetery, bordered by Sycamore Street, Albion Avenue, Hesperian Blvd. and Sharon Street contain a significant collection of historic buildings from the 1880s to 1920s and may be considered as remnants of the San Lorenzo Four Corners area.
- The Juan Bautista DeAnza Trail is generally thought to pass through the Ashland and Cherryland communities, probably crossing San Lorenzo Creek at the intersection of Mattox Road and Mission Boulevard. The DeAnza Trail is one of several recognized National Recreational Trail and extends, from Mexico, through Arizona to the San Francisco Bay Area. The location of the DeAnza Trail route through the Eden Area is the subject of ongoing research.

[8] Siegel & Strain Architects, 1998, *Preliminary Cultural Resources Survey,* April 30; Stock, Jody R. and Michael Corbett, 2000, *Unincorporated San Lorenzo Historic Building Survey, Summary Report*, November, pages 1 to 4. The methodology for these summary reports meets the Secretary of the Interior's criteria for historic resource documentation and establishes the standard that is to be used when a thorough, complete parcel by parcel inventory is prepared in the future.



Cultural Resources

1. Juan Bautista DeAnza Trail
2. Meek Estate
3. San Lorenzo Cemetery
4. San Lorenzo Four Corners area
5. Cornelius Mohr Estate
6. Cronin House
7. McConaghy House
8. Eden Avenue Farm Cluster
9. 2033 Miramonte
10. San Lorenzo Community Church
11. San Lorenzo Village
12. Native American Village Site
13. San Leandro Indian Adobe Rancheria
14. Portuguese IDES Hall

FIGURE 4.7-1

CULTURAL RESOURCES

- A large laurel or bay tree at 9 Lewelling Blvd. (Ashland sub-area) has been determined "eligible for local listing only."
- The Cornelius Mohr Estate at 24985 Hesperian Blvd. (in Mt. Eden) is noted, though not designated, as a complete working farmstead from the late nineteenth century in a local historical survey (4540-0012-000).
- Cronin House on Depot Road at Monte Vista Drive (Mt. Eden) may be considered a significant historic property.
- The McConaghy House adjacent to John F. Kennedy Park on Hesperian Blvd. (San Lorenzo) is maintained as a "Victorian House" by the Hayward Historic Society and is open to the public.
- There is a remaining group of buildings centered around Eden Avenue and West Street (in Mt. Eden) that represent smaller farms of the 1910s and 20s.
- The house at 2033 Miramonte (in El Portal Ridge).
- The San Lorenzo Community Church at 955 Paseo Grande (in San Lorenzo) was designed by Bruce Goff, an architect of recognized national significance, in the 1940s while he was serving in the Navy Construction Battalion.
- The San Lorenzo Village planned model community, which in addition to the shopping center, theater and community buildings comprises a core community of over five thousand homes built between 1944 and 1947, is still remarkably intact with few alterations as are many of the surrounding San Lorenzo sub-divisions that were built on the Village model. In addition, the schools from this era also retain a high degree of design integrity.

- Prehistoric archaeological site CA-Ala-6, identified as a former Native American village site, recorded within an area along San Lorenzo Creek near the Southern Pacific RR, which is in Ashland).[9]
- The San Leandro Indian Adobe Rancheria, dating to 1837, which is reported to have been located on a small hill 200 feet west of Foothill Boulevard between 155th and 159th Streets in the Ashland area. There is no visible evidence of this adobe house but the probability of below grade archeological resources is considered high.

4. Archaeological Resources

The Eden Area has two known archaeological resource sites.[10] One is the Native American Village site along San Lorenzo Creek near the Southern Pacific Railroad in the old San Lorenzo Four Corners area. Near the site is a bay tree (across from San Lorenzo High School) which contains the ashes of William Meek's sister and niece. The tree, because of its age and role as a burial site, has been cited in "Ripley's Believe It or Not."

Another archaeological site, the San Leandro Indian Adobe Rancheria, which was discovered in 1837, is reported to have been located on a small hill 200 feet west of Foothill Boulevard between 155th and 159th Streets in the Fairmont Complex sub-area. Additional research would be necessary to confirm the presence or absence of the archaeological site.

[9] Record search by Basin Research Associates.

[10] Information is based on archaeological resources taken from *Preliminary Cultural Resources Survey*, Siegel & Strain Architects, April 30, 1998; and *Unincorporated San Lorenzo Historic Building Survey, Summary Report,* Jody R. Stock and Michael Corbett, November 2000, pages 1 to 4. These documents do not represent a complete inventory of resources in the Eden Area.

B. Standards of Significance

The Eden Area General Plan would have a significant impact with regard to cultural resources if it would:

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

C. Impact Discussion

The following section discusses the potential changes that may result with adoption and implementation of the General Plan, as well as analysis of whether these changes would result in significant environmental impacts in regards to cultural resources.

1. Historical Resources

As mentioned above, there are at least two historic resources listed on the National Register of Historic Places and the List of California State Points of Historical Interest and about twelve potentially significant historical resources within the Eden Area. While some of the development occurring under the proposed General Plan would take place on land without existing structures, the majority of the development would occur in areas containing existing buildings with minimum potential to affect those with historic significance. Changes to building exteriors or demolition of buildings with historic significance has the potential to affect historic resources.

Recognizing this concern, the Land Use Element of the General Plan includes Goal LU-16, which seeks to preserve significant cultural resources in the Eden Area. Policy P2 would support this Goal by requiring the County, to the extend possible, to cause no substantial adverse change in the significance of a historical or archaeological resource as defined in 15064.5 of the California Environmental Quality Act (Title 14. California Code of Regulations) through its direct or indirect actions. Policy P4 of this Goal would highly encourage the County to make the Eden Area a top priority when conducting historic and cultural resources inventories in the County. Furthermore, prior to the completion of a professionally-prepared historic survey, property owners of potentially significant historic resources would be required to prepare professional historic surveys prior to demolition of any structure. Potentially significant historic resources may be defined as those resources identified in professionally prepared surveys or where additional evidence suggests that the property or structure may be significant (Policy P5 of this Goal).

Implementation of this Goal and its supporting policies and actions specified in the General Plan would reduce impacts to historical resources to a less than significant level.

2. Archaeological and Paleontological Resources

Development allowed under the General Plan would also involve construction activities that could result in the disturbance of undiscovered archaeological or paleontological resources during grading or other on-site excavation activities. Addressing this potential impact, Policy P3 under Goal LU-16 would require, to the extent possible, for unique paleontological resources, sites or unique geologic features not to be directly or indirectly destroyed or significantly altered.

As a result of this policy and the various regulations in regards to these type of resources stated above, implementation of the General Plan would result in less than significant impact to archaeological or paleontological resources, sites or unique geological features.

D. Impacts and Mitigation Measures

Given the polices and goals listed above no impacts are identified with respect to cultural resources in the Eden Area, thus no mitigation measures are required.

4.8 GEOLOGY, SEISMICITY AND SOILS

This section summarizes information on geology, soils and seismic hazards within the Eden Area, as well as potential area-wide geologic hazards and regional seismic characteristics. An evaluation of the effects of the proposed General Plan and ensuing development with regard to these potential hazards follows, including liquefaction, ground shaking, ground rupture and landslides.

A. Existing Setting

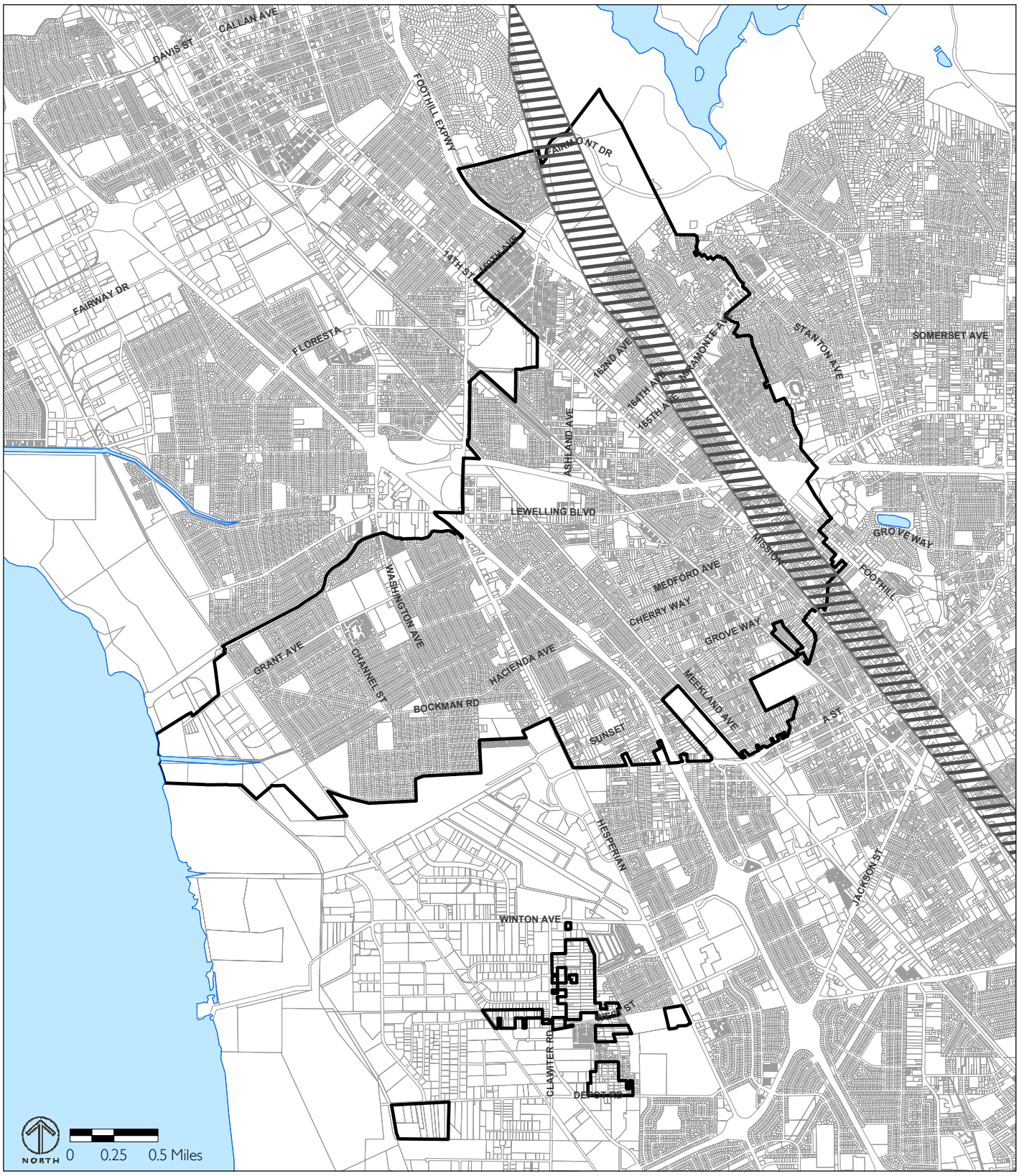
This section describes and discusses the existing setting of the Eden Area in the context of geology, soils and seismic hazards.

1. Regulatory Setting

a. Alquist-Priolo Zones

In accordance with the *Alquist-Priolo Geologic Hazard Zone Act of 1972*, the State Geologist is required to delineate wide, special study zones to encompass all active and potentially active traces of the San Andreas, Calaveras, Greenville and Hayward Faults, as well as such other faults or segments of faults as are deemed necessary. The Act was passed in 1972 to mitigate the hazards of surface faulting to structures built for human occupancy. Portions of Alameda County, including the hazard zones for active faults in the Eden Area vicinity are shown in Figure 4.8-1, are subject to the Act.

The State Board of Mines and Geology is charged with establishing policies and criteria for future land use in these Alquist-Priolo Hazard Zones though local agencies must regulate most development projects within the zones. Before a project can be permitted in a Alquist-Priolo Hazard Zones, cities and counties must require a geologic investigation to demonstrate that proposed buildings will not be constructed across active faults. An evaluation and written report of a specific site must be prepared by a licensed geologist. If an



Data Source: California Department of Conservation, Division of Mines and Geology
GIS files of Official Maps of Alquist-Priolo Earthquake Fault Zones, Central Coastal Region
Published 2001

Alquist-Priolo Zone

FIGURE 4.8-1

ALQUIST - PRIOLO ZONES IN THE EDEN AREA

active fault is found, a structure for human occupancy cannot be placed over the trace of the fault and must be set back from the fault at least 50 feet.[1]

b. Uniform Building Code

Since the 1970s, the *Uniform Building Code* in California has incorporated minimum standards to protect the life and safety of building occupants and the public from earthquake-related damage. However, buildings constructed prior to code revisions in the 1970s generally would not meet current design provisions for earthquake forces identified in the *Uniform Building Code*. Many of the buildings in the Eden Area, particularly houses and apartment buildings, were built before 1970 and thus may be susceptible to damage in the event of an earthquake.

c. Alameda County Building Code

The Alameda County Building Code was adopted in 1999 and is referred to as the Uniform Building Code within the County of Alameda. Its purpose is:

> *"to provide minimum standards to safeguard life or limb, health, property and public welfare by regulating and controlling the design, construction, quality of materials, use and occupancy, location and maintenance of all buildings and structures within the unincorporated areas of Alameda County."*[2]

The building code mirrors the Uniform Building Code of California in its requirements for seismic design, foundations and drainage.

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[1] State of California, State Geological Survey *Alquist-Priolo Earthquake Fault Zones* website, http://www.consrv.ca.gov/CGS/rghm/ap/, accessed on January 27, 2005.

[2] Alameda County Building Code. Section 15.08.020 http://www.acgov.org/admin/admincode/Alameda_County_General_Ordinance_Code/Title_15/08/020.html, accessed on January 27, 2005.

2. Regional Geology

As is the case in most of California, the Eden Area is subject to risks from seismic activity. The Eden Area is located in the San Andreas Fault Zone, one of the most seismically-active regions in the United States. The San Andreas Fault Zone has generated numerous moderate to strong earthquakes in northern California and in the San Francisco Bay Area. The region experienced large and destructive earthquakes in 1838, 1868, 1906, and 1989. Earthquakes of equally destructive force are a certainty in the San Francisco Bay region according to the Working Group on California Earthquake Probabilities (WG 02), established by the U.S. Geological Survey (USGS).[3]

Earthquakes can give rise to various secondary seismic hazards including ground shaking, liquefaction and subsidence, ground rupture and slope instability. These seismic hazards and their aftermath can give rise to structural damage, bodily harm as well as loss of human life.

a. Earthquake Faults

The Hayward Fault, one of ten major faults that make up the San Andreas Fault Zone, runs along the eastern edge of the Eden Area. Figure 4.8-2 shows the active faults in the Eden Area vicinity. To the north, it is linked with the Rodgers Creek Fault. The last major earthquake generated by the Hayward Fault was in 1868. However, pressure is slowly building up again in the Hayward Fault zone and eventually it will overcome the friction and other forces that are causing the fault zone to stick. The accumulated energy will be released in another big earthquake.[4]

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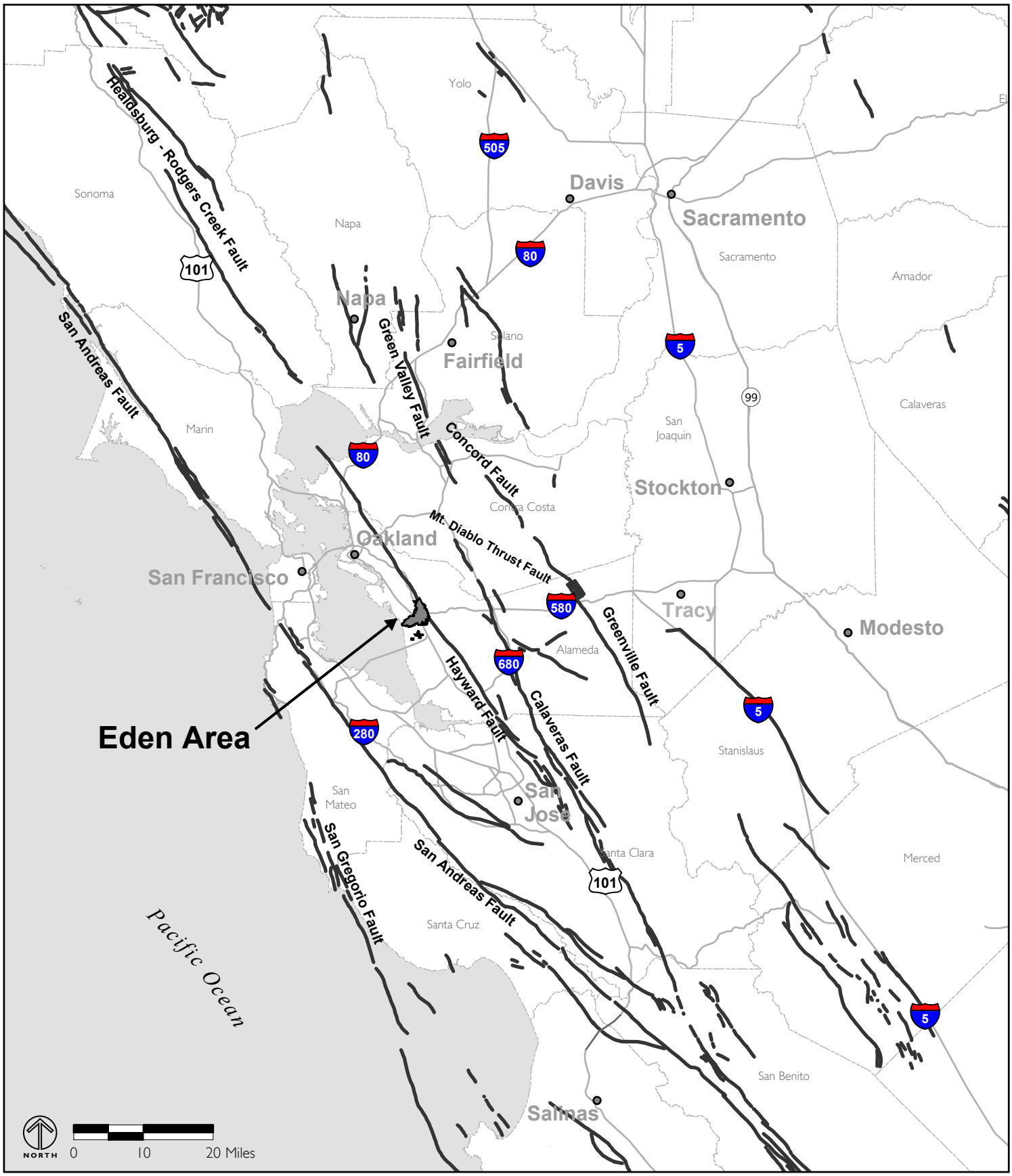
[3] Working Group on California Earthquake Probabilities, 2003, *Earthquake Probabilities In the San Francisco Bay Region: 2003-2032,* U.S. Geological Survey Open-File Report 03-214, page 1.

[4] U.S. Geological Survey, *USGS Open House 2000 Field Trip – Hayward fault zone, Hayward*., http://wrgis.wr.usgs.gov/wgmt/sfbay/oh2000-ha-ft.pdf, page 4.



Source: Deisgn, Community & Environment, May, 2004; US Geologic Survey, Working Group on California Earthquake Probabilities, 1990; Stellar Environmental Solutions, November 1996. Faults were screen-digitized by DC&E and are intended for illustrative purposes only; locations are approximate.

FIGURE 4.8-2

ACTIVE FAULTS IN THE EDEN AREA VICINITY

According to the US Geological Survey (USGS), the fault system that includes the Hayward and Rodgers Creek faults has a 27 percent probability of generating an earthquake with a magnitude greater than or equal to 6.7 on the Mercalli Richter Scale in the next 30 years. It is also the most likely fault in the Bay Area to be the site of a major earthquake in this time period.[5]

The Hayward Fault is of particular concern to the USGS because of the dense urban fabric along its length and the major infrastructure lines that cross it. A large earthquake on the Hayward Fault would, in all probability, cause extensive damage throughout the Eden Area.

A moderate to major earthquake on the Hayward Fault is most likely to generate the strongest ground shaking in the area, but other regional faults, including the San Andreas, Calaveras, Rodgers Creek could also affect the Eden Area. A moderate or strong quake on any of these faults could topple buildings, disrupt infrastructure, cripple the transportation system and trigger landslides.

b. Soils

The Eden Area is underlain primarily by Pleistocene alluvial fan deposits consisting of sand, silt, gravel and clay. The area is bordered by the Palomares Hills and the San Leandro Hills. Soils in the Eden Area are classified as Danville-Botella series. These soils form on low terraces and alluvial fans and are nearly level to moderately sloping, well-drained loams and silty clay loams. The older alluvium is the oldest of the unconsolidated deposits, consisting of a mixture of clay, silt, sand and gravel of the Pleistocene Age. Younger unconsolidated deposits include Pleistocene Merritt Sand, Holocene Bay Mud, Interfluvial Basin Deposits, Fluvial Deposits and Younger Alluvium, all from the Holocene Age.

[5] U.S. Geological Survey, *USGS Open House 2000 Field Trip – Hayward Fault Zone, Hayward*., http://wrgis.wr.usgs.gov/wgmt/sfbay/oh2000-ha-ft.pdf, page 4.

Soils in the San Lorenzo area are primarily of the Clear Lake Series, consisting of very deep, poorly drained soils that formed in alluvium that derived mainly from sedimentary rock sources. These soils are in basins or in areas of the coastal valleys. In summer, cracks that are half an inch or two inches wide appear, forming very coarse, prismatic structures.

Soils in the northeastern portion of the Eden Area consist primarily of the Tierra series. This soil type is composed of very deep, moderately well-drained soils on dissected terraces and terrace remnants. These soils formed in weakly consolidated, stratified old alluvium interspersed with beds of sandstone.

Soils in the Eden Area's flatter lands generally have slow permeability, low strength and high shrink-swell potential. These soil characteristics pose severe constraints for road and building construction, and are of marginal quality for agricultural purposes due to salinity, flooding and permeability.

The East Bay Hills portion of the Eden Area is generally composed of Cretaceous (144 to 65 million years old) marine sedimentary rocks, rhyolite and gabbro-diabase. These rocks vary in hardness and may be highly weathered and easily excavated near the ground surface. Slopes in the San Leandro Hills range in steepness from gently-sloping to moderately-steep. Slope stability ratings range from generally stable to marginally stable, with some areas on the eastern slopes of the San Leandro Hills rated as moderately unstable.

c. Minerals

The Conservation Element of the Alameda County General Plan addresses mineral resource issues. It indicates that salt, stone, sand, gravel, petroleum and clays are resources in Alameda County. However, none of these mineral resources is located in the Eden Area.

B. Seismic and Geologic Hazards

This section describes known potential geologic and seismic hazards, such as landslides and liquefaction in the Planning Area. These hazards are mapped in Figure 4.8-3.

1. Background

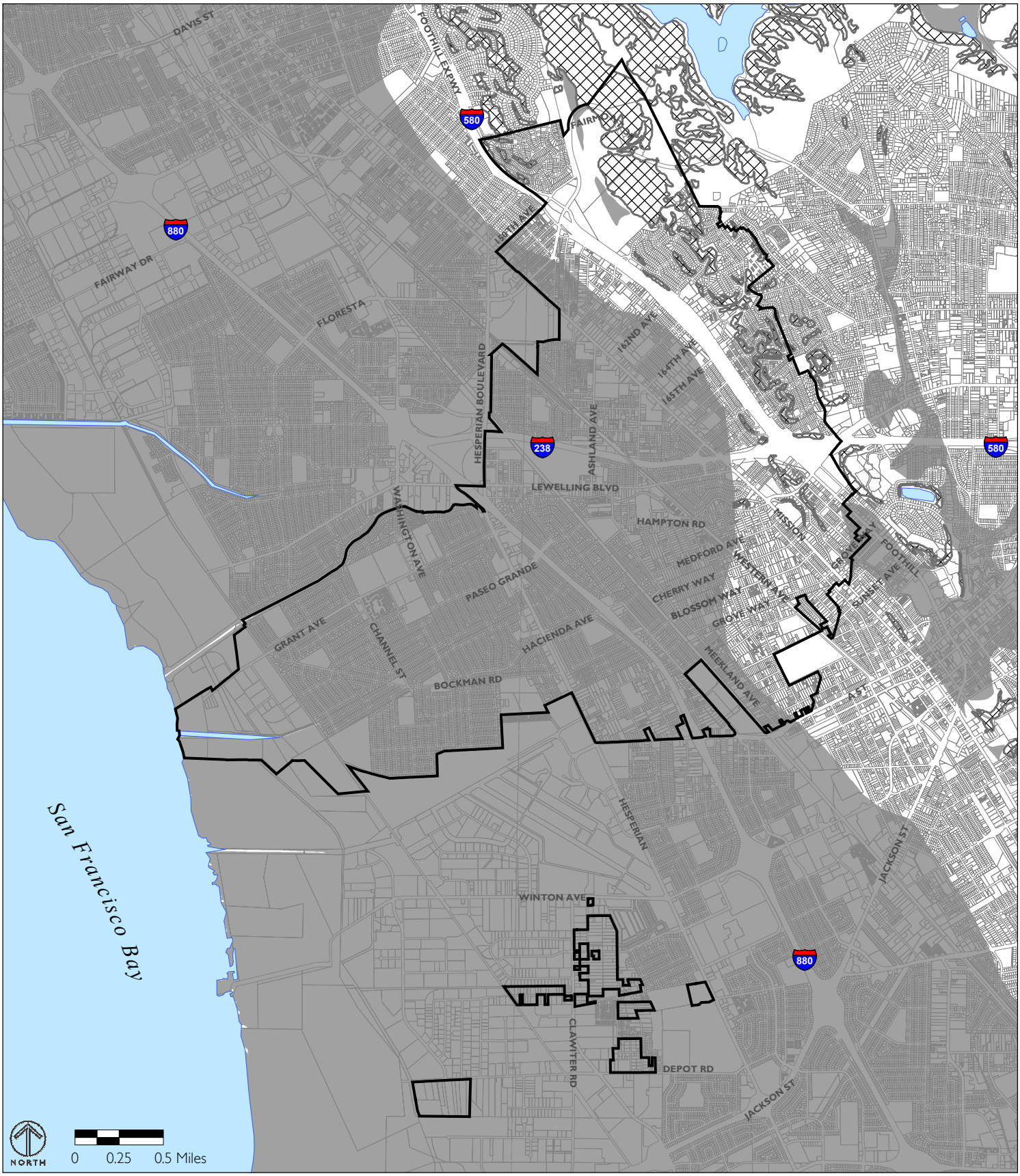
The strength of an earthquake is generally expressed in two ways: *magnitude* and *intensity*. Magnitude, which is expressed in whole numbers and decimals (e.g. 7.1), is a measure that depends on the seismic energy radiated by the earthquake as recorded on seismographs. The original magnitude scale is the Richter scale.[6] Earthquakes with magnitude of about 2.0 or less on the Richter scale are usually called microearthquakes and are not commonly felt by people. Events with magnitudes of about 4 and up are felt by most people. The Richter Scale has no upper limit and is not used to express damage.[7]

The most commonly used magnitude scale today is the Moment Magnitude (Mw) scale, which is related to the physical size of fault rupture and the movement across a fault. Mw is based on the seismic moment[8] at the source, or epicenter, of the earthquake. The Moment Magnitude scale is a way of rating the seismic moment of an earthquake with a simple, logarithmic numerical scale similar to the original Richter magnitude scale. Because it does

[6] California Geological Survey, *How Earthquakes and Their Effects are Measured*, Note 32, revised April 2002.

[7] USGS Earthquake Hazards Program's website. http://neic.usgs.gov/neis/general/ richter.html, accessed on January 27, 2005.

[8] The seismic moment of an earthquake is determined by the strength or resistance of rocks to faulting multiplied by the area of the fault that ruptures and by the average displacement that occurs across the fault during the earthquake. (Source: California Geological Survey, *How Earthquakes and Their Effects are Measured*, Note 32, Revised April 2002.)



Source: California Department of Conservation, California Geological Survey, Seismic Hazard Zones: Hayward and San Leandro Quadrangles.

Study Area Boundary

Liquefaction Zones

Landslide Zones

FIGURE 4.8-3

SECONDARY EARTHQUAKE HAZARDS

TABLE 4.8-1 **MODIFIED MERCALLI AND RICHTER SCALES**

Richter Magnitude	Modified Mercalli Category	Expected Modified Mercalli Maximum Intensity at Epicenter
2	I-II	Usually detected only by instruments
3	III	Felt indoors
4	IV-V	Felt by most people Slight damage
5	VI-VII	Felt by all Many frightened and run outdoors Damage minor to moderate
6	VII-VIII	Everybody runs outdoors Damage moderate to major
7	IX-X	Major damage
8+	X-XII	Total and major damages

Source: ABAG's website. http://www.abag.ca.gov/bayarea/eqmaps/doc/mmi.html, accessed on January 27, 2005.

not "saturate" the way local magnitude does, it is used for large earthquakes—those that would have a local magnitude of about 6 or larger.[9]

The force of an earthquake at a particular place is measured on the Modified Mercalli Intensity Scale, which is a subjective ranking of earthquakes' effects on persons and structures. It is expressed in Roman numerals from I to XII. Lower numbers on the scale indicate less severe shaking. Table 4.8-1 summarizes the Modified Mercalli Intensity Scale in relation to the Richter Scale.

2. Liquefaction

Liquefaction occurs when the strength of saturated, loose, granular materials, such as silt, sand or gravel, is dramatically reduced as a result of an earth-

[9] California Geological Survey, *How Earthquakes and Their Effects are Measured*, Note 32, revised April 2002.

quake. This earthquake-induced deformation transforms a stable material into a temporary fluid-like state in which solid particles are virtually in suspension, akin to quicksand.

Liquefaction is restricted to certain geologic and hydrologic environments. These areas consist of deposited sands and silts in areas with high groundwater levels. Generally, the younger and looser the sediment, and the higher the water table, the more susceptible the soil is to liquefaction. Sediments most susceptible to liquefaction include Holocene (less than 10,000-year-old) delta, river channel, flood plain, aeolian deposits, and poorly compacted fills. Dense soils, including well-compacted fills, have low susceptibility to liquefaction.[10]

3. Landslides and Ground Failure

Landslides are common in hill areas and mountains as loose material moves down the slopes. Some of the natural causes of this instability are earthquakes, weak materials, stream and coastal erosion, and heavy rainfall. In addition, certain human activities tend to make earth materials less stable and increase the chance of ground failure. Activities contributing to instability include extensive irrigation, poor drainage or groundwater withdrawal, removal of stabilizing vegetation and over-steepening of slopes by undercutting them or overloading them with artificial fill. These causes of failure, which normally produce landslides and differential settlement, are augmented during earthquakes by strong ground motion.

As shown in Figure 4.8-2, the landslide risk in the Eden Area is considered greatest in the Fairmont Complex, Hillcrest Knolls, and El Portal Ridge areas. In addition, there are smaller landslide zones near the Ashland/Cherryland border, west of I-580.

[10] Earthquake Engineering Research Institute's website. http://www.eeri.org/earthquakes/EQ_Basics/eq1.html, accessed on January 27, 2005.

4. Land Subsidence

Land subsidence, or settlement, is a slow-to-rapid downward movement of the ground surface that can be caused by a variety of factors. Typically, significant subsidence occurs only in areas underlain by soft soils such as marsh deposits or in areas susceptible to liquefaction. Most of the Eden Area west of I-580 is considered susceptible to liquefaction, as shown in Figure 4.8-2.

5. Unreinforced Masonry Buildings

Unreinforced masonry buildings, which are brick, stone or concrete buildings built without structural steel reinforcements, represent a particular earthquake hazard since they can easily fail with violent groundshaking. Most local jurisdictions in Alameda County adopted strong earthquake bracing provisions around 1950 and have subsequently used these and more recent amendments to the building code to regulate new development. However, a substantial number of buildings were built in the Eden Area before those codes were adopted. There is currently no comprehensive tally of unreinforced masonry buildings in the Eden Area.

In 1986, a bill was passed in the State Legislature requiring inspection and mitigation of all types of Unreinforced Masonry (URM) buildings within the State's Seismic Safety Zone 4, which includes the Eden Area. This bill has since been codified as Government Code Sec. 8875 *et. seq.* The law requires cities and counties to identify potentially hazardous URM buildings, develop mitigation programs to reduce the hazards and submit the results to the State Seismic Safety Commission. Some unreinforced buildings are exempt from the program under the law, including residential buildings with five or fewer living units, buildings owned by federal or State government, and warehouses or similar buildings with few occupants, unless used for emergency services or supplies. Although historic buildings are also exempt, the Seismic Safety Commission recommends they be included in mitigation programs.

C. Standards of Significance

The Eden Area General Plan would result in a significant geologic or seismic impact if it would:

- Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:
  - Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault. Refer to Division of Mines and Geology Special Publication 42.
  - Strong seismic ground shaking.
  - Seismic-related ground failure, including liquefaction.
  - Landslides.
- 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.
- Result in substantial soil erosion or the loss of topsoil.
- Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property.
- Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water.

D. Impact Discussion

The following provides an analysis of the General Plan and its relationship to various seismic and geological hazards.

1. Seismic Hazards

As discussed previously, the risk of ground rupture within the area is potentially significant given the fault activity of the area and its vicinity. Areas

subject to ground rupture in the Eden area are found along the Hayward fault because it is the only active fault that enters the geographic boundaries of the Eden Area. Ground rupture would represent a significant impact if new development or redevelopment was situated across the Hayward fault. The Alquist-Priolo Earthquake Fault Zones Act, which has been incorporated into the proposed General Plan would minimize this potential impact.

However, recognizing that there is still a risk to the Area from primary and secondary seismic hazards, the Public Safety Element in the General Plan includes several policies and actions intended to minimize this risk. For example, Policy P2 under Goal SAF-1 would require that buildings be designed and constructed to withstand ground-shaking forces of a minor earthquake without damage; of a moderate earthquake without structural damage; and a major earthquake without collapse of the structure. The County shall require that critical facilities and structures (e.g. hospitals, emergency operations centers) be designed and constructed to remain standing and functional following an earthquake. Policy P3 under Goal SAF-1 would require that all construction in the Eden Area conform with the Uniform Building Code and the Alameda County Building Code, which specify requirements for seismic design, foundations and drainage. Additionally, Policy P7 under Goal SAF-1 would require new construction on landslide-prone or potentially unstable slopes to implement drainage and erosion control provisions to avoid slope failure and mitigate potential hazards, in order to minimize off-site impacts of hillside development.

As a result of these and other proposed goals, polices and actions included in the General Plan, the potential impacts associated with seismic hazards would be reduced to a less-than-significant level.

2. Soil Conditions

According to Figure 4.8-2, much of the Eden Area would be subject to liquefaction in the aftermath of a seismic event. The portions of the Eden Area which are most susceptible to liquefaction are San Lorenzo, Hayward Acres, Cherryland and Ashland. Hillcrest Knolls, the Fairmont Campus and El Por-

tal Ridge do not represent a high risk due to their higher elevation in the Eden Area. The UBC, which the County has incorporated into its Municipal Code, specifies that studies must be undertaken to identify areas of liquefaction risk and to incorporate those findings into site preparation and construction plans for any new development or redevelopment. The County would minimize the risk of liquefaction in the Eden Area by adhering to the policies and guidelines in the UBC, which has been incorporated into the proposed General Plan (Policy P3 under Goal SAF-1, as mentioned above).

There are policies contained in the General Plan Safety Element that will ensure that the hazards associated with soil conditions will be reduced to a less than significant level. As mentioned above, Policy P7 would require to implement drainage and erosion control provisions to avoid slope failure and mitigate potential hazards. Going further, Policy P6 under Goal SAF-1 would require new development in areas with the potential for landslides or liquefaction hazards not to be approved unless the County can determine that feasible measures will be implemented to reduce the potential risk to acceptable levels, based on site-specific analysis. The County shall review new development proposals in terms of the risk caused by seismic and geologic activity.

As a result of these goals, policies and actions, the risks to development occurring under the General Plan would be less than significant.

E. Impacts and Mitigation Measures

Since the implementation of the General Plan would not result in significant impacts related to geology and soils, no mitigation measures are required.

4.9 HYDROLOGY AND FLOODING

This section summarizes information on hydrology, stormwater and flooding in the Eden Area, and provides an evaluation of the effects the proposed General Plan would have on hydrologic resources and flooding.

A. Regulatory Setting

This section describes the primary laws and policy documents that affect hydrology, stormwater, water quality, and flooding in the Eden Area.

1. Federal and State Water Quality Regulations

Federal and State water quality regulations apply to development projects that may adversely affect the quality of surface waters or groundwater through the discharge of wastewater and stormwater. Section 303 of the federal Clean Water Act and the State's Porter-Cologne Water Quality Control Act establish water quality objectives for all waters in the State. These objectives are implemented locally through Water Quality Control Plans and the National Pollutant Discharge Elimination System, (NPDES) permitting program.

a. The Clean Water Act of 1977 (CWA)

The CWA regulates the discharge of pollutants into navigable waters. More specifically, the CWA regulates point discharges by sewage treatment plants and industry, non-point stormwater discharges and dredging. It sets national limits and standards which must be achieved by public wastewater treatment plants. Section 402 of the US CWA established a National Pollutant Discharge Elimination System. This permit system regulates stormwater quality in order to reduce the amount of pollution being conveyed to waterways from dispersed sources such as pollution from urbanized areas.[1] Section 404 of the CWA established a Dredge and Fill Permit system that regulates the discharge of dredged and filled materials into the waters of the United States.

b. The Safe Drinking Water Act of 1974 (SDWA)

The SDWA was established to set federal minimum drinking standards and to protect public water supplies. This is the primary Federal legislation protecting drinking water supplied by public water systems. As a result of the act, regulations for the protection of public health, as well as regulations relating to the taste, odor and appearance of drinking water were established.[2]

c. The Wild and Scenic Rivers Act of 1968 (WSRA)

This act was established to maintain the natural beauty, biology and wildness of designated "wild, "scenic", or "recreational" rivers threatened by the construction of dams, diversions and canals. Under the act certain rivers are designated at being "scenic" and/or "wild."

d. California Constitution Article X, Section 2

This article is the benchmark for California's water law and policy. More specifically, the law states that all uses of California's water be both reasonable and beneficial.[3]

e. The California Wild and Scenic Rivers System Act

This act is California's state version of the Federal Wild and Scenic Rivers Act. Much like the federal act, it provides protection for designated rivers.

f. The Porter-Cologne Water Quality Control Act

This act includes comprehensive State laws which makeup a complete regulatory program designed to protect water quality and beneficial uses of the State's water supplies. Furthermore, the act establishes the State Water Resources Control Board and each Regional Water Quality Control Board as

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[1] Alameda County Department of Public Works, September, 2005, *Stormwater Quality Control Requirements*, page 1.

[2] NOAA Coastal Services Center's website, http://www.csc.noaa.gov/cmfp/reference/Safe_Drinking_Water_Act_1974.htm. Acessed March 2, 2006.

[3] Grassetti Environmental Consulting, February 2003, *Understanding Environmental Impact Assessment,* page 44.

the principal State agencies for having primary responsibility in coordinating and controlling water quality in California.[4]

B. Existing Setting

1. National Pollutant Discharge Elimination System (NPDES)

Unincorporated Alameda County is subject to the Alameda Countywide NPDES Municipal Stormwater Permit,[5] issued by the California Regional Water Quality Control Board. The permit assigns responsibility to the County for municipal storm drain systems and watercourses in the unincorporated areas. The County must meet the requirements of the permit, which include submitting a Stormwater Quality Management Plan (SWQMP) with the goal of reducing the discharge of pollutants in stormwater to the maximum extent practicable.

In Alameda County, discharge from new development projects that create or replace 10,000 square feet or more of impervious surface must comply with the NPDES permit. This permit requires that permanent post-construction stormwater quality control measures and treatment facilities be implemented on the site.[6] Compliance with four main control measures (Treatment Control, Source Control, Site Design and Hydromodification Management) outlined by Alameda County involves construction best management practices (BMPs), erosion control standards, stormwater treatment, detainment and infiltration measures, as well as quantity controls. The Alameda Countywide Clean Water Program (ACCWP) administers the County's NPDES permit, which covers the each of the 14 cities, the Unincorporated Area and the two

[4] Porter-Cologne Water Quality Act's website. http://ceres.ca.gov/wetlands/permitting/porter.html, accessed March 2, 2006.

[5] NPDES Permit No. CAS0029831.

[6] Alameda County Department of Public Works, September, 2005, *Stormwater Quality Control Requirements*, page 1,2.

flood control districts. This done through a consortium of 17 member agencies in Alameda County.[7]

2. Stormwater Quality Management Plan

Alameda County Public Works Department, along with the other agencies participating in the ACCWP, has adopted the *Stormwater Quality Management Plan,* which describes the ACCWP's approach to reducing stormwater pollution in the County. The Plan covers fiscal year 2001/02 through 2007/08. The Plan is the ACCWP's third stormwater quality management plan and is intended to serve as the basis of the ACCWP's third stormwater discharge permit from the Regional Water Quality Control Board.[8]

The *Stormwater Quality Management Plan* includes performance standards that define a large part of what member agencies must do to implement the Plan and comply with the NPDES permit. Performance standards exist for the following areas of the Plan:

- Public Information and Participation
- Municipal Maintenance Activities
- New Development and Construction Controls
- Illicit Discharge Controls
- Industrial and Commercial Discharge Controls.[9]

3. Existing Storm Drainage and Flood Control Infrastructure

The Alameda County Public Works Agency, acting in its capacity as the Flood Control and Water Conservation District, is responsible for most major flood control operations in the Eden Area. The District owns and manages most storm drains in the Eden Area, and ensures that they are designed and constructed to meet existing and projected needs for the area to avoid

[7] Alameda County Department of Public Works, September, 2005, *Stormwater Quality Control Requirements*, page 1.

[8] ACCWP, *Stormwater Quality Management Plan: July 2001-June 2008*, 2003, page 1-1.

[9] ACCWP, *Stormwater Quality Management Plan: July 2001-June 2008*, 2003, page 5-1.

flooding. Storm drainage infrastructure includes 500 miles of conduits, channels and natural creeks; four million linear feet of fencing and 22 pump stations within Alameda County that pump excess flood waters into the Bay.[10]

Most of the Eden Area is in the District's Zone 2; Mt. Eden is located in Zone 4. Water in Zone 2 is conveyed in storm drains, channels and pipelines to San Lorenzo Creek, where it eventually flows to San Francisco Bay.[11]

In the Eden Area, stormwater runoff that does not infiltrate into the subsurface is directed into a constructed stormwater drainage system consisting of crowned streets, curbside gutters, drainage inlets, subsurface pipes, and engineered canals and creeks. There are two major drainage channels in the Eden Area: San Lorenzo Creek and Bockman Canal.[12] In addition to these channels, several open drainage ditches are located within the Eden Area, particularly in the industrial area of San Lorenzo, near the Bay.[13]

Surface water runoff drains to either Estudillo Canal (located in San Leandro), San Lorenzo Creek, or Bockman Canal, and eventually to the San Francisco Bay. These channels are tidally influenced near the Bay margin. In addition to the channels, several open drainage ditches, which appear to be tidally influenced and/or recharged by groundwater, are located within the Eden Area, particularly in the industrial area of San Lorenzo, near the Bay.[14]

4. Watersheds

San Lorenzo Creek is part of the San Lorenzo Creek watershed, which encompasses 48 square miles and seven creeks. The watershed begins in Castro Valley and covers parts of north Hayward and San Lorenzo. The San

[10] Alameda County Flood Control and Water Conservation District, *Fiscal Years 2002 and 2003*, March 2004, page 9.

[11] Alameda County Flood Control and Water Conservation District, *Fiscal Years 2002 and 2003*, March 2004, page 11.

[12] EBMUD, B*ayside Groundwater Project Draft EIR*, 2001, page 3.6-1.

[13] EBMUD, B*ayside Groundwater Project Draft EIR*, 2001 page 3.9-2.

[14] EBMUD, B*ayside Groundwater Project Draft EIR*, 2001, page 3.9-2.

Lorenzo Creek watershed is the second largest watershed in the East Bay. The watershed begins in hills just south of Don Castro Reservoir. Located south of Interstate 580 near Crow Canyon Road, the watershed enters a highly urbanized area. East of Interstate 880 it flows freely before being tunneled into a channel directly under the freeway. From this point to the San Francisco Bay, the creek runs in a concrete-lined, trapezoidal channel. When it reaches the San Francisco Bay, the channel has a sandy bottom.

Bockman Canal is considered its own watershed which contains a series of storm drains and canals that drain western San Lorenzo. The canal itself runs east to west through San Lorenzo. Like San Lorenzo Creek, Bockman Canal is concrete lined and is affected by tides west of the Union Pacific railroad tracks.[15]

5. Flooding

Due to the geographic location of the Eden Area, the chances that inundation from a flood would affect the area is unlikely. However, there are a few locations near the San Francisco Bay that are subject to flooding under extraordinary circumstances including 100 year floods, tsunamis and seiche. These hazards are discussed in this section.

Floodplain zones are determined by the Federal Emergency Management Agency (FEMA) and used to create Flood Insurance Rate Maps (FIRMs) designating these areas. These tools assist cities in mitigating flooding hazards through land use planning. FEMA also outlines specific regulations for any construction, whether residential, commercial, or industrial within 100-year floodplains.[16]

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[15] Bockman Canal Reservoir's website, http://www.museumca.org/creeks/28-RescBockman.html, accessed on February 24, 2005.

[16] The 100-Year Floodplain is are the area that has a one percent chance of being inundated during any particular 12-month period. The risk of this area being flooded in any century is one percent but statistically the risk is almost 40 percent in any 50-year period.

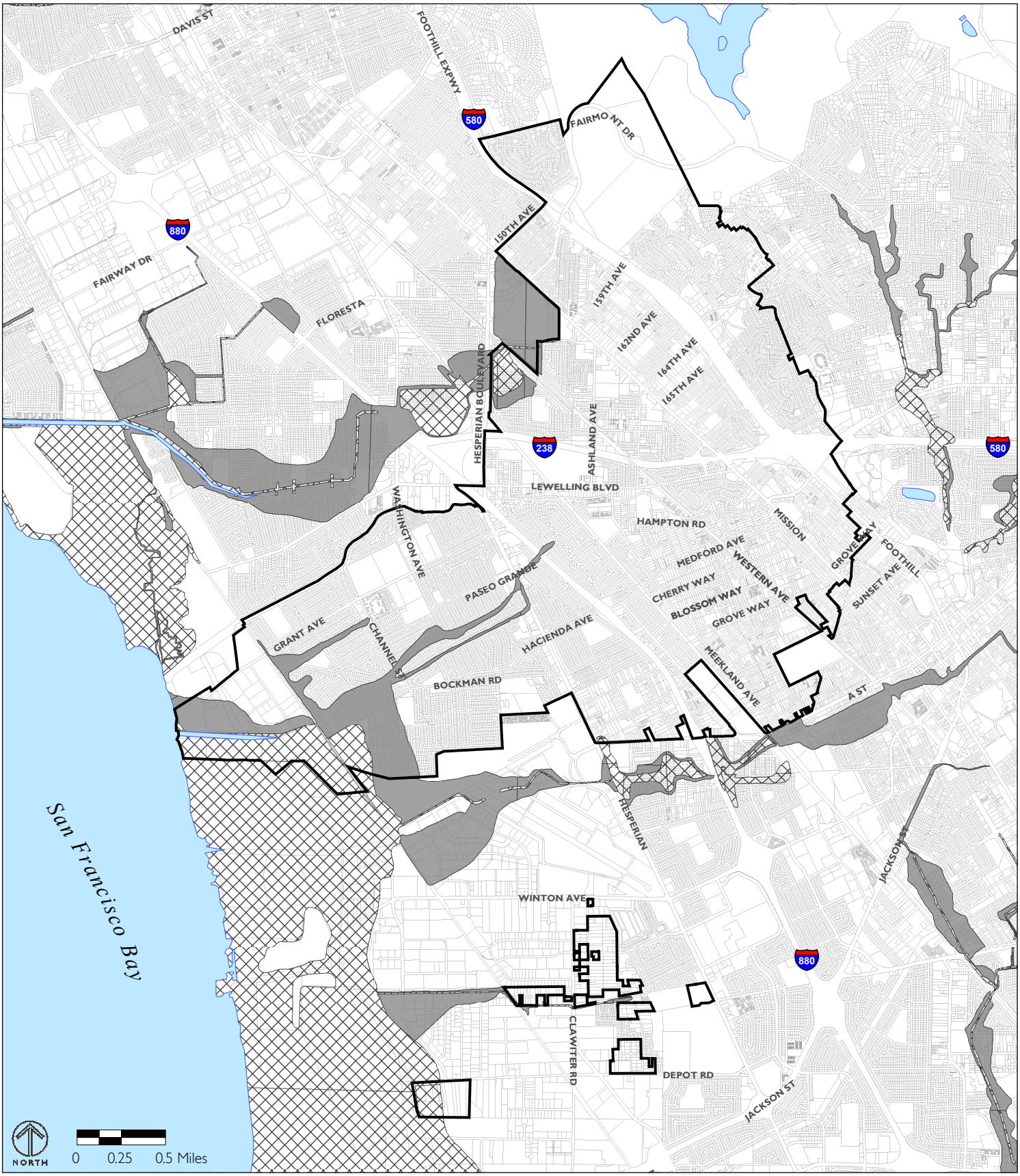
FEMA was created in 1979 by President Jimmy Carter under Executive Order 12148 with the intention to aid Americans "to prepare, prevent, respond to and recover from disasters."[17] This executive order combined the Federal Insurance Administration, the National Fire Prevention and Control Administration, the National Weather Service Community Preparedness Program, the Federal Preparedness Agency of the General Services Administration and the Federal Disaster Assistance Administration activities from the U.S. Department of Housing and Urban Development (HUD) into one agency which is known today as FEMA.

a. 100-Year and 500-Year Floods

A 100-year flood is defined as an event that would cause inundation to at least one foot, and that is expected to occur, on average, every 100 years. Areas potentially subject to flooding from a 100-year event include various low-lying areas mapped by the Federal Emergency Management Agency (FEMA). The 100-year flood, which is the standard used by most Federal and state agencies, is also used by the National Flood Insurance Program (NFIP) as the standard for floodplain management and to determine the need for flood insurance. A structure located within a special flood hazard area shown on an NFIP map has a 26 percent chance of suffering flood damage during the term of a 30-year mortgage. The Alameda County Building Inspection Division reviews permits for compliance with their flood hazard abatement codes and regulations, so the potential for flooding from a 100-year flood at individual sites is addressed when specific development is proposed.

Portions of the Eden Area within in the 100-year flood zone, are shown in Figure 4.9-1, which also shows the portions of the Eden Area subject to inundation from a 500-year flood, which have a 0.2 percent chance of flooding in any given year. The following areas in the Eden Area are located within the 100-year and 500-year flood zone.

[17] FEMA's website, http://www.fema.gov/about/history.shtm. Accessed March 6, 2006.



Source: FEMA Flood Insurance Rate Maps, Digital Q3 data.

Study Area Boundary

500 Year FEMA Flood Zone

100 Year FEMA Flood Zone

FIGURE 4.9-1

FEMA 100 & 500 YEAR FLOOD ZONES

- Ashland: Along Hesperian Boulevard, between Western Boulevard and Interstate 238. This area consists of relatively large blocks of properties which, prior to their development, were remnants of small farms, orchards and nurseries.
- San Lorenzo: In the shoreline areas and cutting through the middle of the area along the undergrounded Bockman Canal. This area consists predominantly of single-family homes with commercial development along major roadways. Furthermore, San Lorenzo has an agglomeration of industrial businesses in the Grant Avenue Industrial Area.
- Mt. Eden: At the west end of Depot Road. The Mt. Eden community is a fragmented, non-contiguous set of properties which consists primarily of single-family residences.
- Hayward Acres: Near the intersection of West 'A' Street and Hesperian Boulevard. Hayward Acres is a small community of residential properties located at the southeast corner of the Eden Area.

b. Dam Failure[18]

Some areas within the Eden Area have the potential to be affected by dam failure inundation. Dams located within the Eden Area or dams located outside of it's geographical boundaries but which pose inundation threat to the Eden Area are:

- South Reservoir Dam
- Almond Reservoir Dam
- San Lorenzo Creek Dam
- Cull Creek Dam

A small portion of the Cherryland and San Lorenzo area would be at risk in the event of dam failure occurring at the South Reservoir. More specifically, those areas in Cherryland just south of Highway 238 would be at risk. Areas

[18] Association of Bay Area Governments' website. http://www.abag.ca.gov/, accessed on March 6, 2006.

along Cull Creek and San Lorenzo Creek are also at risk for inundation from dam failure at the Cull Canyon and Don Castro reservoirs. The areas which would potentially be inundated are highly urbanized, residential communities which are almost completely built out. Dam failure at Lake Chabot would not inundate the Eden Area.

c. Tsunamis

A tsunami is a series of long waves generated by any sudden displacement of a large volume of water. Tsunamis can be triggered by a number of submarine phenomenon including: earthquakes, volcanic eruptions, landslides, meteor impacts, and even onshore slope failures that fall into the ocean or a bay.[19] Tsunami waves can travel across entire ocean basins as well as enter into bays and inlets. When they impact land they can rise to as much as 40 feet high. The United States Geological Survey has estimated that the San Francisco Bay will experience a 20-foot high tsunami at a frequency of every 200 years. The wave height would be reduced by half the height by the time it reaches the Albany/Berkeley shoreline and would decrease further as it travels south. All cities in Alameda County that front the Bay would be subject to some level of inundation from a tsunami of this magnitude.[20] Within the Eden Area only the west end of San Lorenzo would be affected by such a tsunami event. The affected area of San Lorenzo contains various industrial facilities that extend out into the boundary of the Bay, with open space and residential uses further inland.

d. Seiches

Seiches are waves generated from seismic activity in an enclosed body of water, such as the San Francisco Bay. These tsunami-like waves can be generated by earthquakes, subsidence or uplift of large blocks of land, submarine and onshore landslides, sediment failures, and volcanic eruptions. The largest seiche wave ever measured in the San Francisco Bay, following the 1906

[19] National Tsunami Hazard Mitigation Steering Committee, 2001, *Designing for Tsunamis: Background Papers*, page 1-3.

[20] Alameda County Waste Management Authority, 1998, *Alameda County Disaster Waste Management Plan,* page 2-3.

earthquake, was four inches high. The Bay Area has not been adversely affected by seiches during its history within this seismically active region of California.[21]

6. Flood Control Activities

The Alameda County Flood Control District has voluntarily participated in the Community Rating System Program (CRS) since 1992. This national program, offered by the FEMA's NFIP, provides credit points to the District for providing superior floodplain management than is required as a minimum by the federal government.

Between 1994 and 1999, Alameda County has received sufficient credit in the CRS program to qualify Eden Area residents living in flood hazard areas for a 10 percent discount in their federal flood insurance premiums. In 1999, the Public Works Agency, which administers the CRS program in the Eden Area, earned sufficient credits to earn an additional 5 percent reduction for Eden Area residents in flood hazard areas, for a total of 15 percent.

C. Standards of Significance

The proposed Eden Area General Plan would have a significant hydrology and flooding impact if it would:

- Violate any water quality standards or waste discharge requirements.
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion, siltation or flooding on- or off-site.

[21] U.S. Army Corps of Engineers San Francisco District, Port of Oakland. *Oakland Harbor Navigation Improvement (-50 Foot) Project SCH No. 97072051 Final Environmental Impact Statement/Report*, May 1998 Updated January 2000.

- Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.
- Otherwise substantially degrade water quality.
- Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map.
- Place within a 100-year flood hazard area structures which would impede or redirect flood flows.
- Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam.
- Be impacted by inundation by seiche, tsunami or mudflow.
- Alter wetlands in any way.

D. Impact Discussion

The following provides an analysis of the General Plan and its relationship to various hydrology and flooding hazards.

1. Groundwater

Groundwater supply is discussed in Chapter 4.4, Infrastructure, and groundwater quality is discussed below under Water Quality.

2. Water Quality

The implementation of the proposed General Plan would inevitably result in development and redevelopment within the Eden Area, as well as an increase in population. The Eden Area is highly urbanized and there are many pollutants that are used on a daily basis in urbanized areas. These pollutants may include oil, grease, pesticides, fertilizers and detergents. The use of these pollutants is expected to increase over the life of the proposed General Plan

based on population growth and new development. Construction activities associated with development and redevelopment of Eden Area land could cause erosion, which would increase the sediment load of runoff. All of these pollutants have the potential to flow into local streams and deteriorate surface and groundwater quality. This is considered a potentially significant impact.

However, the proposed General Plan includes goals, policies and actions meant to reduce these impacts to a less than significant level. For example, Policy P9 under Goal PF-11 would require the County to protect surface and groundwater resources by implementing the water quality policies in the Countywide Resources and Conservation, Open Space and Agriculture Element (ROSA). As for pollutant sources, Policy P10 under Goal PF-11 would prohibit the development of uses such as septic systems, automobile dismantlers, waste disposal facilities, industries utilizing toxic chemicals, and other potentially polluting substances in creek-side areas when polluting substances could come in contact with flood waters, permanently or seasonally high groundwater, flowing stream or creek waters, or reservoir waters. Furthermore, Action A3 under Goal PF-11 would seek to implement pollution prevention, pollutant sources control and treatment Best Management Practices (BMPs) recommended by the Alameda Countywide Cleanwater Program.

While the General Plan would allow new development that could contribute to erosion and additional urban pollutants that may end up in the surface or groundwater systems, implementation of the State's, Regional and County's various regulations, policies and standards as mentioned above in the regulatory setting, along with the policies and actions contained in the General Plan would result in a less than significant impact to water quality.

3. Drainage Patterns and Stormwater Disposal

Additional development and related construction allowed by the General Plan could affect the drainage system in the Eden Area by increasing stormwater, which could require additional stormwater drainage facilities. The alteration of drainage patterns could also result in substantial erosion, siltation or flooding on or off site. Under the proposed General Plan, development

and/or redevelopment is not expected to alter existing drainage patterns or stream alignments. Furthermore, the County of Alameda understands the importance of maintaining natural drainage patters and stream alignments in regards to flood prevention.

In the effort to address adequate provisions of drainage infrastructure, the proposed Plan would require that stormwater infrastructure be maintained in good condition (Policy P1 under Goal PF-11). Additionally, the Plan would highly encourage local storm drainage improvements be designed to carry appropriate design-year flows resulting from build out of the General Plan (Policy 2 under Goal PF-11). Policy P6 under Goal PF-11 would also require that natural or nonstructural stormwater drainage systems be encouraged to preserve and enhance the natural features of the Eden Area. Furthermore, Action A1 under Goal SAF-3 would require the County to develop a program, based on studies conducted by the Alameda county Flood Control District, to ensure improvements to the San Lorenzo Creek drainage channel or Bockman canal will result in the continued ability to accommodate runoff from storms and to maintain its status outside a 100-year flood event.

Implementation of the General Plan policies and actions, in concert with other County development standards and requirements would reduce the potential for impacts associated with drainage system changes and increased runoff to a less than significant level.

4. Flooding and Dam Inundation Risks

Portions of the Eden Area are located within 100-year and 500-year flood zones. Detailed information about these flood zones is provided in section 5a above. Additionally, albeit a low risk, there still exists a chance of inundation in some areas due to tsunami, seiche waves and dam failure. The General Plan has several goals, policies and actions that address the reduction of flood hazards in the Eden Area.

Goal SAF-2 of the proposed Plan would seek to reduce hazards related to flooding and inundation. This Goal is supported by Policy P1, which would

require development to only be allowed on lands within the 100-year flood zone if it will not create danger to life and property due to increased flood heights or velocities caused by excavation, fill, roads and intended use; impeded access of emergency vehicles during a flood; interfere with the existing water flow capacity of the floodway, along with other provisions. Policy P3 under this Goal would require the County to prevent the construction of flood barriers within the 100-year flood zone that will divert flood water or increase flooding in other areas. Furthermore, Action A1 under this Goal would encourage the continued participation in activities that prevent or reduce flood impacts to existing and future development as described under the Community Rating System program developed by FEMA's National Flood Insurance Program.

There are four dams within the vicinity of the Eden Area. Detailed information about dam locations and reservoir size is provided in section 5b, above. Structural failure at any of these could result in flooding. While each dam has the potential to fail and to release a volume of water that could result in severe short-term flooding, the Eden Area would not be significantly affected by potential inundation and therefore, release of water from them poses minimal risk.

Given existing provisions by the County of Alameda, and implementation of the General Plan goals, policies and actions, the potential for impacts associated with flooding are considered less than significant.

5. Seiche, Tsunami or Mudflows Hazards

As mentioned previously, the potential risk of seiche is low in the Eden Area given the history of the Area within this seismically active region of California. Given the topography of the Eden Area, only a small portion, mostly the west end of San Lorenzo, would be affected by a tsunami event as predicted by the USGS. As discussed in Chapter 4.2, Land Use, of this EIR, the west of San Lorenzo consists of a series of industrial facilities, which would act as a buffer zone for residences further inland.

In regards to tsunami hazards, the proposed plan would encourage the monitoring of potential changes in information regarding tsunami hazards for the Eden Area (Action A2 under Goal SAF-2). A mudflow would be considered a potential risk to life and property depending on the quantity of mud, the speed at which it travels, and the slope of the hill in which it originates. The risk for mudflows within the Eden Area is quite low. However, General Plan policies SAF-1 (P6), (P7) are meant to minimize the probability of mudflows associated with hillside development within the Eden Area. These policies are outlined in the Chapter 4.8, Geology, of this EIR.

As a result, adoption and implementation of the General Plan would result in less than significant impacts related to seiches, tsunamis and mudflows.

6. Wetlands

The Eden Area has very little wetlands. However, because the Eden Area is almost completely built out, the potential exists that wetlands located within the Eden Area may be impacted due to development. Polices 4.2.2, 4.3.1, and 4.3.2 from the C*ounty of Alameda's Resource Conservation Element* are designed to minimize any potential impacts to wetlands or "sensitive areas" within the Eden Area. These polices are discussed in the Biological Resources Chapter of this EIR.

E. Impacts and Mitigation Measures

Since *no significant impacts* were identified to hydrology and water quality in and around the Eden Area as a result of the adoption and implementation of the General Plan, no mitigation measures are required.

4.10 BIOLOGICAL RESOURCES

This section provides information on biological resources found within and in the immediate vicinity of the Eden Area. An evaluation on the potential impacts that the proposed General Plan may have on Eden Area biological resources is provided. Furthermore, a summary of the regulatory framework which provides for the protection and conservation of important biological resources is also included.

A. Regulatory Framework

This section describes the State and federal regulations that provide for protection and management of sensitive biological resources in the United States and California.

1. Federal Laws

The federal laws that regulate the treatment of biological resources include the Endangered Species Act, the Migratory Bird Treaty Act and the Clean Water Act. The following sections outline the relevant principles of each.

a. Federal Endangered Species Act (FESA)

The US Fish and Wildlife Service (USFWS) is responsible for implementation of the Federal Endangered Species Act (ESA) (16 U.S.C. § 1531 et seq.). The Act protects fish and wildlife species that are listed as threatened or endangered, and their habitats. "Endangered" species, subspecies, or distinct population segments are those that are in danger of extinction through all or a significant portion of their range, and "threatened" species, subspecies, or distinct population segments are likely to become endangered in the near future.

b. Federal Clean Water Act (FCWA)

The Federal Clean Water Act is administered by the Environmental Protection Agency (EPA) and the US Army Corps of Engineers (Corps). The Corps is responsible for regulating the discharge of fill material into waters of the United States, including lakes, rivers, streams, and their tributaries, as well as wetlands. Wetlands are defined for regulatory purposes as areas "in-

undated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions."

The discharge of dredged or fill material into waters of the United States is subject to permitting under Section 404 (Discharges of Dredge or Fill Material). Section 401 (Certification) specifies additional requirements for permit review, particularly at the state level. Project proponents must obtain a permit from the Corps for all discharges of dredged or fill material into waters of the United States, including wetlands, before proceeding with a proposed action. Corps permits must be certified by the State Water Resources Control Board in order to be valid. Thus, certification from the Board should be requested at the same time an application is filed with the Corps.

Certification from the California Regional Water Quality Control Board is also required when a proposed activity may result in discharge into navigable waters, pursuant to Section 401 of the Clean Water Act and EPA 404(b)(1) Guidelines.

c. Migratory Bird Treaty Act (MBTA) (16 U.S.C. 703 et seq.)

The MTBA governs the taking, killing, possession, transportation and importation of migratory birds, their eggs, parts and nests. Moreover, the MBTA prohibits the take, possession, import, exports, transport, selling, purchase, barter, or offering for sale, purchase or barter, any migratory bird, their eggs, parts, nests, except as authorized under a valid permit (50 CFR 21.11).[1]

2. State Laws and Regulations

The most relevant State laws regulating biological resources are the California Endangered Species Act, the California Fish & Game Code and the California Native Plant Protection Act, each of which is described below.

[1] Grassetti Environmental Consulting, February 2003, *Understanding Environmental Impact Assessment*, pages 36 to 37.

a. California Endangered Species Act

The California Department of Fish and Game (CDFG) administers the California Endangered Species Act (CESA), which protects wildlife and plants listed as threatened and endangered by the California Fish and Game Commission. Like the federal Endangered Species Act, the State Endangered Species Act provides additional protection to threatened and endangered species in California.[2]

b. California Fish and Game Code

Under the California Fish and Game Code, the CDFG provides protection from "take" for a variety of species. The CDFG also 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 Department, incorporating necessary mitigation, and obtaining a Streambed Alteration Agreement. CDFG's jurisdiction extends to the top of banks and often includes the outer edge of riparian vegetation canopy cover.

c. California Native Plant Protection Act

The California Native Plant Protection Act of 1977 prohibits importation of rare and endangered plants into California, "take" of rare and endangered plants, and sale of rare and endangered plants. CESA defers to the California Native Plant Protection Act, which ensures that state-listed plant species are protected when state agencies are involved in projects subject to CEQA. In this case, plants listed as rare under the California Native Plant Protection Act are not protected under CESA but rather under CEQA.

[2] The State Endangered Species Act does not supersede the federal Endangered Species Act.

3. Local Regulations

a. The Alameda County Tree Ordinance (0-2004-23)

This ordinance provides protection to any tree in the public right-of-way (ROW) within the Eden Area which meets the following criteria:

> *"Any woody perennial plant characterized by having a single trunk or multi-trunk structure at least ten feet high and having a major trunk that is at least two inches in diameter taken at breast height (DBH) taken at 4.5 feet from the ground. It shall also include those plants generally designated as trees and any trees that have been planted as replacement trees under the County Tree Ordinance or any trees planted by the County."*[3]

Violation of this ordinance would be considered a significant impact. Development and redevelopment activities within the Eden Area would be obligated to adhere to this ordinance in order to minimize the impact that development or redevelopment of the Eden Area may have on local trees.

B. Existing Setting[4]

Most of the Eden Area has been impacted by urban development; however, even in the most urban areas, the natural environment persists. This section discusses the natural communities and special status species in the Eden Area as well as potential impact as a result of the proposed General Plan. Special status species are shown in Figure 4.10-1.

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[3] Alameda County Public Works Agency's website. http://www.acgov.org pwa/ordinance_policies_tree.shtml, accessed on March 6, 2006.

[4] All data in this section are from the *Alameda County ROSA Project: Biological Resources Report*, Prepared for Alameda County by Jones & Stokes. November 2002, unless otherwise indicated.

- big-scale balsamroot
- alkali milk-vetch
- fragrant fritillary
- Congdon's tarplant
- Diablo helianthella
- Valley Needlegrass Grassland
- burrowing owl
- hairless popcorn-flower
- western snowy plover
- salt-marsh wandering shrew
- Santa Cruz tarplant

FIGURE 4.10-1

SPECIAL STATUS SPECIES

COUNTY OF ALAMEDA
EDEN AREA DRAFT GENERAL PLAN EIR

1. Natural Communities

The Eden Area contains several diverse plant and animal communities, which are described below.

a. San Lorenzo Creek

San Lorenzo Creek runs from east to west through the Eden Area. The creek channelized through the Eden Area but retains its sandy bottom near the San Francisco Bay adjacent to San Lorenzo. San Lorenzo Creek is subject to tidal influence upstream through the Eden Area and west of the Union Pacific Railroad tracks. The mouth of San Lorenzo Creek, in the City of San Leandro, opens into a tidal marsh before it joins the San Francisco Bay.[5]

There are a number of efforts underway to conserve and reclaim the natural function of San Lorenzo Creek and enhance it as a multi-use riparian corridor. The watershed is an important habitat for Steelhead trout, a federally listed "threatened" species. Eden Area residents have identified San Lorenzo Creek as an important natural resource for their community. The Friends of San Lorenzo Creek, an organization formed in 2002, addresses concerns about the creek in its full course from the hills of Castro Valley to San Francisco Bay, as well as the associated watershed. Additionally, the City of San Leandro recently worked with local housing developers to restore the marsh lands around the mouth of San Lorenzo Creek at Historic Robert's Landing creating a link to the Bay Trail and an opportunity for an additional link between the Eden Area and an important regional resource.[6]

b. San Lorenzo Salt Marsh

Tidal salt marshes provide habitat for many plant and animal species which often include endangered species. Tidal salt marsh habitats are considered sensitive by the California Department of Fish and Game because of its rarity, high biological diversity, and susceptibility to disturbance or destruction.

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[5] EBMUD, B*ayside Groundwater Project Draft EIR*, 2001, page 3.6-1.

[6] Association of Bay Area Governments' website, http://www.abag.ca.gov/bayarea/baytrail/vtour/map4/access/Btsnldro/Btsnldro.htm, accessed on March 6, 2006.

Tidal salt marshes in the San Francisco Bay have been reduced by approximately 80 percent from their historic extent. The last remaining stand of tidal salt marsh in the unincorporated portion of Alameda County is a three-acre area found in San Lorenzo adjacent to the Hayward Shore Regional Park, along the San Francisco Bay.

The three-acre site in San Lorenzo is probably too small to support diverse or abundant wildlife but it may serve as a stepping stone for wildlife moving up and down the shore. The site is owned by Oro Loma Sanitary District and is currently unprotected and unmanaged. While strict regulation of impacts on tidal salt marsh will likely protect the habitat, such sites require management to improve their function.

2. Special-Status Plant and Animal Species

Special-status species include those listed as threatened or endangered by State or federal governments, candidates for listing, species of special concern to the CDFG, and plants listed by the California Native Plant Society. A number of special-status species have been recorded and or are presumed to occur in the Eden Area. Most of these are associated with the aquatic habitats of the San Lorenzo Creek or of the Tidal Salt Marsh. The recorded and suspected special-status species in the Eden Area are discussed in this section. Figure 4.10-1 shows the likely habitats of special status species described in this section.

a. Sensitive Plant Species

i. Big-Scale Balsamroot

Balsamorhiza macrolepis var. macrolepis, also known as Big-scale Balsamroot, is a member of the family Asteraceae and is a perennial herb that is native to California, while being endemic (limited) to California alone. Furthermore, it is included by the California Native Plant Society on list 1B which refers to plant species that are rare, threatened, or endangered in CA and elsewhere.[7]

[7]Calflora's website. http://www.calflora.org/cgi-bin/species_query.cgi?where-calrecnum=1052, accessed on March 1, 2006.

The Balsamroot has been documented as occurring in the Fairmount Campus portion of the Eden Area.

ii. Alkali Milk-Vetch

Astragalus tener var. tener, also known as Alkali Milk-Vetch, is a member of the Fabaceae family, and is an annual herb that is native to California, while being endemic (limited) to California alone. Furthermore, it is included by the California Native Plant Society on list 1B which refers to plant species that are rare, threatened, or endangered in CA and elsewhere.[8] This species found in alkaline/saline soils in vernally wet playas, flats, as well as foothill grasslands[9] occurs in the southeastern portion of the Cherryland area and throughout most of the Mt. Eden Area as well.

iii. Fragrant Fritillary

Fritillaria liliacea, also known as the Fragrant Fritillary, is a monocot in the family Liliaceae and is a perennial herb (bulb) that is native to California, while being endemic (limited) to California alone. Furthermore, it is included by the California Native Plant Society on list 1B which refers to plant species that are rare, threatened, or endangered in CA and elsewhere.[10] This species is found in heavy clay soils in cismontane woodland, coastal prairie, coastal scrub, and valley and foothill grassland.[11] The fragrant fritillary occurs in the Fairmont Campus portion of the Eden Area.

iv. Congdon's Tarplant

Hemizonia parryi ssp. congdonii, also know as Congdon's Tarplant, is a dicot in the family Asteraceae and is an annual herb that is native to California,

[8] Calflora's website. http://www.calflora.org/cgi-bin/species_query.cgi?where-calrecnum=1052, accessed on March 1, 2006.

[9] California Native Plant Society's website, http://cnps.org/index.htm, accessed on March 6, 2006.

[10] California Native Plant Society's website, http://cnps.org/index.htm, accessed on March 6, 2006.

[11] California Native Plant Society's website, http://cnps.org/index.htm, accessed on March 6, 2006.

while being endemic (limited) to California alone. Furthermore, it is included by the California Native Plant Society on list 1B which refers to plant species that are rare, threatened, or endangered in CA and elsewhere.[12] This species occurs in alkaline, often heavy clay soils in mesic areas within grassland communities with ruderal and native alkali-tolerant plants. Congdon's Tarplant occurs in the Ashland and Mt. Eden portions of the Eden Area.

v. Diablo Helianthella

Helianthella castanea, also known as Diablo Helianthella, is a dicot in the family Asteraceae and is a perennial herb that is native to California, while being endemic (limited) to California alone. Furthermore, it is included by the California Native Plant Society on list 1B which refers to plant species that are rare, threatened, or endangered in CA and elsewhere.[13] This species is primarily found in valley grasslands in California.[14] Diablo Helianthella occurs in the area just east of the El Portal Ridge/Cherryland border outside the Eden Area.

vi. Hairless Popcorn-Glower

Plagiobothrys glaber, also known as the Hairless Popcorn-Glower, is a dicot in the family Boraginaceae and is an annual herb that is native to California which is believed to be extinct, but has not yet been verified. This species is normally found in meadows, salt-marshes and wetlands.[15] Although it is included by the California Native Plant Society on list 1A (presumed extinct), it is thought that the plant occurs within the Mt. Eden Area portion of the Eden Area.

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[12] California Native Plant Society's website, http://cnps.org/index.htm, accessed on March 6, 2006.

[13] California Native Plant Society's website, http://cnps.org/index.htm, accessed on March 6, 2006.

[14] California Native Plant Society's website, http://cnps.org/index.htm, accessed March 6, 2006.

[15] Calflora's website, http://www.calflora.org/cgi-bin/species_query.cgi?special= xwalk&where-calrecnum=6569&one=T, accessed on March 6, 2006.

vii. Santa Cruz Tarplant

Holocarpha macradenia, also known as Santa Cruz Tarplant, is a dicot in the family Asteraceae and is an annual herb that is native to California, while being endemic (limited) to California alone. This species normally occurs in costal prairies and valley grasslands.[16] Furthermore, it is included by the California Native Plant Society on list 1B which refers to plant species that are rare, threatened, or endangered in CA and elsewhere. It is also listed by the State of California as Endangered (listed Sep 1979) and by the Federal Government as Threatened. The Santa Cruz Tarplant occurs in the Cherryland portion of the Eden Area.

b. Sensitive Animal Species

i. Steelhead or Rainbow Trout

Steelhead and/or Rainbow trout populations were observed in a number of Alameda County watersheds including San Lorenzo Creek. Urban development and destruction of riparian habitats has severely limited the population of the species which is listed as threatened under the federal Endangered Species Act. Conservation efforts are underway and are particularly active on the San Lorenzo Creek Watershed.

ii. California Red Legged Frog

The California Red Legged Frog used to be common from as far north as Redding in Shasta County to as far south as Baja California. While the species is still common in the San Francisco Bay Area, the species is listed as federally threatened because its distribution has been seriously eroded. In the Eden Area, the California Red Legged Frog may be found in the East Bay Hills area, around the Fairmont Area, Anthony Chabot and Lake Chabot Regional Parks.

[16] Calflora's website, http://www.calflora.org/cgi-bin/species_query.cgi?special= xwalk&where-calrecnum=6569&one=T, accessed on March 6, 2006.

iii. Burrowing Owl

Athene cunicularia, also know as the Burrowing Owl, is different from many other birds in that it lives in a burrow rather than in a tree. Burrowing owls look much the typical owl except that it has thin, stilt-like legs and that it is much smaller (approximately 8 inches in height with a wing span of 22 inches, weighing between 4.6 ounces). They have yellow eyes, with a yellow bill, and brown upperparts with white spotting on the head, back and wings. Their main food sources consist of insects, rodents, toads and dead animals. Due to insecticide use, burrowing owl numbers worldwide have declined significantly. In California, the burrowing owl is listed as a State species of special concern, due to their declining numbers. The Burrowing Owl occurs in a very small portion of the San Lorenzo area near the San Lorenzo Canal.

iv. Western Snowy Plover

Charadrius alexandrinus nivosus, also known as the Western Snowy Plover, is a small shorebird measuring 6 to 6.5 inches and length and weighing between 1.2 and 2 ounces. The bird is characterized by its pale brown upperparts, dark patches on either side of the breast and dark gray to blackish legs.[17] Human disturbances of plover habitat during the breeding season severely impacts population numbers. More specifically, activities that impact plover populations include sand deposition, beach cleaning, construction of breakwaters and jetties, dune stabilization using vegetation and off-road vehicles driven in nesting areas. The Western Snowy Plover is designated as a federally endangered species, and is listed as occurring in the Mt. Eden Area. However, it has not been confirmed that the plover occurs within the project boundaries.

v. Salt-Marsh Wandering Shrew

Sorex vagrans halicoetes, also known as the salt-marsh wandering shrew, is a small mouse-like mammal that inhabits areas in tidal marshes that provide dense cover, abundant food (such as invertebrates), suitable nesting sites, and

[17] Sacramento Fish & Wildlife Office Species Account's website, http://www.fws.gov/sacramento/es/animal_spp_acct/western_snowy_plover. Accessed on March 1, 2006

fairly continuous ground moisture.18 Shrews are not related to rodents, which have four clawed toes, whereas the shrew has five. Because of significant tidal marsh land loss in the San Francisco Bay area, the shrew as been listed as a California State species of concern. It is reported that this species is found in portions of the Mt. Eden Area.

vi. Salt Marsh Harvest Mouse

Reithrodontomys raviventris, also known as the "red-bellied harvest mouse," is a small native rodent in the Cricetidae family, which includes field mice, lemmings, muskrats, hamsters and gerbils. There are two subspecies: the northern (R. r. halicoetes) and southern (R. r. raviventris). The northern subspecies lives in the marshes of the San Pablo and Suisun bays, the southern in the marshes of Corte Madera, Richmond and South San Francisco Bay. Salt marsh harvest mice are critically dependent on dense cover and their preferred habitat is pickleweed (Salicornia virginica). Harvest mice are seldom found in cordgrass or alkali bulrush.

vii. California Clapper Rail

Rallus longirostris obsoletus, also known as the California Clapper Rail, is a salt marsh dwelling bird with gray or brown underparts, vertical barred flanks and belly, and a rust colored breast. Western populations normally have orange-brown colored underparts. The CCRs historic range was once from Humboldt Bay to Morro Bay, with significant populations found in the San Francisco Bay. Today, populations of the CCR are restricted to San Francisco Bay, San Pablo Bay as well as Tomales Bay.19 Within tidal marshes, key habitat areas for the clapper rail are found in tidal creeks and and/or channel edges. The closest Clapper Rail habitat is located just west of the Mt. Eden portion in the tidal marshes of the San Francisco Bay, outside of the study area.

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[18] California Department of Fish and Game's website, www.dfg.ca.gov, accessed on March 1, 2006.

[19] San Francisco Estuary Invasive Spartina Project, April 2003, *Draft Programmatic Environmental Impact Statement/Environmental Impact Report*, 3.3 Biological Resources.

C. Standards of Significance

The Eden Area General Plan would result in a significant impact on biological resources if it would:

- 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 Game or U.S. Fish and Wildlife Service.
- 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 Game or US Fish and Wildlife Service.
- 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.
- 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.
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.
- 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

The following section discusses the potential changes that may result with adoption and implementation of the General Plan, as well an analysis of whether these changes would result in significant environmental impacts to biological resources.

Over the life of the proposed General Plan it is inevitable that development and redevelopment would place significant strain and pressure on sensitive areas and species within the Eden Area. Although the General Plan does not contain measures addressing protection of biological resources, the policies sent forth by the C*ounty of Alameda's Resource Conservation Element* of the Alameda County General Plan as well as the *Alameda County General Polices and Ordinances* apply to the Eden Area.

The Alameda County Tree Ordinance (no. 0-2004-23) finds that the preservation of trees within the County right-of-way enhances the natural scenic beauty, sustains the long term potential increase in property values, protects the surrounding area from soil erosion, moderates the effects of extreme weather conditions and temperatures, improves air quality including increasing the oxygen output of the area which is needed to combat air pollution, creates the identity and quality of the County's businesses and residences, and improves the attractiveness of the County to visitors.

Under the Resource Conservation Element (RCE), Policy 4.1.1 requires the County to seek to locate uses or development that would seriously impact or jeopardize biological resource values away from areas of significant biological resources. Further strengthening this point is Policy 4.2.1, which requires the County to prioritize for the preservation of lands that contain significant biotic resources should be left substantially undeveloped. These lands include riparian habitats, habitat of rare or endangered fish and wildlife, or species of economic value either commercially or as game species, wetlands supporting concentrations of waterfowl, among others. Furthermore, Policy 4.2.2 would require the County to encourage the protection and restoration of sensitive

and rare habitat types in the County. These habitat types include, but are not limited to: native grasslands, riparian woodlands, oak woodlands, seasonal and permanent wetlands and tidal lands.

The RCE also addresses sensitive habitat areas. Policy 4.3.1 requires the County to use the designation of Sensitive Habitat Areas (SHAs) as a means to protect the County's unique biological resources from the threat of development. In order to further protect these areas, all SHA's shall be placed under the Resource Management zoning district; additionally, a "Sensitive Habitat Overlay District" shall be established that will restrict permitted and accessory uses normally allowed under the RM (Resource Management) District. If buffering is needed for additional protection, lands immediately surrounding the SHAs may require redesignation to Resource Management.

Additionally, Policy 4.4.4 requires the County to support biological resource protection projects in Alameda County, such as the Alameda Watershed Steelhead Restoration Plan initiated through the efforts of the Alameda County Flood Control and Water Conservation District/Clean Water Division and the Alameda Creek Fisheries Restoration Workgroup. The County shall also support and coordinate with regional conservation planning efforts.

The identified County measures and policies mentioned above, which are aimed at minimizing loss of biological resources and habitat, would reduce potential impacts to a less than significant level.

E. Impacts and Mitigation Measures

Since no impacts were identified, no mitigation measures are required.

4.11 AIR QUALITY

This section describes the impacts of the proposed General Plan on local and regional air quality. This section was prepared by Illingworth & Rodkin, Inc. using methodologies and assumptions recommended within the air quality CEQA guidelines of the Bay Area Air Quality Management District (BAAQMD).

A. Existing Setting

1. Regulatory Setting

The Federal Clean Air Act governs air quality in the United States. In addition to being subject to federal requirements, air quality in California is also governed by more stringent regulations under the California Clean Air Act. At the federal level, the United States Environmental Protection Agency (EPA) administers the Clean Air Act (CAA). The California Clean Air Act is administered by the California Air Resources Board (CARB) at the State level and by the Air Quality Management Districts at the regional and local levels. The Bay Area Air Quality Management District (BAAQMD) regulates air quality at the regional level, which includes the nine-county Bay Area.

a. United States Environmental Protection Agency

The EPA is responsible for enforcing the federal CAA. The EPA is also responsible for establishing the National Ambient Air Quality Standards (NAAQS). The NAAQS are required under the 1977 CAA and subsequent amendments. The EPA regulates emission sources that are under the exclusive authority of the federal government, such as aircraft, ships, and certain types of locomotives. The agency has jurisdiction over emission sources outside state waters (e.g. beyond the outer continental shelf) and establishes various emission standards, including those for vehicles sold in states other than California. Automobiles sold in California must meet the stricter emission standards established by the CARB.

b. California Air Resources Board

In California, the CARB, which became part of the California Environmental Protection Agency in 1991, is responsible for meeting the State requirements of the federal CAA, administering the California CAA, and establishing the California Ambient Air Quality Standards (CAAQS). The California CAA, as amended in 1992, requires all air districts in the State to endeavor to achieve and maintain the CAAQS. The CAAQS are generally more stringent than the corresponding federal standards and incorporate additional standards for sulfates, hydrogen sulfide, vinyl chloride and visibility reducing particles. The CARB regulates mobile air pollution sources, such as motor vehicles. The agency is responsible for setting emission standards for vehicles sold in California and for other emission sources, such as consumer products and certain off-road equipment. The CARB established passenger vehicle fuel specifications, which became effective on March 1996. The CARB oversees the functions of local air pollution control districts and air quality management districts, which in turn administer air quality activities at the regional and county level.

c. Bay Area Air Quality Management District

In 1955, the California Legislature created the BAAQMD. The agency is primarily responsible for assuring that the national and State ambient air quality standards are attained and maintained in the Bay Area. The BAAQMD is also responsible for adopting and enforcing rules and regulations concerning air pollutant sources, issuing permits for stationary sources of air pollutants, inspecting stationary sources of air pollutants, responding to citizen complaints, monitoring ambient air quality and meteorological conditions, awarding grants to reduce motor vehicle emissions, conducting public education campaigns, as well as many other activities. The BAAQMD has jurisdiction over much of the nine-county Bay Area counties, including Napa County.

2. Ambient Air Quality Standards

Both the United States Environmental Protection Agency (EPA) and the California Air Resources Board (CARB) have established ambient air quality standards for common pollutants. These ambient air quality standards repre-

sent safe levels of contaminants that avoid specific adverse health effects associated with each pollutant. The ambient air quality standards cover what are called "criteria" pollutants because the health and other effects of each pollutant are described in criteria documents.[1]

Federal and State of California ambient air quality standards for important pollutants are summarized in Table 4.11-1. The federal and State ambient standards were developed independently with differing purposes and methods, although both processes shared the goal of avoiding health related effects. As a result, the federal and State standards differ in some cases. In general, the state standards are more stringent, particularly for ozone and particulate matter ($PM_{2.5}$ and PM_{10}) pollutants.

The State of California regularly reviews scientific literature regarding the health effects of exposure to particulate matter and other pollutants. On July 5, 2003, the CARB adopted new standard for particulate matter, lowering the level of the annual standard for PM_{10} and establishing a new annual standard for $PM_{2.5}$ (particulate matter 2.5 micrometers in diameter and smaller).

In addition to the criteria pollutants discussed above, Toxic Air Contaminants (TACs) are another group of pollutants of concern. TACs are injurious in small quantities and are regulated by the federal and State governments despite the absence of criteria documents. The identification, regulation and monitoring of TACs is relatively recent compared to that for criteria pollutants. Unlike criteria pollutants, TACs are regulated on the basis of risk rather than specification of safe levels of contamination.

3. Existing Ambient Air Quality

State and national ambient air quality standards cover a wide variety of pollutants, however, only a few of these pollutants are problems in the Bay Area

[1] CARB, *Ambient Air Quality Standards* (7/9/03), http://www.arb.ca.gov.aq./ aaqs2.pdf.

TABLE 4.11-1 **FEDERAL AND STATE AMBIENT AIR QUALITY STANDARDS**

Pollutant	Averaging Time	Federal Primary Standard	State Standard
Ozone	1-Hour	–	0.09 ppm
	8-Hour	0.08 ppm	0.07 ppm
Carbon Monoxide	8-Hour	9 ppm	9.0 ppm
	1-Hour	35.0 ppm	20.0 ppm
Nitrogen Dioxide	Annual	0.05 ppm	–
	1-Hour	–	0.25 ppm
Sulfur Dioxide	Annual	0.03 ppm	–
	24-Hour	0.14 ppm	0.04 ppm
	1-Hour	–	0.25 ppm
PM_{10}	Annual	50 ug/m^3	20 ug/m^3
	24-Hour	150 ug/m^3	50 ug/m^3
$PM_{2.5}$	Annual	15 ug/m^3	12 ug/m^3
	24-Hour	65 ug/m^3	–
Lead	30-Day Average	–	1.5 ug/m^3
	3-Month Average	1.5 ug/m^3	–

Notes: ppm = parts per million; ug/m3 = Micrograms per Cubic Meter.
Source: CARB 2005.

either due to the strength of the emission or the climate of the region. The BAAQMD has for many years operated a multi-pollutant monitoring site in Hayward and Fremont, allowing analysis of trends in air quality. The Hayward station is closest and most representative of the area, but does not measure particulate matter. The nearby Fremont station does measure both PM_{10} and $PM_{2.5}$ (starting in 2002). The number of days that air pollutant levels exceeded State or federal standards near the plan area or the entire Bay Area is reported in Table 4.11-2. The national 8-hour ozone standard was exceeded in Hayward once in 2001 and once in 2003. The more stringent one-hour State standard was exceeded two times in 2001 and three times in 2003. The State 24-hour PM_{10} standard was exceeded on three measurement days in 2001, one day in 2002 and one day in 2005. Neither station has not reported

TABLE 4.11-2 **SUMMARY OF MEASURED AIR QUALITY EXCEEDANCES**

Pollutant	Standard	Monitoring Station	Days Exceeding Standard 2001	2002	2003	2004	2005
O_3	NAAQS 1-hr	Hayward	0	0	0	0	0[a]
		Bay Area	1	2	1	0	0[a]
	NAAQS 8-hr	Hayward	1	0	1	0	0
		Bay Area	7	7	7	0	0
	CAAQS 1-hr	Hayward	2	0	3	0	0
		Bay Area	15	16	19	7	7
PM_{10}	NAAQS 24-hr	Fremont	0	0	0	0	0
		Bay Area	0	0	0	0	0
	CAAQS 24-hr	Fremont	3	1	0	0	1
		Bay Area	10	6	6	7	7
$PM_{2.5}$	NAAQS 24-hr	Fremont	NM	0	0	0	0
		Bay Area	5	5	0	1	1
All Other (CO, NO_2, Lead, SO_2)	All Other	Hayward	0	0	0	0	0
		Bay Area	0	0	0	0	0

[a] This standard was revoked in June 2005.

Notes: NM = Not Measured.

Source: BAAQMD, Bay Area Air Pollution Summaries 2000-2004 and CARB Air Quality Data 2006.

any exceedances of other ambient air quality standards over the past five years.

Problem air pollutants emitted in the plan area and the Bay Area include ozone, particulate matter (PM_{10}), and toxic air contaminants (TACs). The Bay Area is currently classified as a federal and State nonattainment area for ozone. Ground level ozone, often referred to as smog, is not emitted directly, but is formed in the atmosphere through complex chemical reactions. While there are few exceedances of State or federal ozone standards in the plan area,

the Bay Area as a whole has experienced unhealthy ozone levels on seven to 19 days annually. Emissions from motor vehicle use in the plan area contribute to high ozone levels in other parts of the Bay Area. Motor vehicles are the largest source of ozone precursors emissions (i.e. nitrogen oxides and reactive organic gases) in the Bay Area.

4. Attainment Status

Federal and State air quality laws require identification of areas not meeting the ambient air quality standards. All such areas must develop regional air quality plans to eventually attain the standards. Areas that do not violate ambient air quality standards are considered to have attained the standard. Violations of ambient air quality standards are based on air pollutant monitoring data and are judged for each air pollutant. The Bay Area as a whole does not meet State or federal ambient air quality standards for ground level O_3 and State standards for fine particulate matter (PM_{10}).

Under the federal CAA, the EPA has designated the region as marginally nonattainment for the newer more stringent 8-hour O_3 standard. Under this rulemaking, EPA revoked the 1-hour ozone NAAQS. EPA now requires the region to adopt a plan that will bring it into attainment with the 8-hour ozone NAAQS by 2007. The Bay Area has met the CO standards for over a decade and is classified attainment maintenance by the EPA. The EPA grades the region unclassified for all other air pollutants, which include PM_{10} and $PM_{2.5}$.

At the state level, the region is considered serious non-attainment for ground level O_3 and non-attainment for PM_{10}. California ambient air quality standards are more stringent than the national ambient air quality standards. The region is required to adopt plans on a triennial basis that show progress towards meeting the State O_3 standard. The area is considered attainment or unclassified for all other pollutants.

5. Sensitive Receptors

Some groups of people are more affected by air pollution than others. The State has identified the following people who are most likely to be affected by air pollution: children under 14, the elderly over 65, athletes, and people with cardiovascular and chronic respiratory diseases. These groups are classified as sensitive receptors. Locations that may contain a high concentration of these sensitive population groups include residential areas, hospitals, day-care facilities, elder care facilities, elementary schools, and parks.

Children may be more vulnerable to environmental contaminants than adults. The Children's Environmental Health Protection Act (State Senate Bill 25) established specific requirements to determine if children are adequately protected from the harmful effects of air pollution. The Act requires CARB and the Office of Environmental Health Hazard Assessment (OEHHA) to review all health based California's Ambient Air Quality Standards to determine whether they adequately protect public health, including infants and children. Those found possibly inadequate would undergo full review and possible revision. The Act also requires CARB to determine if the current air monitoring network established to measure air pollution in California adequately reflects the levels of air pollutants that infants and children are breathing. Additionally, the Act also requires that the State's list of Toxic Air Contaminants be reviewed to identify those that might cause infants and children to be especially susceptible to illness and to institute Air Toxic Control Measures (ATCM) that would be needed to reduce exposures. In 2005, the CARB added a new eight-hour ozone standard in response to a review of the air quality standards required by this Act. The standard is more stringent than the 8-hour standard established at the federal level.

6. Air Quality Planning

a. Regional Air Quality Plans

The BAAQMD along with the other regional agencies (i.e. Association of Bay Area Governments and the Metropolitan Transportation Commission) has prepared the Ozone Attainment Plan to address the federal standard for

ozone. The *Bay Area 2005 Ozone Strategy*[2] is the most recently approved regional Clean Air Plan. It was adopted in January 2006 to address the more stringent requirements of the California Clean Air Act with respect to ozone. This plan includes a comprehensive strategy to reduce emissions from stationary, area, and mobile sources. The plan objective is to indicate how the region would attain the stricter state air quality standards, as mandated by the California Clean Air Act. The plan is designed to achieve a region-wide reduction of ozone precursor pollutants through the expeditious implementation of all feasible measures. Air quality plans addressing the California Clean Air Act are developed on a triennial basis, with the latest approved plan developed in 2000 (i.e. *Bay Area 2000 Clean Air Plan*[3]). This plan proposes implementation of transportation control measures (TCMs) and programs such as *Spare the Air*. Some of these measures or programs rely on local governments for implementation.

A key element in air quality planning is to make reasonably accurate projections of future human activities that are related to air pollutant emissions. Most important is vehicle activity. The BAAQMD uses population projections made by the Association of Bay Area Governments and vehicle use trends made by the Metropolitan Transportation Commission to formulate future air pollutant emission inventories. The basis for these projections comes from cities and counties. In order to provide the best plan to reduce air pollution in the Bay Area, accurate projections from local governments are necessary. When individual projects are not consistent with these projections, they cumulatively reduce the effectiveness of air quality planning in the region.

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[2] *Bay Area 2005 Ozone Strategy*, Metropolitan Transportation Commission, Bay Area Air Quality Management District, and Association of Bay Area Governments, January 4, 2006.

[3] *Bay Area 2000 Clean Air Plan*, Bay Area Air quality Management District, December 20, 2000.

b. Alameda County

Alameda County adopted a wood smoke ordinance in 2001. The ordinance, affecting new construction, prohibits the installation of any woodstove except a pellet stove or an EPA-certified stove. Fireplaces must be gas-fired or have EPA-certified inserts. Traditional wood burning masonry fireplaces or factory-built fireplaces are not allowed. The ordinance would greatly reduce new particulate matter (PM10 and PM2.5) emissions from new residential development.

7. Buffer Zones

The BAAQMD recommends that general plans include buffer zones to separate sensitive receptors from sources of air toxic contaminants and odors. In April 2005, the CARB released the final version of the *Air Quality and Land Use Handbook*, [4] which is intended to encourage local land use agencies to consider the risks from air pollution prior to making decisions that approve the siting of new sensitive receptors (e.g. homes or daycare centers) near sources of air pollution. Unlike industrial or stationary sources of air pollution, siting of new sensitive receptors does not require air quality permits, but could create air quality problems. The primary purpose of the handbook is to highlight the potential health impacts associated with proximity to common air pollution sources, so that those issues are considered in the planning process. CARB makes recommendations regarding the siting of new sensitive land uses near freeways, truck distribution centers, dry cleaners, gasoline dispensing stations, and other air pollution sources. These "advisory" recommendations, summarized in Table 4.11-3, are based primarily on modeling information and may not be entirely reflective of conditions in the Plan Area. Siting of new sensitive land uses within these recommendation distances may be possible, but only after site-specific studies are conducted to identify the actual health risks. CARB acknowledges that land use agencies have to balance other siting considerations such as housing and transportation needs, economic development priorities and other quality of life issues.

[4] *Air Quality and Land Use Handbook: A Community Health Perspective*, California Environmental Protection Agency and the California air Resources Board, April 2005.

TABLE 4.11-3 **CARB RECOMMENDED SETBACK DISTANCES FOR COMMON SOURCES OF TOXIC AIR CONTAMINANTS**

Source Type	Recommended Buffer Distance
Freeways and busy arterial roadways	500 feet.
Distribution Centers with 100 or more daily truck trips or 40 daily truck trips that use refrigeration units.	1,000 feet.
Dry cleaners (onsite dry cleaning)	300 feet for any dry cleaning operation. At least 500 feet for operations with two or more machines.
Large gasoline stations	50 feet for typical gas stations. Up to 300 feet for large gas stations.

Source: California Environmental Protection Agency and California Air Resource Board, April 2005, *Air Quality and Land Use Handbook: A Community Health Perspective*.

B. Standards of Significance

The Bay Area Air Quality Management District has developed guidelines and thresholds of significance for local plans. Inconsistency with the most recently adopted Clean Air Plan (CAP) is considered a significant impact. According to the BAAQMD, the following criteria must be satisfied for a local plan to be determined to be consistent with the CAP and not have a significant air quality impact:

- The local plan should be consistent with the CAP population and Vehicle Miles Traveled (VMT) assumptions. This is demonstrated if the population growth over the planning period will not exceed the values included in the current CAP, and the rate of increase in VMT is equal to or lower that the rate of increase in population.
- The local plan demonstrates reasonable efforts to implement the Transportation Control Measures (TCMs) included in the CAP that identify cities as implementing agencies.
- For local plans to have a less than significant impact with respect to potential odors and/or toxic air contaminants, buffer zones should be estab-

lished around existing and proposed land uses that would emit these air pollutants. Buffer zones to avoid odors and toxics impacts should be reflected in local plan policies, land use maps, and implementing ordinances.

- In addition, the plans should not lead to development that would lead to violations of ambient air quality standards.

C. Impact Discussion

1. Implementation of Transportation Control Measures

The 2005 Ozone Strategy (i.e. BAAQMD's most recent Clean Air Plan) includes 20 transportation control measures, which seven require participation at the local level. The latest set of adopted TCMs, which local governments are considered as implementing agencies, are listed by the BAAQMD in their CEQA Guidelines. The General Plan policies should include all those measures that are consistent with the County's responsibility. The measures that require action by the County are described below.

a. TCM #1. Support Voluntary Employer-Based Trip Reduction Programs

The General Plan does not include specific polices that would support this Clean Air Plan TCM #1. However, Circulation Element, Goal CIR-1, P5 would require that new developments mitigate the full impacts of their projects on the transportation system. A variety of mitigation measures should be considered, including impact fees, street improvements and transportation demand management (TDM) measures. Policy P6 requires that new developments incorporate design features that encourage use of alternative modes such as transit, bicycling and walking. Action A7 of these Circulation Element policies would develop a local TDM program to identify realistic target reductions in automobile travel and desirable mode splits. The County would then work with employers in the Eden Area to ensure that these targets are met.

b. TCM #9. Improve Bicycle Access and Facilities

The General Plan includes policies and implementation plans that reasonably implement this TCM. Circulation Element Goal CIR-7, Policy P1 considers bicycling an essential and integral part of the County's circulation network. Seven specific policies support Goal CIR-7 that would "Promote bicycling as a form of transportation within the Eden Area." Goal CIR-1, Policy P1 would develop context sensitive roadway designs to accommodate the needs of pedestrians and bicyclists. Policy P2 should include provisions for pedestrians and bicyclists when roadway modifications are made. Policy P3 would promote land use concepts that minimize automobile trips and encourage walking, bicycling and transit use. Goal CIR-2, Policy P3 and Action A1 would allow multi-modal LOS standards that consider the movement of transit vehicles and non-motorized travel such as bicycles or pedestrians.

c. TCM #10. Youth Transportation.

Public Facilities and Services Element, Goal PF-7, Policy P5 would provide safe and direct pedestrian and bicycle access to schools, including new sidewalks, bicycle paths, bike lanes on roadways and direct connections from residential areas as funding becomes available and redevelopment opportunities occur.

d. TCM #12. Improve Arterial Traffic Management

The Circulation Element of the General Plan includes policies that reasonably implement this TCM. Policy P7 of the Circulation Element (Goal CIR-1) would consider new traffic control device technologies in order to maximize efficiency of auto, transit, bicycle and pedestrian traffic. Circulation Element Goal CIR-3, Policy P2 would prioritize improvement measures where traffic congestion is an existing or imminent problem. Such priority would be given to measures that will provide for more efficient use of existing streets and highways, including the use, where appropriate, of high occupancy vehicle lanes, traffic signal synchronization, and restrictions on turning during peak travel periods.

e. TCM #15. Local Clean Air Plans, Policies and Programs

Circulation Element, Goal CIR-4, Policy P4 requires that the County consider creating shared parking districts in order to centralize and reduce the total amount of land allocated to parking in Districts and Corridors and Policy P5 encourages shared parking arrangements. Action A1 would require the County to review and update parking requirements in the zoning code to include a reduction in the required number of spaces and provisions for shared parking in Corridors and Districts.

f. TCM #19. Pedestrian Travel

The City's General Plan includes policies and implementation plans that reasonably implement this TCM. Many of the policies and actions described above that support TCM# 9 would also support this TCM. Circulation Element Goal CIR-6, Policy P1 considers walking an essential and integral part of the County's circulation network. Ten specific policies support Goal CIR-6, which would "Complete and enhance the pedestrian circulation network serving the Eden Area" In addition, Goal CIR-4, Policy P1 would emphasize pedestrian and transit access to adjacent land uses in the corridors identified in the Land Use Element (East. 14th/Mission Boulevard, Hesperian Boulevard, 'A' Street and Lewelling Boulevard). Policy P2. would allow pedestrian and transit circulation to take precedence over the movement of motor vehicles at intersections located in and immediately adjacent to planning districts. Policy P6 of Goal CIR-4 would provide wide sidewalks in Districts and along Corridors or at least widened sidewalks at the most congested locations such as in Districts located along corridors and at bus stops. Goal CIR-5, policy P1 would encourage AC Transit and BART to provide transit service throughout the Eden Area, preferably within one-quarter mile of all residences, businesses, health care, parks and service facilities so that pedestrian travel is a real consideration.

g. TCM #20. Promote Traffic Calming Measures

Circulation Element Goal CIR-9, Policy P4 would implement traffic calming measures in order to reduce travel speeds and create a safer pedestrian environment. Priority measures should include street trees, pedestrian scaled light-

ing, speed bumps, traffic circles and bulb-outs at intersections. Goal CIR-1 would include policies and actions to revise LOS standards to accommodate higher levels of congestion for some streets such as in areas where pedestrian or transit travel may be prioritized. Action A3 of this Goal would reduce posted travel speeds in Districts to a maximum of 30 miles per hour.

As described above, the General Plan includes policies that reasonably implement TCMs that are included in the General Plan. Therefore, the General Plan for the Eden Area would not conflict with implementation of TCMs included in the latest Clean Air Plan.

2. Consistency with Clean Air Plan Projections

A key element in air quality planning is to make reasonably accurate projections of future human activities that are related to air pollutant emissions. When the 2005 Ozone Strategy was developed for the Bay Area it utilized the most recent projections developed by the Association of Bay Area Governments (ABAG) and vehicle activity projected by the Metropolitan Transportation Commission (MTC). These projections are based on the most recent projections using land use designators developed by Cities and Counties through the General Plan process.

Projections for the Eden Area associated with the General Plan that could be directly compared with ABAG and MTC projections are not available[5,6]. The 2000 census data indicate a population of 68,109 people living in 23,323 dwellings. Build out under the proposed General Plan would add 5,691 new residential dwellings, most of which (about 85%) would be multifamily units. Assuming a current household size of 2.92 people per household, the population would increase to 84,669 people in 2025, a 24% increase over 25 years. This would be similar to the growth rate anticipated by ABAG for Alameda County; and therefore, consistent with ABAG projections. MTC projects that VMT for Alameda County will grow at a much greater rate than popula-

[5] ABAG Projections 2003.

[6] MTC travel forecasts based on PABAG Projections 2003.

tion growth. Since daily VMT projections for the Eden Area are not available, this analysis assumes that VMT growth would exceed population growth as it would for the entire County.

The proposed General Plan includes Circulation Element policies and actions that, if adopted and implemented, would reduce vehicle travel; therefore, reducing air pollutant emissions. These are discussed below.

The Land Use Element of the proposed General Plan includes policies and actions that if adopted and implemented would further reduce VMT. Policy P8 of Goal LU-5 would allow Live-work development in areas that transition land uses, reducing commuter trips. Goal LU-7 and the supporting policies would create mixed use corridors, where services, jobs and homes would be in close proximity. The policies supporting this goal would also create or enhance a pedestrian-oriented environment. The Goal LU-8 would create Districts that are intended to be pedestrian-oriented centers of mixed use development. Goal LU-13 and the supporting policies would enhance economic development opportunities to balance the number of jobs per housing units. Furthermore, Policy P4 would strive to match the types of new jobs in the Eden Area with occupations of the residents. This would reduce commuter traveling. Under Goal LU-14, Policy P1, new commercial development shall be located in areas well served by public transit. Policy P2 would encourage commercial services that serve the routine needs of residents to be located in the mixed-use corridors and Districts.

These policies and actions would reduce VMT. However, it is not possible to predict that VMT growth with the proposed General Plan buildout would be less than the rate at which population would grow. Increased growth in VMT rates would result in emissions of ozone precursor emissions that may not have been taken into account during preparation of the Clean Air Plan. This could interfere with efforts to obtain both State and federal ambient air quality standards for ozone. Failure to meet certain clean air planning goals may trigger the need for further air pollution control measures that could harm the overall economy of the Bay Area.

3. Buffer Zones for Potential Source of Odor/Toxics

According to BAAQMD CEQA Guidance, for a general plan to have a less than significant impact with respect to odors and/or toxic air contaminants buffer zones should be established around existing and proposed land uses that would emit these air pollutants. Buffer zones to avoid odors and toxics impacts should be reflected in local plan policies, land use maps, and implementing ordinances.

In April 2005, CARB released the final version of the Air Quality and Land Use Handbook, which is intended to encourage local land use agencies to consider the risks from air pollution prior to making decisions that approve the siting of new sensitive receptors near sources of air pollution. The CARB recommended setbacks were presented in Table 4.11-3. Unlike industrial or stationary sources of air pollution, siting of new sensitive receptors does not require air quality permits, but could create air quality problems. The primary purpose of the CARB document is to highlight the potential health impacts associated with proximity to common air pollution sources, so that those issues are considered in the planning process. CARB makes recommendations regarding the siting of new sensitive land uses near freeways, truck distribution centers, dry cleaners, gasoline dispensing stations, and other air pollution sources. CARB acknowledges that land use agencies have to balance other siting considerations such as housing and transportation needs, economic development priorities and other quality of life issues.

The Public Safety Element Goal SAF-1, Policy P5. requires adequate separation between areas where hazardous materials are present and sensitive uses such as schools, residences and public facilities. The Land Use Element Goal LU-11, Policy P3 encourages the regulation of industrial uses to minimize air pollution impacts on adjoining land uses. Goal LU-15, Policy P1 and P2 would encourage new industrial uses and expand research and development office uses in existing industrial areas of the Eden Area, away from residences. Policy P4 would discourage new heavy industrial uses and allow existing heavy industrial uses to remain in place until such time as the property is re-

developed, at which point new development should reflect the land use regulations in the proposed General Plan and new zoning should be put in place.

The General Plan does not include policies to adequately buffer both existing and future sensitive receptors, from sources of toxic air contaminants and odors. This is a significant impact.

4. Carbon Monoxide Levels Near Major Intersections

Carbon monoxide emissions from traffic would be the pollutant of greatest concern at the local level. Congested intersections with a large volume of traffic have the greatest potential to cause high-localized concentrations of carbon monoxide. Since the early 1990s, carbon monoxide levels have been at healthy levels (i.e. below State and federal standards) in the Bay Area. As a result, the region has been designated as attainment for the standard.

Carbon monoxide emissions from traffic along major roadway segments with high traffic volumes and poor level of service (LOS) were evaluated. This included the busiest roadway segments operating at LOS of D, E, or F. The traffic-generated emissions of carbon monoxide were predicted using a screening version of the Caline4 line source dispersion model developed by the BAAQMD. The model requires inputs of roadway width, receptor distance, traffic volumes, and emission factors. Worst-case meteorological conditions are incorporated into the screening model. Existing and future traffic volumes for selected roadway segments were used. Emission factors used were calculated using the EMFAC2002 model, developed by the California Air Resources Board, with default assumptions for Alameda County during winter when carbon monoxide levels are highest. Predicted levels are added to background levels, based on the last three years of monitoring data from the nearest air quality monitoring station. The screening assessment is a worst-case analysis, designed to over predict carbon monoxide levels. A refined approach that involves use of a dispersion model is used where screening results indicate high concentrations that may result in adverse impacts.

TABLE 4.11-4 **PREDICTED EIGHT-HOUR WORST CASE CARBON MONOXIDE LEVELS (IN PPM)**

Description	2005 Existing[a]	General Plan Buildout[a] ~2020
Mission Blvd. at Hampton	7.4 ppm	4.2 ppm
Washington St. at Grant	6.0 ppm	3.7 ppm
Hesperian Blvd. at Bockman	8.9 ppm	4.4 ppm
Significance Thresholds (CAAQS)	9.0 ppm for maximum 8-hour exposure	

[a] Includes background concentration of 3.0 ppm.
Source: Illingworth & Rodkin, Inc., 2006

James A. Reyff [jreyff@illingworthrodkin.com]The worst study roadway links in the Eden Area, which include highest traffic volumes and high levels of congestion, were modeled to assess roadside carbon monoxide concentrations. These intersections along with the modeled concentrations are shown in Table 4.11-4. Although levels may differ slightly along these roadways, the overall concentrations would be well below health-based ambient air quality standards. The worst intersection, in terms of roadside air pollutant concentrations, has levels that are currently below ambient air quality standards. The concentrations are anticipated to decrease substantially in the future with improvements to exhaust systems and reformulated fuels. As a result, the impact on local air quality resulting from implementation of the General Plan would be less-than-significant.

5. Construction Air Pollutant Emissions

Construction of individual projects developed under the proposed General Plan would involve activities that result in air pollutant emissions. Construction activities such as demolition, grading, construction worker travel to and from project sites, delivery and hauling of construction supplies and debris to and from the project site, and fuel combustion by on-site construction

equipment would generate pollutant emissions. These construction activities would temporarily create emissions of dust, fumes, equipment exhaust, and other air contaminants. Dust emissions can lead to both nuisance and health impacts. PM_{10} is the pollutant of greatest concern that is emitted from construction, particularly during site preparation and grading. PM_{10} emissions from construction can vary daily, depending on various factors, such as the level of activity, type of construction activity taking place, the equipment being operated, weather conditions, and soil conditions. The BAAQMD has identified a set of feasible PM_{10} control measures for construction activities. According to the BAAQMD CEQA Guidelines, if all of these control measures are implemented, a less than significant impact is expected for PM_{10} emissions. In addition, the BAAQMD and CARB have regulations that address the handling of hazardous air pollutants such as lead and asbestos. Lead and asbestos emissions could occur from demolition activities and asbestos emissions could occur from disturbance of soils with naturally occurring asbestos (found in parts of the County). BAAQMD rules and regulations address the both the handling and transport of these contaminants. An air toxic control measure adopted by CARB requires measures to minimize asbestos emissions in areas known to have naturally occurring asbestos. The BAAQMD should be consulted prior to handling materials that contain hazardous contaminants such as lead or asbestos.

D. Impacts and Mitigation Measures

Impact AIR-1: Growth in the Eden Area associated with build out of the General Plan would not be consistent with the latest Clean Air Plan assumptions since population and VMT growth would exceed ABAG and MTC projections.

> Mitigation Measure AIR-1: A policy should be added to the Land Use Element requiring that new development projects be analyzed in accordance with the BAAQMD CEQA Guidelines. Appropriate mitigation

measures to reduce vehicle trips and vehicle miles traveled should be applied to projects.

Although implementation of Mitigation Measure AIR-1 would help to reduce air emissions associated with new development under the General Plan, there are no mitigation measures available beyond these measures that could reduce the level of the impact.

Results of Mitigation: *Significant and unavoidable.*

Impact AIR-2: Development under the General Plan could emit toxic air contaminants or odors that could affect nearby sensitive land uses. In addition, new sensitive receptors resulting from development under the General Plan may be exposed to sources of toxic air contaminants and odors.

Mitigation Measure AIR-2a: Add a new policy under Goal LU-11 of the Land Use Element that would require any new development that would emit air toxic contaminants or odors to provide adequate buffers to protect sensitive land uses from unhealthy levels of air pollution or objectionable odors.

Mitigation Measure AIR-2b: Add a new policy under Goal LU-11 of the Land Use Element requiring that any new development involving sensitive receptors shall be located an adequate distance from sources of air pollution and odor such as freeways, arterial roadways and stationary air pollutant sources. The following Action should be adopted to support this policy: "The County shall encourage that development projects including sensitive land uses (e.g. residences and schools) be located outside of the CARB recommended buffers for specific sources of air pollution (as shown in Table 4.11-3), to the extent feasible unless project specific analyses indicate an acceptable level of health risk. Project review should include an evaluation of the adequacy of setbacks and, if necessary, identify measures to reduce health risks."

Results of Mitigation**:** *Less-than-significant.*

Impact AIR-3: Construction associated with development of projects under the proposed General Plan would temporarily increase air pollutant emissions, possibly creating localized areas of unhealthy air pollution levels or air quality nuisances.

Mitigation Measure AIR-3: Apply control measures to reduce PM_{10} emissions from construction activities. The following list of feasible control measures, recommended by the BAAQMD for construction projects, shall be included as requirements at construction sites to reduce air pollutant emissions.

For all construction projects:

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

For construction sites greater than 4 acres in size:

- 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 traffic speeds on unpaved roads to 15 miles per hour.

- Install sandbags or other erosion control measures to prevent silt run-off to public roadways.
- Replant vegetation in disturbed areas as quickly as possible.

For construction sites that are located adjacent to sensitive receptors or warrant additional controls:

- Install wheel washers for all exiting trucks, or wash off all trucks and equipment leaving the site.
- Suspend grading activities when winds exceed 25 miles per hour (mph) and visible dust clouds cannot be prevented from extending beyond active construction areas.
- Limit the area subject to excavation, grading and other construction activity at any one time.

Results of Mitigation**:** *Less-than-significant.*

4.12 NOISE

This chapter discusses the existing noise environment in the unincorporated Eden Area of Alameda County and analyzes the potential impacts of the proposed General Plan on the Eden Area noise environment.

A. Existing Setting

This section begins with an overview of noise and noise regulations and then discusses the existing noise environment of the project site.

1. Noise Definitions

Noise may be defined as unwanted sound. The objectionable nature of the sound could be caused by its pitch or its loudness. Pitch is the height or depth of a tone or sound, depending on the relative rapidity (frequency) of the vibrations by which it is produced. Higher pitched signals sound louder to humans than sounds with a lower pitch. Loudness is intensity of sound waves combined with the reception characteristics of the ear. Intensity may be compared with the height of an ocean wave in that it is a measure of the amplitude of the sound wave. Technical terms are defined in Table 4.12-1.

There are several noise measurement scales, which are used to describe noise in a particular location. A decibel (dB) is a unit of measurement, which indicates the relative amplitude of a sound. The zero on the decibel scale is based on the lowest sound level that the healthy, unimpaired human ear can detect. Sound levels in decibels are calculated on a logarithmic basis. An increase of 10 dB represents a ten-fold increase in acoustic energy, while 20 dB is 100 times more intense, 30 dB is 1,000 times more intense, etc. There is a relationship between the subjective loudness of a sound and its intensity. Each 10 dB increase in sound level is perceived as approximately a doubling of loudness over a fairly wide range of intensities.

There are several methods of characterizing sound. The most common in California is the A-weighted sound level (dBA). All sound levels in this report

TABLE 4.12-1 **DEFINITIONS OF ACOUSTICAL TERMS**

Term	Definitions
Decibel, dB	A unit describing the amplitude of sound.
Frequency, Hz	The number of complete pressure fluctuations per second above and below atmospheric pressure.
A-Weighted Sound Level, dBA	Decibel level as measured using the A-weighting filter network which de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlating well with subjective reactions to noise. All sound levels in this report are A-weighted, unless reported otherwise.
L_{01}, L_{10}, L_{50}, L_{90}	The A-weighted noise levels that are exceeded 1%, 10%, 50%, and 90% of the time during the measurement period.
Equivalent Noise Level, L_{eq}	The average A-weighted noise level during the measurement period.
Community Noise Equivalent Level, CNEL	The average A-weighted noise level during a 24-hour day, obtained after addition of 5 decibels to sound levels measured from 7:00 pm to 10:00 pm and 10 decibels to sound levels measured between 10:00 pm and 7:00 am.
Day/Night Noise Level, L_{dn}	The average A-weighted noise level during a 24-hour day, obtained after addition of 10 decibels to levels measured in the night between 10:00 pm and 7:00 am.
L_{max}, L_{min}	The maximum and minimum A-weighted noise level during the measurement period.
Ambient Noise Level	The composite of noise from all sources near and far. The normal or existing level of environmental noise at a given location.
Intrusive	Noise, which intrudes over and above the existing ambient noise at a given location. Relative intrusiveness depends on amplitude, duration, frequency, time of occurrence and tonal or informational content as well as the prevailing ambient noise level.

Source: Illingworth & Rodkin, Inc., 2006.

are A-weighted, unless reported otherwise. This scale gives greater weight to the frequencies of sound to which the human ear is most sensitive. Representative outdoor and indoor noise levels in units of dBA are shown in Table 4.12-2.

TABLE 4.12-2 **TYPICAL SOUND LEVELS**

Outdoor Sound	dBA	Indoor Sound	Threshold
	140		
Civil Defense Siren (100')	130		
Jet Takeoff (200')	120		Pain Threshold
	110		
Diesel Pile Driver (100')	100	Rock Music Concert	Very Loud
	90	Boiler Room Printing Press Plant	
Freight Cars (50')	80		
	70	In Kitchen With Garbage Disposal Running	Moderately Loud
Freeway (100') Vacuum Cleaner (10')	60	Data Processing Center	
Light Traffic (100') Large Transformer (200')	50	Department Store	
	40	Private Business Office	
Soft Whisper (5')	30	Quiet Bedroom	Quiet
	20		
	10	Recording Studio	
	0		Threshold of Hearing

Source: Illingworth & Rodkin, Inc., 2006

Because sound levels can vary markedly over a short period of time, a method for describing either the average character of the sound or the statistical behavior of the variations must be utilized. Most commonly, environmental sounds are described in terms of an average level that has the same acoustical

energy as the summation of all the time-varying events. This energy-equivalent sound/noise descriptor is called Leq. The most common averaging period is hourly, but it can be of any duration.

Since the sensitivity to noise increases during the evening and at night – because excessive noise interferes with the ability to sleep – 24-hour descriptors have been developed that give penalties to quiet-time noise events. The Community Noise Equivalent Level, CNEL, is a measure of the cumulative noise exposure in a community, with a 5 dB penalty added to evening (7:00 p.m. - 10:00 p.m.) and a 10 dB addition to nocturnal (10:00 p.m. - 7:00 a.m.) noise levels.

2. Regulatory Setting

In addition to the policies in this Noise Element, community noise within the unincorporated Eden Area of Alameda County is currently covered by the guidelines established in the Alameda County Noise Regulations. Other noise policies that affect development in the area are those established by the California Noise Insulation Standards, the California Environmental Quality Act (CEQA), the Federal Highway Administration (FHWA) and the California Department of Transportation (Caltrans) regulating highway noise and the State of California and the Federal Aviation Administration (FAA) regulating airport noise. A review of these noise guidelines and regulations are presented below:

a. Alameda County General Plan Noise Element

The Alameda County Noise Element contains goals, objectives and implementation programs for the entire County to provide its residents with an environment that is free of excessive noise and promote compatibility of land uses with respect to noise. The County-wide Noise Element does not explicitly specify an acceptable outdoor noise level for the backyards of homes or common outdoor spaces of multi-family housing projects, however the noise element does recognize the noise level standards for residential land uses of an exterior Ldn of 55 dBA and an interior Ldn of 45 dBA identified by the Fed-

TABLE 4.12-3 **NON-COMMERCIAL NOISE ORDINANCE LIMITS**

Category	Cumulative Minutes in one hour period	Daytime, dBA (7 a.m. – 10 p.m.)	Nighttime, dBA (10 p.m. – 7 a.m.)
1	30	50	45
2	15	55	50
3	5	60	55
4	1	65	60
5	0	70	65

Note: Non-commercial uses include Single- or Multiple-Family Residential, School, Hospital, Church, or Public Library properties.
Source: Noise Ordinance Table 6.60.040A, from Alameda County Noise Ordinance Section 6.60.040.

eral Environmental Protection Agency (EPA) as those requisite with the protection of public health and welfare with an adequate margin of safety. The Noise Element also references noise and land use compatibility standards developed by an Association of Bay Area Governments (ABAG) sponsored study. The ABAG study establishes a CNEL (similar to Ldn) of 65 dBA or less to result in little noise impact on residential land uses, levels between 65 and 70 to produce moderate impacts and a CNEL above 70 dBA to cause significant impacts.

b. Alameda County Noise Ordinance

Section 6.60.040 of the Alameda County Noise Ordinance establishes regulations and standards regarding the generation of noise. The regulations identify exterior noise levels impacting residential or commercial land uses. Noise level standards are set forth in Tables 4.12-3 and 4.12-4.

c. Alameda County Building Code

Section 3502 of the Alameda County Building Code includes specifications for noise levels inside and outside of any new apartment homes or attached

TABLE 4.12-4 **COMMERCIAL NOISE ORDINANCE LIMITS**

Category	Cumulative Minutes in one hour period	Daytime, dBA (7 a.m. – 10 p.m.)	Nighttime, dBA (10 p.m. – 7 a.m.)
1	30	65	60
2	15	70	65
3	5	75	70
4	1	80	75
5	0	85	80

Source: Noise Ordinance Table 6.60.040B, from Alameda County Noise Ordinance Section 6.60.040.

dwellings. The ordinance standard is to achieve an annual CNEL of 45 dBA inside all new residential construction and to require an acoustical analysis showing that the structure has been designed to limit intruding noise to the prescribed 45 dBA CNEL. This is consistent with the noise insulation standards in the State Building Code.

d. California Insulation Standards

The California Commission of Housing and Community Development officially adopted noise insulation standards in 1974. In November 1988, the Building Standards Commission approved revisions to these standards (Title 24, Part 2, California Code of Regulations). The standards currently reside in Appendix Chapter 12 to the California Building Code and apply to all new construction in the State of California.

Title 24 requires that interior noise levels attributable to exterior sources must not exceed 45 dB in any habitable room. Additionally, the code specifies that multi-family residential buildings or structures that will be located within exterior CNEL (or Ldn) contours of 60 dB or greater of sources such as a freeway, expressway, parkway, major street, thoroughfare, airport, rail

line, rapid transit line, or industrial noise source shall require an acoustical analysis showing that the building has been designed to limit intruding noise to an interior CNEL (or Ldn) of 45 dB. Worst-case noise levels must be used to determine compliance. Predictions must also be made for future noise levels for a period of at least 10 years from the time of building permit application.

e. Federal Highway Administration and Caltrans Policies

The Federal Highway Administration (FHWA) provides procedures and criteria for noise assessment studies for federal highway projects. It requires that noise abatement measures be considered on all major transportation projects if the project will cause a significant increase in noise levels, or if projected noise levels approach or exceed the noise abatement criteria level for activities occurring on adjacent lands. The California Department of Transportation (Caltrans) utilizes similar procedures and criteria.

The FHWA Noise Assessment Criteria for various land use ratings are given in Table 4.12-5. These noise criteria are assigned to both exterior and interior activities. The FHWA identifies a traffic noise impact when the predicted traffic noise levels approach or exceed the noise abatement criteria. If these criteria sound levels are predicted to be approached or exceeded during the noisiest 1-hour period, noise abatement measures must be considered and, if found to be reasonable and feasible, they must be incorporated as part of a given project. Following the Caltrans protocol, a traffic noise impact will occur when predicted noise levels approach or exceed sound level criteria within 1 dBA (e.g. 66 dBA for Category B).

f. Aircraft Noise Regulations

The Federal Aviation Administration (FAA) and the State of California Airport Noise Standards have established the Yearly Average Community Noise Equivalent Level (CNEL) as the noise standard by which airport noise and land compatibility is judged. The agencies have identified the 65 dBA CNEL

TABLE 4.12-5 **FEDERAL NOISE ABATEMENT CRITERIA**

Rank	A-Weighted Sound Level dBA	Suitable Locations
A	57 exterior	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to serve its intended purpose.
B	67 exterior	Picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals.
C	72 exterior	Developed lands, properties, or activities not included in Categories A or B above.
D	---	Undeveloped lands.
E	52 interior	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.

Source: Federal Highway Administration, 1982.

contour for airport operations as the Noise Impact Boundary. Within this boundary airport operators are required to ensure that all land uses are compatible with the aircraft noise environment or the operator must provide noise mitigation or secure a variance from the governing agencies. Under most circumstances residences are considered to be an incompatible land use within the 65 dBA CNEL noise contour. Aircraft noise regulations immediately relevant to the Eden Area include the City of Hayward's Ordinance 91-16: (Airport Noise Ordinance), which regulates the noise levels resulting from aircraft operations at the Hayward Executive Airport and noise abatement policies and procedures restricting flight paths of aircraft using the Hayward Executive Airport to abate noise from aircraft operations.

3. Existing Setting

The most pervasive and significant noise source in the Eden Area is vehicular traffic noise on the streets and highways. Interstates 880, 580 and 238 carry the highest volumes of traffic and are the noisiest roadway corridors. Noise is

also created by rail operations. The Union Pacific Railroad (UPRR) tracks run through Ashland and Cherryland portions of the Eden Area. The Southern Pacific Railroad (SPRR) tracks run through Ashland and along the border between San Lorenzo and Cherryland. Another UPRR track, the Mulford branch, run along the western portion of the Plan Area, parallel to the shoreline. The Bay Area Rapid Transit (BART) system runs generally parallel to the UPRR track and also is a significant source of noise through Ashland and Cherryland, in part because it runs on elevated tracks.

There are two sources of aircraft noise in the Eden Area. These are aircraft originating at the Hayward Executive Airport and flight operations at the Metropolitan Oakland International Airport. While noise from flight operations at the Oakland Airport are audible, no residential portions of the Eden Area will be exposed on a CNEL of 65 dBA due to future flight conditions.[1]

The Hayward Executive Airport is primarily a general aviation aircraft facility. Noise issues related to its operations are described in the Hayward Executive Airport Master Plan Draft Environmental Impact Report, April 23, 2001. Noise measurements conducted in support of the Airport Master Plan EIR indicate maximum instantaneous noise levels of about 70 to 80 dBA at locations to the northwest of the airport runways, near Skywest Public Golf Course and the adjacent residences in the San Lorenzo portion of the Eden Area. To the south of the airport, noise levels during the monitoring survey were dominated by vehicular traffic on Hesperian Boulevard. Individual propeller aircraft and turbo prop aircraft operations produce maximum noise levels of about 60 to 68 dBA in the Hayward Mobile Homes Estates, immediately north of the Mt. Eden portion of the Eden Area. A noise attenuation berm is located at the south end of the airport (runway 28L). Noise studies done during preparation of the Airport Master Plan indicate the berm effectively reduces noise from aircraft departing the airport.

[1] Oakland International Airport's website: www.oaklandairport.com/masterplan_oak/pdf/2010_CNEL_v_2004.pdf, accessed on July 17, 2006.

Other sources of noise within the community include stationary noise sources associated with industrial and commercial uses. Stationary noise sources in the Eden Area include industrial and commercial operations. Many uses in industrial areas generate noise due to regular operations such as generators, fans, chillers, compressors, boilers, pumps, and air conditioning systems which may run for 24 hours a day. Other significant sources of noise include gas stations, car washes, fire stations, commercial mechanical equipment, child-care centers, and schools. Although these sources do not usually produce sound levels as great as those from industry, they are more frequently located near residential or other noise sensitive uses and, thus, can be sources of irritation and complaints. Additionally, the combination of transportation and industrial noise sources have the potential for producing significant noise impacts.

4. Noise Measurements

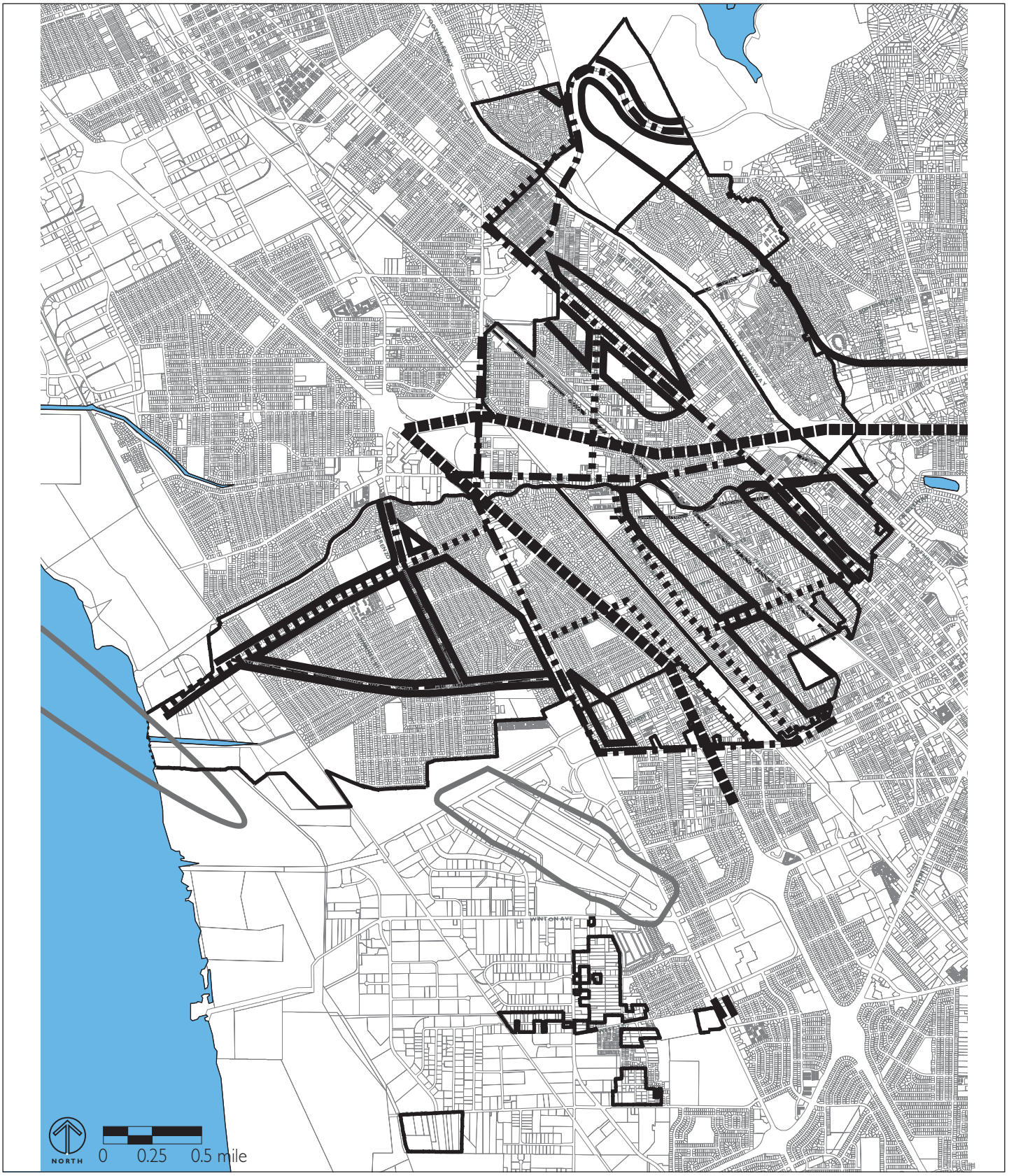
In order to document the Eden Area's noise environment, noise levels were monitored along major transportation corridors, including BART, the freeways, and railroads. Long-term noise measurements (over a continuous 24-hour period) were made at seven locations selected to represent noise levels along major thoroughfares, highways, railroad lines and BART. The results of these measurements are shown in Table 4.12-6. The 24-hour day/night average noise level (Ldn) is shown for each of the long-term meters. The equivalent sound level (Leq) during the daytime and nighttime as well as selected statistical descriptors representing near maximum noise levels (L_{01} and L_{10}), median noise levels (L_{50}) and background noise levels (L_{90}) are also provided to describe the range of noise levels that occurred during the measurements.

Existing noise contours in the Eden Area due to transportation-related noise sources are presented in Figure 4.12-1. The noise contour map shows areas exposed to a noise level of greater than 60 dB Ldn and the source noise levels along major roadways at a distance of 50 feet from the roadway. The source noise levels are depicted in 5 dB increments.

TABLE 4.12-6 **NOISE MEASUREMENT SUMMARY**

Location	Avg. Levels	Sound Levels, dBA L_{01}	L_{10}	L_{eq}	L_{50}	L_{90}	L_{dn}	Primary Noise Source
LT-1: At the Corner of Grant Avenue and Via Nueva, approximately 35 ft. from the centerline of Grant Avenue	Day	78	71	68	64	56	72	Traffic on Grant Avenue
	Night	78	68	65	57	49		
LT-2: In front of # 15831 Hesperian Boulevard 50 feet from the center of the near lane of Hesperian Boulevard.	Day	78	73	70	67	59	72	Traffic on Hesperian Blvd.
	Night	73	68	64	60	56		
LT-3: In the rear yard of # 15934 Via Descanso, approximately 20 ft. from the I-880 soundwall.	Day	70	64	62	61	59	67	Traffic on I-880
	Night	66	62	60	59	56		
LT-4: At the Corner of Meekland and Poplar Avenues Nueva: approx. 45 ft. from the centerline of Meekland Ave.	Day	74	68	65	62	57	67	Traffic on Meekland Ave.
	Night	69	62	59	56	53		
LT-5: Galway Drive adjacent to Hwy. 238	Day	71	69	67	67	65	72	Traffic on Hwy 238
	Night	70	68	65	64	60		
LT-6: 60 feet from the centerline of the BART tracks – Adjacent to the UPRR line. Near the Ashland Avenue overcrossing.	Day	77	66	65	60	57	69	BART Rail Traffic
	Night	71	60	60	55	52		
LT-7: Foothill Blvd. between 166th and 167th Streets, adjacent to I-580	Day	73	72	70	70	68	72	Traffic on I-580
	Night	69	66	64	63	59		

Source: Illingworth & Rodkin, Inc., 2006.



Source: Illingworth and Rodkin, 2003.

Contours

- **60 dBA Ldn, Road and Rail**
- **65 dBA CNEL, Oakland International and Hayward Executive Airports**

Roadway Coding (Ldn 50 ft from rdwy)

- **60 to 64 dBA**
- **64 to 69 dBA**
- **70 to 75 dBA**
- **Above 75 dBA**

FIGURE 4.12-1

NOISE EXPOSURE CONTOURS

B. Standards of Significance

The Eden Area General Plan would have a significant noise impact if it would:

- Expose people to or generate noise levels in excess of standards established in the local General Plan or noise ordinance, or other applicable agencies.
- Create a substantial temporary, periodic or permanent increase in ambient noise levels in the project vicinity above levels existing without the project, including the following:
  - Construction activities that cause noise levels to exceed an hourly average of 60 dBA Leq and exceed existing ambient noise levels by 5 dBA or more at a sensitive receiver, and last more than one construction season, would be considered to cause a substantial temporary or periodic increase in ambient noise.
  - Noise-sensitive uses proposed within the airport's 60 CNEL noise contour or exposed to excessive maximum noise levels from aircraft overflights would cause a significant noise impact.
- Cause the L_{dn} at noise-sensitive uses to increase by 3 dB or more and exceed the "normally acceptable" level.
- Cause the L_{dn} at noise-sensitive uses to increase 5 dB or more and remain "normally acceptable."
- Expose persons to or generate excessive ground-borne vibration or ground-borne noise levels, as identified by the FTA guidelines.
- Expose people residing or working in the project area to excessive aircraft noise levels.

C. Impact Discussion

This section discusses the noise impacts that could arise from the project and it's alternatives.

1. Conformance with General Plan Land Use Noise Compatibility Guidelines

The proposed goals, policies, and actions in the General Plan are adequate to reduce potential impacts associated with noise and land use compatibility to a less-than-significant level. The implementation of Goal N-1 and its associated policies and actions would allow new development projects only where they can comply with the ground transportation noise compatibility guidelines.

Based on the implementation of these polices, the buildout of the General Plan would not result in any significant impacts related to established land use/noise compatibility standards.

a. Conformance with Alameda County Noise Ordinance Limits

The normally acceptable limits shown in Figure 4.12-2 would be compatible with the sound levels allowed by the Alameda County Noise Ordinance. Thus, the adoption of the General Plan would not result in any significant impacts related to the Alameda County Noise Ordinance.

2. Groundborne Vibration

Proposed development under the proposed General Plan with the potential to generate groundborne vibration would be subject to environmental review. Additionally, potential groundborne vibration issues could result from rail-road operations if vibration sensitive developments, such as residences, are proposed close to such facilities. Sensitive developments proposed within 100 feet of a railroad would result in a significant vibration impact.

3. Traffic Noise Increases

Vehicular traffic on existing roadways in the Eden Area would increase as development proceeds and the City's population increases. Traffic noise lev

Land Use Category	Exterior Noise Exposure (L_{dn})					
	55	60	65	70	75	80
Single-Family Residential						
Multi-Family Residential, Hotels, and Motels		(a)				
Outdoor Sports and Recreation, Neighborhood Parks and Playgrounds						
Schools, Libraries, Museums, Hospitals, Personal Care, Meeting Halls, Churches						
Office Buildings, Business Commercial, and Professional						
Auditoriums, Concert Halls, Amphitheaters						

(a) Residential development sites exposed to noise levels exceeding 60 Ldn shall be analyzed following protocols in Appendix Chapter 12, Section 1208A, Sound Transmission Control, California Building Code.

Normally Acceptable
Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special insulation requirements.

Conditionally Acceptable
Specified land use may be permitted only after detailed analysis of the noise reduction requirements and needed noise insulation features included in the design.

Unacceptable
New construction or development should generally not be undertaken because mitigation is usually not feasible to comply with noise element policies.

FIGURE 4.12-2

LAND USE COMPATIBILITY FOR COMMUNITY NOISE ENVIRONMENT

els throughout the Eden Area were modeled to determine how changes in vehicular traffic volumes would affect traffic noise levels. Increases in traffic noise resulting from the Project and its alternatives indicate that noise levels for all scenarios would increase by less than 3 dBA along the roadways studied in the project traffic report with implementation of the General Plan or any of the three alternatives.

The proposed General Plan goals and policies attempt to control excessive noise from traffic sources and provide significance thresholds to be used in the evaluation of project impacts to ensure that new projects are evaluated properly. Given the anticipated growth of the community and expected traffic noise level increases resulting from the project, significant impacts due to traffic noise increases resulting from the adoption of the General Plan are not expected.

4. Airport Noise Exposure

The Hayward Executive Airport and the Metropolitan Oakland International Airport are sources of community noise. Residential land uses or any noise-sensitive development proposed in areas subject to elevated aircraft noise exposure levels should be carefully considered with respect to aircraft noise impact. When such development is permitted, not only does the aircraft noise cause a real physical impact on the future users, but their concerns can also pose a constraint upon future airport operations.

Goal N-4 within the Noise Element of the proposed General Plan and its associated policies and actions address this issue. With implementation of said policies and actions noise impacts related to sensitive uses in proximity to the airport would be reduced to a *less than significant level*.

5. Construction Noise

Residences and businesses located adjacent to proposed development would be affected by construction noise during build-out of the General Plan. Construction noise impacts primarily result when construction activities occur during noise-sensitive times of the day (early morning, evening, or nighttime hours), the construction occurs in areas immediately adjoining noise sensitive

land uses, or when construction durations last over extended periods of time. Major noise generating construction activities could include demolition activities, site grading and excavation, building erection, paving and landscaping. These activities could occur in areas immediately adjacent to existing noise-sensitive receptors.

The highest construction noise levels would be generated during grading and excavation, with lower noise levels occurring during building construction. Large pieces of earth-moving equipment, such as graders, scrapers, and bulldozers, generate maximum noise levels of 85 to 90 dBA at a distance of 50 feet. Typical hourly average construction-generated noise levels are about 80 to 85 dBA measured at a distance of 50 feet from the site during busy construction periods. In addition, pile driving may occur at some of the proposed development sites. This type of construction activity can produce very high noise levels of approximately 105 dBA at 50 feet. These noise levels drop off at a rate of about 6 dBA per doubling of distance between the noise source and receptor. Intervening structures or terrain would result in lower noise levels. Noise levels anticipated over temporary periods of time as a result of construction facilitated by the proposed General Plan would generate potentially significant noise impacts.

Policy P4 of Goal N-5 limits construction in the vicinity of noise sensitive land uses to daylight hours or 7:00 am to 7:00 pm. However, since this policy is not sufficient to mitigate all construction noise impacts, a significant impact could occur.

D. Impacts and Mitigation Measures

While policies and other regulations would reduce noise impacts to the extent feasible, significant and unavoidable impacts would occur in regards to temporary, short-term and long-term noise impacts under the proposed General Plan.

Impact NOI-1: New development proposed along existing railroad lines, and near Grant Avenue, could expose residents to vibration levels in excess of Federal standards. The proposed General Plan does not address potential groundborne vibration impacts.

Mitigation Measure NOI-1: A policy should be added to the proposed General Plan under Goal N-1 that states that the County will seek to reduce impacts from groundborne vibration associated with rail operations by requiring that vibration-sensitive buildings (e.g. residences) are sited at least 100-feet from the centerline of the railroad tracks whenever feasible. The policy should further state that development of vibration-sensitive buildings within 100-feet from the centerline of the railroad tracks would require a study demonstrating that ground borne vibration issues associated with rail operations have been adequately addressed (i.e. through building siting or construction techniques).

Results of Mitigation**:** *Less than significant.*

Impact NOI-2: Construction associated with buildout of the General Plan would temporarily elevate noise levels at adjacent land uses by 15 to 20 dBA or more.

Mitigation Measure NOI-2: In addition to the time-of-day restriction (which is derived from the County's Noise Ordinance) in Goal N-1, P4, the following standard construction noise control measures should be included as requirements at construction sites to minimize construction noise impacts:

- Equip all internal combustion engine driven equipment with intake and exhaust mufflers that are in good condition and appropriate for the equipment.
- Locate stationary noise generating equipment as far as possible from sensitive receptors when sensitive receptors adjoin or are near a construction project area.

- Utilize "quiet" air compressors and other stationery noise sources where technology exists.
- When necessary, temporary noise control blanket barriers shall shroud pile drivers or be erected in a manner to shield the adjacent land uses. Such noise control blanket barriers can be rented and quickly erected.
- Foundation pile holes shall be pre-drilled to minimize the number of impacts required to seat the pile. The pre-drilling of foundation pile holes is a standard construction noise control technique. Pre-drilling reduces the number of blows required to seat the pile.
- The project sponsor shall designate a "disturbance coordinator" who would be responsible for responding to any local complaints about construction noise. The disturbance coordinator will determine the cause of the noise complaint (e.g. starting too early, bad muffler, etc.) and will require that reasonable measures warranted to correct the problem be implemented. The project sponsor shall also post a telephone number for excessive noise complaints in conspicuous locations in the vicinity of the project site. Additionally, the project sponsor shall send a notice to neighbors in the project vicinity with information on the construction schedule and the telephone number for noise complaints.

Results of Mitigation**:** *Less than significant.*

4.13 POPULATION, HOUSING AND EMPLOYMENT

This section presents information on existing and projected population, housing and employment in the Eden Area, and analyzes the effects that the proposed General Plan would have on them.

A. Existing Setting

The following provides a description of the current conditions with regard to population, housing and employment in the Eden Area.

The demographic information presented below compares the Eden Area communities of Ashland, Cherryland, San Lorenzo, and the entire Eden Area, to the entire County and the State of California.[1] The Eden Area category includes all eight sub-areas. Hayward Acres, Hillcrest Knolls, Fairmont Complex, Mt. Eden, and El Portal Ridge are not discussed separately due to the lack of area-specific information from the Census Bureau and the 2000 Census.

1. Population

As of the 2000 Census, the Eden Area had a population of 68,109, excluding Fairview. Table 4.13-1 presents population and household data for the Eden Area. San Lorenzo was home to 21,898 of these residents, Ashland 20,793 and Cherryland 13,837. Also presented here is household data for these areas. As of the 2000 Census there were 7,500 households in San Lorenzo, 7,223 in Ashland, 4,658 in Cherryland and 23,323 in the Eden Area as a whole, again excluding Fairmont Complex. From 1990 to 2000, the Eden Area experienced population and household growth with the Eden Area growing slightly faster than the County and the State in terms of population, but slower in terms of households.

[1] For the purpose of this chapter's discussion, the "demographic study area" is defined as a series of Census Tracts or the Census Defined Place (CDP) that approximate the boundaries of the various Eden Area communities.

TABLE 4.13-1 **POPULATION AND HOUSEHOLD TRENDS IN THE EDEN AREA, COUNTY AND STATE – 1990 TO 2000**

	Eden Area			County			State		
	1990	2000	Change[a]	1990	2000	Change	1990	2000	Change
Population	57,145	68,109	1.9 %	1,279,182	1,443,741	1.3%	29,760,021	33,871,648	1.4%
Households	22,052	23,323	0.6%	479,518	523,366	0.9%	10,381,206	11,502,870	1.1%
Average Household Size	2.59	2.92	1.2%	2.59	2.71	0.5%	2.79	2.87	0.3%
Household Type									
Families	86.3%	69.5%	–			–			–
Non-Families	13.7%	30.5%	–			–			–
Tenure									
Owner	51.2%	52.8%	–			–			–
Renter	48.8%	47.2%	–			–			–

[a] Change refers to annual average change between 1990 and 2000.
Sources: 1990 & 2000 U.S. Census; Bay Area Economics, 2003.

a. Race and Ethnicity

Data on ethnic composition of the Eden Area is summarized in Table 4.13-2. The composition of the Eden Area parallels that of Alameda County for the most part; each has about a 39 percent White population. There are some differences in the breakdowns of the non-white groups. The Eden Area has a higher Hispanic/Latino population than the County: 30 percent in the Eden Area compared to 19 percent in the County. The Eden Area has a smaller population of Black/African American: 12 percent compared to 15 percent in the County. Additionally, 14 percent of the Eden Area's population is Asian Pacific Islander compared to 21 percent in the County.

b. Age Distribution

Table 4.13-3 presents the age distribution for the Eden Area. Table 4.13-4 summarizes median age by Eden sub-area. According to the 2000 Census, the Eden Area is a younger community than Alameda County. The median age in the Eden Area was 33.6 as compared to 34.5 in the County and 33.3 in California.[2] The median ages of the sub-areas, however, differed greatly with Ashland and Cherryland below the average median age at 31 years and 32 years respectively, and San Lorenzo above the median age at almost 38.

The 2000 Census also shows that the Eden Area had a notably greater percentage of persons 65 and over than did Alameda County or California. In the Eden Area, the 65 and over group made up 12 percent of the population, whereas it made up only 10 percent in Alameda County and 11 percent in California. The elderly population appears to be decreasing. Between 1990 and 2000, the Eden Area population aged 65 and over decreased from 17 percent to 12 percent of the population.

[2] This information is shown in Table A-3 in Appendix A.

TABLE 4.13-2 **POPULATION BY RACE AND ETHNICITY IN THE EDEN AREA, 2000**

Ethnicity	Persons	Percent of Total
American Indian and Alaska Native	375	0.6
Asian, Hawaiian and Pacific Islander	9,392	13.8
Black or African American	7,805	11.5
Hispanic or Latino	20,713	30.4
White	26,865	39.4
Some other race	160	0.2
Population of two or more races	2,799	4.1

Sources: 2000 Census; Bay Area Economics, 2002.

TABLE 4.13-3 **AGE DISTRIBUTION IN THE EDEN AREA, 1990 TO 2000**

Age	Person (1990)	Percent of Total (1990)	Persons (2000)	Percent of Total (2000)
Under 18	13,290	23.3%	18,211	26.7%
18-24	5,492	9.6%	6,259	9.2%
25-34	11,754	20.6%	11,246	16.5%
35-44	8,765	15.3%	11,352	16.7%
45-54	4,967	8.7%	8,449	12.4%
55-64	3,323	5.8%	4,652	6.8%
65 and over	9,554	16.7%	7,940	11.7%

Sources: 1990 and 2000 Census; Bay Area Economics, 2002

TABLE 4.13-4 **MEDIAN AGE BY EDEN SUB-AREA, 2000**

Eden Sub-Area	Median Age
El Portal Ridge	35.5
San Lorenzo	37.7
Mt. Eden	36.5
Fairmont/Hillcrest Knolls	38.2
Hayward Acres	29.7
Cherryland	31.6
Ashland	30.9
Total Eden Area	33.6

Sources: Bay Area Economics, 2003; 2000 Census.

c. Educational Attainment

Twenty percent of the population in the Eden Area has college degrees; this is much lower than in Alameda County or California. In comparison, about 39 percent in Alameda County and 31 percent of California residents have college degrees. Table 4.13-5 contains additional data on educational attainment.

2. Housing

As the rate of population growth in the Eden Area exceeded household growth between 1990 and 2000, the area's average household size increased from 2.59 to 2.92 persons per household. This compares to an average household size of 2.71 in the County and 2.87 in the State.

The 2000 Census shows that the Eden Area and its constituent geographies have an equal or greater percentage of family households compared to Ala-

TABLE 4.13-5 **EDUCATIONAL ATTAINMENT FOR PERSONS AGE 18 AND ABOVE IN THE EDEN AREA**

	Persons	Percent of Total
Less than 9th Grade	4,796	9.6%
9th to 12th Grade, No Diploma	7,528	15.0%
High School Graduate	15,060	30.1%
Some College, No Degree	12,729	25.4%
Associate Degree	3,183	6.4%
Bachelor's Degree	4,879	9.7%
Graduate/Professional Degree	1,920	3.8%
Total	**50,094**	**-**

Source: 2000 Census; Bay Area Economics, 2003.

meda County.[3] In terms of household type, the San Lorenzo sub-area has 76 percent family households versus 70 percent family households in the Eden Area overall. The Eden Area has a higher percentage of family households than Alameda County, which has 65 percent, and California, which has 69 percent.

As shown in Table 4.13-6, the Ashland and Cherryland communities in the Eden Area rank among the ten densest urban places in Northern California. Cherryland's population density is 11,826 persons per square mile, while Ashland's population density is 11,301 persons per square mile.

[3] A family household consists of one or more related individuals living in a dwelling unit.

TABLE 4.13-6 **TEN DENSEST URBAN PLACES IN NORTHERN CALIFORNIA BY RESIDENTS AND UNITS PER SQUARE MILE**

City or Census Defined Place (CDP	Population	Units	Land Area (square miles)	Population per square mile	Units per square miles
Buena Vista CDP, Santa Clara County	1,704	557	0.07	24,343	7,957
San Francisco	776,733	346,527	46.69	16,636	7,422
Rollingwood CDP, Contra Costa County	2,900	757	0.21	13,810	3,605
Daly City, San Mateo County	103,621	31,311	7.56	13,706	4,142
North Fair Oaks CDP, San Mateo County	15,440	4,059	1.17	13,197	3,469
Alum Rock, CDP	13,479	3,411	1.12	12,035	3,046
Cherryland CDP, Alameda County	13,837	4,823	1.17	11,826	4,122
San Pablo, Contra Costa County	30,215	9,340	2.58	11,711	3,620
Ashland CDP, Alameda County	20,793	7,372	1.84	11,301	4,007
Berkeley, Alameda County	102,743	46,875	10.46	9,822	4,481

Source: Bay Area Economics 2002; Census 2000.

a. Housing Tenure

In the Eden Area there is a slightly smaller proportion of homeowners than in Alameda County or California. About 53 percent of Eden Area households own their own home, while 55 percent of Alameda County households and 57 percent of California households are homeowners.

Although the Eden Area as a whole has similar ownership rates as the County and State, a breakdown of the different areas shows some extreme differences.

San Lorenzo has a very high ownership rate with just over 79 percent of households owning their homes. In Ashland and Cherryland only 36 percent and 34 percent, respectively, own their homes.

b. Household Growth and Housing Need

The Eden Area had a total of 23,323 households in 2000, comprising nearly 50 percent of all households in unincorporated Alameda County. As is described in the Alameda County Housing Element, the fastest growing communities in the unincorporated areas of the County are Ashland and Fairview. Despite this relatively rapid rate of household growth, housing development has not kept pace with demand, leading to higher household sizes, low vacancy rates for both rental and ownership housing, and rising housing costs.

The Association of Bay Area Governments (ABAG) housing needs determinations for the 1999-2006 planning period projects that the unincorporated sections of Alameda County will need to add approximately 5,310 housing units to keep pace with projected household growth at all income levels. Based on these projections, the Eden Area will need to add up to 2,628 new housing units[4] between 1999 and 2006. This translates into 375 additional units per year. Of this total, approximately 50 percent of the units will need to be affordable to very low- and low-income households earning less than 80 percent of the Area Median Income (AMI).

3. Employment

The State Employment Development Department (EDD) estimates unemployment in the Eden Area at 7 percent, or approximately 1,960 people as of November 2002. The Eden Area unemployment rate is higher than in the County and the State. Ashland and Cherryland have higher unemployment rates than the Eden Area as a whole; Ashland's unemployment rate is 11 percent, while Cherryland's is 8 percent. At 4 percent, San Lorenzo has a much

[4] Assumption of projected housing units for the Eden Area between 1999-2006 is based on the Eden Area's current proportion, 50%, of the total housing units in the unincorporated Alameda County.

lower rate of unemployment than in the County or the State. Table 4.13-7 presents employment data.

The Eden Area has a much smaller percentage of residents employed in management, professional and related occupations than in the County and the State. Consistent with the area's overall educational levels, Eden Area residents are, in general, relatively heavily employed in service, sales, construction and production occupations. Table 4.13-8 presents the distribution of employed residents in the Eden Area.

a. Income Distribution

The 2000 Census reports of 1999 income show that the median income in the Eden Area was below that of the County and the State. The median income of the Eden Area was $47,324. In California, it was slightly higher at $47,493. The County's median income was substantially higher than the Eden Area at $55,946.

There is a wide range of median incomes among the Eden Area's neighborhoods. El Portal Ridge and San Lorenzo had much higher median incomes of $57,481 and $56,170 respectively, which is slightly above the County median. Ashland and Cherryland, on the other hand, had median incomes of $40,811 and $42,880 respectively, well below the County's and even the State's median incomes. Table 4.13-9 summarizes household income data for the Eden Area. Table 4.13-10 summarizes median income by Eden sub-area.

b. Commuting

According to the 2000 Census, the Eden Area's employed residents have, on average, shorter commute times than in the County. About 58 percent of Eden Area residents have commute times of less than 30 minutes, compared to 53 percent for the County. The shorter commute times from the Eden Area can be attributed to the Eden Area's proximity to an array of transportation options including BART, bus service and freeway access points. Commute data is shown in Table 4.13-11.

TABLE 4.13-7 **EMPLOYMENT AND UNEMPLOYMENT IN THE EDEN AREA**

Labor Force Data	1990	2000	November 2002
Labor Force	23,470	25,480	26,810
Employment	22,390	24,610	24,850
Unemployment	1,080	870	1,960
Unemployment Rate	4.6%	3.4%	7.3%

Notes: Eden Area refers to Ashland, Cherryland and San Lorenzo. Labor Force refers to workers by place of residence.
Sources: Employment Development Department; Bay Area Economics, 2003.

TABLE 4.13-8 **OCCUPATION OF EMPLOYED RESIDENTS IN THE EDEN AREA**

Occupation	Employed Residents	Percent of Total[a]
Management, professional and related occupations	7,649	25.3%
Service occupations	4,209	13.1%
Sales and office occupations	9,606	31.8%
Farming, fishing and forestry occupations	67	0.2%
Construction, extraction and maintenance occupations	3,467	11.5%
Production, transportation and material moving occupations	5,248	17.4%

[a] Total number of employed residents in the Eden Area is 32,787.
Sources: 2000 U.S. Census; Bay Area Economics, 2002.

TABLE 4.13-9 **HOUSEHOLD INCOME DISTRIBUTION IN THE EDEN AREA, 1999**

Income Range	Number of Households	Percent of Total
Less than $15,000	2,679	11.5%
$15,000 to $24,999	2,475	10.6%
$25,000 to $34,999	2,906	12.5%
$35,000 to $49,999	4,349	18.6%
$50,000 to $74,999	5,179	22.2%
$75,000 to $99,999	3,208	13,8%
$100,000 and above	2,527	10.8%

Note: 1999 Income of 2000 Households
Sources: 2000 U.S. Census; Bay Area Economics, 2003.

TABLE 4.13-10 **MEDIAN INCOME BY EDEN SUB-AREA, 2000**

Neighborhood	Median Income
El Portal Ridge	$57,481
San Lorenzo	$56,170
Mt. Eden	$54,056
Fairmont/Hillcrest Knolls	$52,870
Hayward Acres	$45,398
Cherryland	$42,880
Ashland	$40,811

Source: 2000 U.S. Census; Bay Area Economics, 2003.

TABLE 4.13-11 **COMMUTE TIMES IN THE EDEN AREA**

Commute Time	Trips 1990	Percent of Total Trips 1990	Trips 2000	Percent of Total Trips
0 to 14 minutes	5,822	23%	5,599	19%
15 to 29 minutes	10,651	42%	10,965	38%
30 to 44 minutes	5,078	20%	6,100	21%
45 or more minutes	3,957	16%	6,076	21%

Note: There were 25,507 total trips in 1990 and 28,740 total trips in 2000 (rounding may result in small errors in total trip counts and percentages).
Sources: 1990 Census; 2000 Census; Bay Area Economics, 2002.

B. Standards of Significance

The proposed project would have a significant impact on population, employment and housing if it would:

- Induce substantial unexpected population growth or growth for which inadequate planning has occurred, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure).
- Displace substantial numbers of existing housing units, necessitating the construction of replacement housing elsewhere.
- Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere.

C. Impact Discussion

This section discusses the potential impacts of the proposed adoption of the proposed General Plan on population, housing, and employment in the Eden

Area. Implementation of the Plan could result in an increase of dwelling units and population within the Area, and an increase in employment-generating commercial uses. The proposed General Plan is designed to help the County address growth pressures, in part by providing a policy framework to control and direct growth as it occurs.

The proposed General Plan seeks to provide new employment opportunities for the Eden Area residents and to allow residents to work, shop and live within the community. A range of housing types are allowed and encouraged by the Plan to provide housing to meet the varying income levels and housing needs of the Area's residents. Policies of the proposed General Plan are designed to work closely with the comprehensive range of policies and programs included in the latest County Housing Element, as it was updated and adopted in 2001.

1. Population Growth

Regional and statewide growth pressures will cause the Eden Area to continue to grow into the future. The Area has tended to have more affordable housing relative to other portions of the immediate region, and natural population growth will also continue to expand the Area's population. ABAG Projections 2005 estimate that the Eden Area's population will grow by approximately 12.6 percent from 2000 to 2025; or to approximately 76,700 residents by 2025. This population growth will need to be accommodated by increasing the housing stock, as the Projections only estimate a marginal increase of the average household size, from 2.92 to 2.94 persons per household.[5]

The proposed General Plan would encourage the redevelopment of underutilized large, deep lots to increase opportunities for a range of housing types (Policy P1, under Goal LU-6). The Plan would also allow for infill development at higher densities (Policy P4, under Goal LU-5), which would result in greater housing opportunities for Eden Area residents.

[5] Association of Bay Area Governments, 2005, *ABAG Projections 2005*.

Table 3-2 in the Project Description (Chapter 3) summarizes the total amount of new development that is projected to occur under the proposed General Plan. This includes a total of 29,014 units in the Eden Area, which would be an increase of approximately 5,691 units over that which existed in 2000. If growth were to continue at the existing rate of about 2 percent per year, by 2025, there would be approximately 33,306 housing units in the Eden Area. Actual growth rates would depend on a variety of factors including demographic, economic and market conditions that could cause growth to occur at a faster or slower rate than 2 percent.

In order to accommodate projected growth the proposed General Plan would require that new development not be approved unless there is infrastructure in place or planned to support the growth (Policy P6, under Goal LU-5). Furthermore, the Plan would allocate land for new residential development by requiring the County to allow the development of new housing as part of mixed-used buildings or parcels (Policy P4, under Goal LU-7). Additionally, Policy P7 under Goal LU-5 would encourage new residential development to pay its fair share of the cost of capital improvements needed to serve that development.

The proposed General Plan includes numerous policies that would accommodate growth in a planned and orderly fashion, while encouraging the County to foster a sense of unity among the eight communities of the Eden Area through its direct actions (Policy P1, under Goal LU-1). Further supporting this effort, Policy P2 of the same Goal would encourage new development and redevelopment to advance a unified and coherent pattern of development, maximizing the use of land and fill in gaps in the urban environment.

In addition to the above policies of the proposed General Plan, Alameda County Housing Element, adopted in 2003, considers projected future population growth and housing demand, and seeks to increase the amount of housing that would be affordable to all sectors of the community. The proposed General Plan was developed so as to maintain consistency with the updated

Housing Element, and to support its policies and programs, and there would be *no significant* impacts with regard to the provision of affordable housing in the town.

The proposed General Plan includes policies to regulate future growth that would be allowed under the Plan in an orderly and planned manner. Therefore, the proposed General Plan would not result in substantial unexpected population growth or growth for which inadequate planning has occurred.

2. Housing and Population Displacement

The majority of development permitted by the proposed General Plan would either occur in infill locations, on undeveloped parcels, or on parcels that can be subdivided, rather than through large scale redevelopment of already developed land and buildings. As a result, implementation of the proposed General Plan would result in *no significant* impact to the displacement of substantial numbers of existing housing units or people.

3. Employment and Job Growth

The proposed General Plan would allow for a total of about 67.4 acres of General Commercial development, plus an additional 182 acres of mixed-use development of General Commercial and Residential uses, 179 acres of Light Industrial and another 179 acres of Research and Development/Office uses. Additional employment would be associated with these uses, providing jobs as well as essential goods and services for Eden Area residents.

In the effort to increase the number of high wage jobs and enhanced employment opportunities in the Eden Area, Policy P5 under Goal LU-1, of the proposed General Plan, would require the County to ensure that land is designed to increase economic development opportunities while also providing for future housing needs. Additionally, the Plan encourages residential development to be balanced with the development of jobs and retail growth and the ability to provide services to the existing population of the Eden Area (Policy P6, under Goal LU-1). Furthermore, Goal LU-13 seeks to enhance economic development opportunities in the Eden Area, while Goal LU-14

seeks to allow for the retention and expansion of commercial uses in appropriate locations to increase economic development opportunities and provide the daily needs of residents. Finally, Goal LU-15 seeks to preserve the Industrial uses and expand Research and Development/Office uses in the Eden Area. The proposed General Plan is thus expected to have a beneficial impact on employment and job growth in the Eden Area.

D. Impacts and Mitigation Measures

Since implementation of the proposed General Plan results in *no significant* project-related impacts on population, employment and housing, no mitigation measures are required.

5 ALTERNATIVES TO THE PROPOSED PROJECT

The proposed project has been described and analyzed in the previous chapter with an emphasis on potentially significant impacts and recommended mitigation measures to avoid those impacts. The State CEQA Guidelines require the description and comparative analysis of a range of alternatives to the proposed project that could feasibly attain the objectives of the project.

The following discussion is intended to inform the public and decision makers of the feasible alternatives that consider mitigation measures recommended in this EIR. The following three alternatives are discussed below in sections A through C:

- No Project Alternative (Existing General Plan)
- Spread Development Alternative
- Expanded Jobs Alternative

Each alternative is analyzed against the impact factors considered for the proposed project, according to whether it would have a mitigating or adverse effect. Table 5-1 summarizes the results of the analysis.

CEQA Guidelines require consideration of a "No Project Alternative" in every EIR. In program EIRs, the No Project Alternative is assumed to be one in which development would take place under the existing General Plan in the project area. Such an alternative is considered as the No Project Alternative in this EIR.

CEQA Guidelines also require that the environmentally superior alternative be designated. If the alternative with the least environmental impact is the No Project Alternative, then the EIR must also designate the next most environmentally superior alternative.

TABLE 5-1 **COMPARISON OF PROJECT ALTERNATIVES**

Impact Factors	No Project	Spread Development Alternative	Expanded Jobs Alternative
Land Use	- -	-	- -
Community Services	-	0	+
Transportation	-	-	-
Infrastructure	-	0	0
Aesthetics	-	0	0
Cultural Resources	-	0	0
Geology, Soils and Seismicity	- -	0	0
Hazards and Hazardous Materials	0	0	+
Hydrology and Flooding	- -	0	0
Biological Resources	0	0	0
Air Quality	0	0	0
Noise	-	0	0
Population, Housing and Employment	-	0	0

++ Substantial improvement compared to the proposed project
+ Insubstantial improvement compared to the proposed project
0 Same impact as proposed project
- Insubstantial deterioration compared to the proposed project
-- Substantial deterioration compared to the proposed project

A. No Project Alternative (Existing General Plan)

1. Principal Characteristics

Under this alternative, the proposed General Plan would not be adopted and the existing General Plan would remain in effect, though it would be modified to be consistent with the adopted Housing Element. The No Project Alternative would not prevent development in the Eden Area. Rather, development would occur according to the existing General Plan land use designations and the existing policy guidance within the Eden Area. This alternative would also assume that the Fairmont Complex would be reserved for service provision and government uses but would have some office expansion. The Grant Avenue Area would remain an industrial area with no research and development/office (R&D/Office) uses allowed. The corridors and other main thoroughfares would retain the existing combination of commercial and residential land use designations. Bockman Road would remain designated for low density residential development as would the entirety of Mt. Eden (including parcels that have existing industrial uses.) Finally, the southern part of Meekland Avenue would continue to be designated for industrial and commercial uses.

2. Impact Analysis

The No Project Alternative would have the following impacts relative to the adoption of the proposed General Plan.

a. Land Use

The most significant land use difference between the Existing General Plan and the proposed General Plan is that the General Plan proposes a number of new land use designations that do not currently exist. The proposed land use designations for the new General Plan are intended to more clearly define where certain types of development can and cannot occur in the Eden Area. Additionally, the proposed General Plan would diminish the conflict with incompatible land uses by promoting transitional areas between such conflicts. Furthermore, the proposed General Plan would provide property owners greater flexibility by allowing them to develop vertically or horizon-

tally mixed-uses, depending on economic conditions. This mixed-use designation is intended to encourage vibrant corridors and districts with a range of use and activity. Generally, a mix of land use types in close proximity could increases the potential for future land use conflicts, especially with residential development. However, the benefits of mixed use development and intensification would outweigh the potential conflicts that could be associated with it, particularly since the proposed General Plan contains policies to mitigate such impacts. Since the benefits associated with mixed use development would not be realized with the land use designation in the current General Plan, the proposed project would be considered a substantial improvement compared to the No Project Alternative.

b. Community Services

While the demand for community services would be less under the no project alternatives, the proposed General Plan provides updated standards of service, policies and actions to address the provision of all relevant services in the area with the goal of expanding and improving community services. As a result, the proposed General Plan would be considered a insubstantial improvement compared to the No Project Alternative.

c. Traffic and Circulation

Buildout of the current General Plan would generate more vehicle trips than the preferred Plan. Growth generated by the proposed Plan would generate 5,484 AM peak hour trips and 8,465 PM peak hour trips, while growth generated by the No Project alternative would generate 5,618 AM peak hour trips and 9,180 PM peak hour trips. However, this difference in trip generation is relatively minor.

Table 5-2 compares the future (year 2025) peak hour level of service (LOS) at each study intersection under the Preferred Plan and No Project Alternative.

TABLE 5-2 **INTERSECTION LEVEL OF SERVICE COMPARISON, NO PROJECT ALTERNATIVE**

		LOS[a]/Delay (Seconds/ Vehicle)[b]		LOS[a]/Delay (Seconds/ Vehicle)[b]	
		Future with Proposed General Plan		Future with No Project Alternative (Existing General Plan)	
Intersection	Control	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
East 14th/Ashland	Signal	D/37.2	C/31.1	C/27.4	D/41.9
East 14th/164th	Signal	B/17.6	C/21.9	B/19.1	C/30.8
Mission/Lewelling	Signal	B/12.4	C/28.8	B/13.7	D/45.4
Meekland/Lewelling	Signal	C/26.5	C/34.0	C/28.8	D/38.4
Mission/Hampton/Maddox	Signal	C/24.4	D/53.9	C/25.4	E/67.6
Washington/Grant	Signal	D/51.3	**F/>80.0**	D/44.8	**E/66.1**
Mission/Blossom	Side-street stop	D/28.7	**F/>50.0**	**F/>50.0**	**F/>50.0**
Mission/Grove	Signal	C/34.6	D/52.7	C/36.4	E. 62.5
Meekland/Blossom	Signal	C/22.5	C/28.8	C/23.1	C/30.4
Hesperian/Bockman	Signal	B/28.7	C/33.1	C/27.6	C/32.5

Notes: **Bold** indicates unacceptable peak hour intersection operations (LOS E on non-CMP routes; LOS F on CMP routes).
[a] LOS = Level of Service
[b] Delay in seconds calculated using the 2000 *Highway Capacity Manual*. Worst approach reported for side-street stop-controlled intersections.
Source: Fehr & Peers, 2006.

LOS would be slightly worse under the No Project Alternative at several intersections on Mission Boulevard and at the Meekland/Lewelling intersection, but would result in no additional significant intersection impacts beyond those identified for the Preferred Plan. At the Grant/Washington intersection, LOS during the PM peak hour would be slightly better under the No Project Alternative (LOS E) compared with the Preferred Plan (LOS F), but would still require mitigation as would be the case with the Preferred Plan. Based on this comparison, intersection delay under the No Project Alternative would not differ significantly from the Preferred Plan.

Since overall population growth would be the same under the No Project Alternative, the amount of traffic distributed to regional freeways would not differ significantly from the Preferred Plan. Significant and unavoidable impacts to regional freeways are anticipated under the Preferred Plan and each alternative, including the No Project Alternative.

Transit usage for regional trips may be slightly higher with the Preferred Plan due to the transportation benefits associated with mixed use development. In addition, the proposed General Plan contains stronger policies pertaining to bicycle, transit and pedestrian circulation, compared to the previous General Plan.

The No Project Alternative would be an insubstantial deterioration compared to the Preferred Plan with regard to traffic and circulation.

d. Infrastructure

Under the No Project Alternative the population would be equal to that of the Preferred Plan. Thus, the demand on water, wastewater and solid waste services in the Eden Area would be equal. Additionally, under either alternative, most of the increment of additional development would take place in and adjacent to existing development areas and would not require significant expansion of infrastructure systems to serve it. However, the proposed General Plan would have updated policies that would guide for infrastructure provision which includes goals, policies and actions to ensure that adequate

water, wastewater and stormwater facilities are provided to meet the needs of future growth, in addition to policy guidance to encourage energy conservation. Specifically, the existing General Plan includes actions to coordinate with applicable Special Districts to ensure availability of needed infrastructure to serve future development. For this reason, with respect to infrastructure in the Eden Area, the No Project Alternative would be considered an insubstantial deterioration compared to the proposed General Plan.

e. Hazards and Hazardous Materials

Given that there is an equal population projection for both proposed and current General Plans, the risk of exposure from the transport, use, storage and disposal of hazardous materials in the Eden Area would be the same under the No Project Alternative and the proposed Plan. While the emphasis on mixed-use development in the proposed Plan could result in the greater exposure to hazardous materials, depending on specific types of commercial activity, the benefits of mixed-use development and intensification would outweigh the potential conflicts that could be associated with it, particularly since the proposed General Plan contains policies and actions to mitigate such impacts. Regardless of the level of risk, both alternatives would be subject to federal, State and local regulations pertaining to safe use, storage, disposal and transportation of hazardous materials. Therefore, the No Project Alternative would be considered to have the same impact as the proposed General Plan, with regards to Hazards and Hazardous Materials.

f. Aesthetics

Both the current General Plan and the proposed Plan would result in new development that would change the existing appearance of some parts of the area. In both cases, these changes could result in significant impacts to visual quality, particularly in the case of sites that have visual corridors to scenic vistas. However, the proposed Plan would have updated methods and policies that that seek to minimize the visual impacts of new development in the area through clustering, buffering and screening of development from scenic corridors; undergrounding utilities; signage; landscaping and other strategies. Visual resources, such as the East Bay Hills and the San Francisco Bay, would

be preserved throughout the area under the proposed General Plan as well. Overall, the existing General Plan would be slightly worse than the proposed General Plan with regard to impacts to visual quality.

g. Cultural Resources

The current General Plan contains a cultural resources section which identifies the various cultural and archeological resources found within the Eden Area. However, it does not provide any policies and actions, which would protect these resources. The proposed General Plan contains comprehensive policies which aim to preserve and protect Eden Area cultural resources. For this reason, the No Project Alternative is considered to be an insubstantial deterioration compared to the preferred plan, with respect to cultural resources.

h. Geology, Soils and Seismicity

With respect to geology, soils and seismicity, the No Project Alternative would be considered slightly worse than the Preferred Plan. The current General Plan identifies that certain risk to the Eden Area exists but does not include any policies and actions which would mitigate these risks to an acceptable level. Even though the current General Plan would be required to adhere to State building regulations, lack of local reinforcement polices makes this alternative a substantial deterioration compared to the proposed General Plan, with respect to geology, soils and seismicity.

i. Hydrology and Flooding

The current General Plan does not contain a comprehensive Hydrology and Flooding section. However, the proposed Plan contains comprehensive policies and actions which address flooding and inundation. Furthermore, the current General Plan does not address new development or redevelopment within 100/500 year flood zones, whereas the proposed General Plan does. For these reasons, the No Project Alternative with respect to hydrology and flooding is considered a substantial deterioration compared to the proposed Plan.

j. Biological Resources

Between the No Project Alternative and the proposed Plan the project population is equal, thus it is not expected that one alternative would place a higher demand on biological resources than the other. However, encroachment on biological resources in a completely built out area is always of concern. Both the No Project and proposed Plan alternatives would be subject to the policies of the Resource Conservation Element for Alameda County which provides guidelines for the protection of open space and sensitive habitats. For these reasons, with respect to biological resources, the No Project Alternative is considered equivalent to the proposed Plan.

k. Air Quality

As noted in section c, buildout of the current General Plan would generate more traffic trips than the proposed plan as the proposed plan would encourage mixed-use development and increase residential densities, resulting in greater land use efficiencies. Additionally, the proposed General Plan contains circulation policies and guidelines which would contribute to more fluid transportation throughout the Eden area, as well as advocate alternative forms of transportation, which would have positive effects on air quality. As such, the No Project Alternative is seen as a slight deterioration compared to the proposed General Plan. Overall, due to the slightly reduced number of vehicle trips, the impacts to air quality would be insubstantially worse under the existing General Plan compared to the proposed Plan.

l. Noise

Due to regional increases in traffic, noise levels would increase under the No Project alternative as well as the proposed General Plan buildout horizon. Traffic noise levels in the Eden Area would not be measurably different regardless of the General Plan alternative that is selected. Although the proposed General Plan contains circulation policies and guidelines, which would contribute to more fluid and efficient transportation, as well as provide denser and more efficient land use development throughout the Eden area, it would have a similar noise impact as the No Project Alternative.

m. Population, Housing and Employment

As mentioned above, buildout under the current General Plan would result in the same number of residential units as buildout under the proposed General Plan. However, non-residential development would be slightly more under the proposed Plan. Neither the proposed General Plan nor the No Project Alternative would result in displacement of substantial numbers of existing housing or people. Not only does the proposed Plan allow for more commercial and light industrial development, it would also provide additional opportunities for mixed-use and higher density housing, including requirements for new development to occur at minimum specified densities and thus potentially providing more opportunities for a range of housing types for all income levels. Thus, on balance, the proposed General Plan would be somewhat better than the existing General Plan with regards to population, employment and housing.

B. Spread Development Alternative

1. Principal Characteristics

The proposed General Plan could be amended to spread commercial and residential development along the major corridors and other areas where capacity is available as opposed to concentrating development in identified districts. This alternative presents a more "scattershot" approach to growth in the Eden Area with no major concentrations of growth in any one location. This alternative will likely spread transportation impacts throughout the Eden Area (as opposed to large increases in concentrated areas) but may not meet the overall objective of the plan which is to increase the quality of life in the area and to create meeting places for residents with nodes of activity. Growth in the Fairmont Complex would be similar to the low-growth alternative (alternative 5A) prepared by GSA for the Fairmont Master Plan. This includes about 200,000 square feet of office uses and 80,000 square feet of commercial growth.

2. Impact Analysis

The Spread Development Alternative would have the following impacts relative to the adoption of the proposed General Plan.

a. Land Use and Economics

The key land use difference between the Spread Development Alternative and the proposed Plan is that the Spread Development Plan is meant to spread commercial and residential development along major corridors, whereas the Preferred Plan calls for concentrated development in certain areas. The projected population would be the same under both alternatives.

Under the Spread Alternative less research and development jobs and more commercial jobs would be created. This results from this Alternative's intention to spread commercial and residential development along the major corridors and other areas where capacity is available, reducing the opportunity for other land uses to be utilized. However, the total number of jobs projected for this alternative would be equal to that of the proposed Plan.

Much like the proposed Plan, implementation of this alternative would not physically divide the established community or result in any land use conflicts. However, since future development under this alternative would be dispersed as opposed to concentrated the vision of creating meeting places for residents with nodes of activity throughout the project area may not be realized. For this reason, this alternative is considered an insubstantial deterioration compared to the proposed Plan, with respect to land use.

b. Community Services

The demand for fire and police services, libraries, schools and parks, and recreational services would be equal to the demand under the Preferred Plan, due to equal population projections. Since both this alternative and the proposed Plan would include the same goals and policies addressing community services, this alternative would be considered equivalent to the proposed Plan, with respect to community services.

c. Traffic and Circulation

Buildout of the Spread Development Alternative would generate more vehicle trips than the Proposed General Plan during the PM peak hour. Growth generated by the proposed Plan would generate 5,484 AM peak hour trips and 8,465 PM peak hour trips, while growth generated by the Spread Development alternative would generate 5,449 AM peak hour trips and 9,151 PM peak hour trips. However, this difference in trip generation is considered minor.

Table 5-3 compares the future (year 2025) peak hour level of service (LOS) at each study intersection under the Preferred Plan and Spread Development Alternatives. LOS would be worse (indicating increased delay to motor vehicles) under the Spread Development Alternative at the Mission/Grove and Hesperian/Bockman intersections, but would result in no additional significant impacts other than those already identified for the Preferred Plan. At the Grant/Washington intersection, LOS during the PM peak hour would be slightly better under the Spread Development Alternative (LOS E) compared with the Preferred Plan (LOS F), but would still require mitigation as would be the case with the Preferred Plan. Based on this comparison, intersection delay under the Spread Development Alternative would not differ significantly from the Preferred Plan.

Since overall population growth would be the same under the Spread Development alternative, the amount of traffic distributed to regional freeways would not differ significantly from the proposed Plan. Significant and unavoidable impacts to regional freeways are anticipated under the Preferred Plan and each alternative, including the Spread Development alternative.

The Spread Development alternative would contain policies pertaining to bicycle, transit and pedestrian circulation that would not differ from the proposed Plan. However, the provision of adequate transit service would likely be slightly less feasible under the Spread Development Alternative, given the potential dispersal of development. Transit usage for regional trips would

TABLE 5-3 **INTERSECTION LEVEL OF SERVICE COMPARISON, SPREAD DEVELOPMENT ALTERNATIVE**

		LOS[a]/Delay (Seconds/ Vehicle)[b]		LOS[a]/Delay (Seconds/ Vehicle)[b]	
		Future with Proposed General Plan		Future with Spread Development Alternative	
Intersection	Control	AM Peak hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
East 14th/Ashland	Signal	D/37.2	C/31.1	C/26.1	D/42.4
East 14th/164th	Signal	B/17.6	C/21.9	B/18.1	C/23.7
Mission/Lewelling	Signal	B/12.4	C/28.8	B/12.6	C/28.8
Meekland/Lewelling	Signal	C/26.5	C/34.0	C/28.3	C/32.9
Mission/Hampton/Maddox	Signal	C/24.4	D/53.9	C/25.4	D/38.6
Washington/Grant	Signal	D/51.3	**F/>80.0**	D/48.1	**E/59.3**
Mission/Blossom	Side-street stop	D/28.7	**F/>50.0**	D/31.9	**F/>50.0**
Mission/Grove	Signal	C/34.6	D/52.7	E/79.3	E/60.9
Meekland/Blossom	Signal	C/22.5	C/28.8	C/23.3	C/31.1
Hesperian/Bockman	Signal	B/28.7	C/33.1	C/29.8	D/38.5

Notes: **Bold** indicates unacceptable peak hour intersection operations (LOS E on non-CMP routes; LOS F on CMP routes).
[a] LOS = Level of Service
[b] Delay in seconds calculated using the 2000 *Highway Capacity Manual*. Worst approach reported for side-street stop-controlled intersections.
Source: Fehr & Peers, 2006.

likely be slightly higher than under the Preferred Plan due to the transportation benefits associated with mixed use development.

The Spread Development Alternative would be an insubstantial deterioration compared to the Preferred Plan with regard to traffic and circulation.

d. Infrastructure

Under the Spread Development Alternative the overall commercial and residential demand for these services would be the same as the demand under the proposed Plan. Both alternatives would be subject to the guidelines and actions outlined in the proposed General Plan in order to mitigate the impacts associated with increased infrastructure demands. Since the overall demand on infrastructure would be equal for both alternatives, the Spread Development Alternative is considered to be the equivalent to the Preferred Plan.

e. Hazards and Hazardous Materials

Due to identical population projections under both the Spread Development Alternative and the Preferred Plan, the risks associated with hazardous material use, storage and transport would remain the same. Regardless of the level of risk, both alternatives would be subject to federal, State and local regulations pertaining to safe use, storage, disposal and transportation of hazardous materials. Furthermore, the Spread Development Alternative would be subject to the policies and actions outlined in the proposed General Plan. Thus, this alterative would be considered equivalent to the proposed General Plan with regard to hazardous materials.

f. Aesthetics

The policies and actions addressing urban design and visual resources contained in the proposed General Plan would also be implemented under the Spread Development Alternative. For this reason, the Spread Development Alternative is considered equivalent to the Preferred Plan with regard to aesthetics.

g. Cultural Resources

The policies and actions addressing cultural resources contained in the proposed General Plan would also be implemented under the Spread Development Alternative. For this reason, the Spread Development Alternative is considered equivalent to the Preferred Plan with regard to cultural resources.

h. Geology, Soils and Seismicity

The policies and actions addressing geology, soils and seismicity contained in the proposed General Plan would also be implemented under the Spread Development Alternative. Additionally, development under this alternative, like development under the proposed General Plan, would be required to adhere to the Uniform Building Code. For these reasons, the Spread Development Alternative is considered equivalent to the proposed General Plan with regard to geology, soils and seismicity.

i. Hydrology and Flooding

Since the changes in land use designations proposed by the Spread Development Alternative would be the same as under the proposed General Plan, this alternative would not present any substantially greater or less danger from hydrologic or flooding hazards than the proposed General Plan. Furthermore, the policies and actions outlined in the proposed General Plan concerning hydrologic and flooding hazards would also be applied to the Spread Development Alternative as well. Thus, the Spread Development Alternative would be considered equivalent to the proposed General Plan with regard to hydrology and flooding.

j. Biological Resources

The Spread Development Alternative would not result in development that would affect biological resources any more or less than development under the proposed General Plan, since the land use designations would be the same under both scenarios. Furthermore, both the Spread Development Alternative and the proposed General Plan would be subject to the policies in the Resource Conservation Element for Alameda County, which provides guidelines for the protection of open space and sensitive habitats within the Eden

Area. For these reasons, with respect to biological resources, the Spread Development Alternative is considered equivalent to the proposed General Plan.

k. Air Quality

Under this alternative, air quality impacts would be the same as the proposed General Plan. This alternative would not reduce emission sources, such as automobiles and industry; rather it would spread the sources out over a wider geographical area. Furthermore, under both alternatives the goals and policies addressing air quality would be the same. As such, air quality impacts under the Spread Development Alternative are considered the same as the proposed General Plan.

l. Noise

Due to regional increases in traffic, noise levels would increase over the course of 20 years, under both the Spread Development Alternative and the proposed General Plan. Certain policies addressing noise in a variety of county-wide plans and the proposed General Plan would help mitigate noise impacts, but would not eliminate them completely. Traffic noise levels in the Eden Area would not be measurably different regardless of the General Plan alternative that is selected. Furthermore, both alternatives would be guided by a number of noise policies and goals. As such, the Spread Development Alternative is neither better nor worse than the proposed General Plan.

m. Population, Housing and Employment

This alternative presents a more scattershot approach to growth in the Eden Area, with no major concentrations of growth in any one location. This alternative would have the same projected population as the proposed Plan, with relatively similar employment opportunities. This alternative would have less high-paying jobs, though, as less research and development jobs and more commercial jobs would be created versus the proposed Plan. Additionally, this alternative may not meet the overall objective of the Plan, which is to increase the quality of life in the area and to create meeting places for residents with nodes of activity. As with the proposed General Plan, this alterna-

tive itself would not displace housing or population. Thus, on balance, the Spread Development Alternative would result in the same population, employment and housing impacts as the proposed General Plan.

C. Expanded Jobs Alternative

1. Principal Characteristics

This General Plan alternative would provide for a maximum of job and revenue producing land uses throughout the Eden Area by increasing the amount of commercial, industrial and R&D/Office uses by 25 percent (to 7250 jobs). Residential growth is assumed to be the same as the other alternatives, derived from the Housing Element, plus additional single-family housing development. (The total amount of residential development would be 3644 units.) The Grant Avenue Area would have the same designation as in the proposed General Plan; however, residential development would not be allowed. Along the corridors, this alternative assumes that growth will be primarily commercial, with the exception of units identified in the Housing Element.

2. Impact Analysis

The Expanded Jobs Alternative would have the following impacts relative to the adoption of the proposed General Plan.

a. Land Use and Economics

The key land use difference between the Expanded Jobs Alternative and the proposed Plan is that the Expanded Jobs Alternative would allow for significantly more commercial development and significantly less residential development within the Eden Area. The land use designations under both alternatives would be the same, with the exception of the Grant Avenue area where residential development would not be permitted. As with the proposed General Plan, this alternative would not physically divide established communities or result in any land use conflicts that would not be addressed through land use policies in the proposed General Plan, since these policies would also apply under the this alternative as well.

Implementation of the Expanded Jobs Alternative would result in increased commercial development as compared to the proposed Plan. As a result, the vision of revitalizing residential neighborhoods in the Eden Area may not be realized. Under this alternative, most resources would be put into revitalizing the non-residential portions of the Eden Area. For these reasons, the Expanded Jobs Alternative is considered a substantial deterioration compared to the proposed General Plan, with respect to land use.

b. Community Services

Under the Expanded Jobs Alternative the demand for fire and police services, libraries, schools and parks and recreational services would be less than the proposed General Plan because of the smaller population. Thus, this alternative is considered to be an insubstantial improvement compared to the proposed General Plan.

c. Traffic and Circulation

Buildout of the Expanded Jobs Alternative would generate fewer vehicle trips than the Preferred Plan (Proposed General Plan) during the AM peak hour and slightly more trips than the Preferred Plan during the PM peak hour. Growth generated by the Preferred Plan would generate 5,484 AM peak hour trips and 8,465 PM peak hour trips, while growth generated by the Expanded Jobs Alternative would generate 5,020 AM peak hour trips and 8,539 PM peak hour trips. However, this difference in trip generation is considered minor.

Table 5-4 compares the future (year 2025) peak hour level of service (LOS) at each study intersection under the Preferred Plan and Expanded Jobs Alternative. The Expanded Jobs Alternative would result in a worse LOS (indicating increased delay to motor vehicles) during the AM peak hour at the East 14th/Ashland, Grant/Washington and Mission/Grove intersections. As with the proposed Plan, significant impacts would result under this alternative at the Grant/Washington and Mission/Blossom intersections. In addition, a significant impact would result under this alternative (but not under the pro-

TABLE 5-4 **INTERSECTION LEVEL OF SERVICE COMPARISON, EXPANDED JOBS ALTERNATIVE**

		LOS[a]/Delay (Seconds/ Vehicle)[b]		LOS[a]/Delay (Seconds/ Vehicle)[b]	
		Future With Proposed General Plan		Future With Expanded Jobs Alternative	
Intersection	Control	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
East 14th/Ashland	Signal	D/37.2	C/31.1	**F/>80.0**	C/28.7
East 14th/164th	Signal	B/17.6	C/21.9	B/17.5	C/20.8
Mission/Lewelling	Signal	B/12.4	C/28.8	B/12.6	C/33.2
Meekland/Lewelling	Signal	C/26.5	C/34.0	C/25.1	C/34.1
Mission/Hampton/Maddox	Signal	C/24.4	D/53.9	C/23.8	D/50.6
Washington/Grant	Signal	D/51.3	**F/>80.0**	**E/71.2**	**F/>80.0**
Mission/Blossom	Side-street Stop	D/28.7	**F/>50.0**	C/21.5	**F/>50.0**
Mission/Grove	Signal	C/34.6	D/52.7	E/77.7	D/49.7
Meekland/Blossom	Signal	C/22.5	C/28.8	C/21.4	C/27.1
Hesperian/Bockman	Signal	B/28.7	C/33.1	C/27.9	C/32.9

Notes: **Bold** indicates unacceptable peak hour intersection operations (LOS E on non-CMP routes; LOS F on CMP routes).
[a] LOS = Level of Service.
[b] Delay in seconds calculated using the 2000 *Highway Capacity Manual*. Worst approach reported for side-street stop-controlled intersections.
Source: Fehr & Peers, 2006.

posed Plan or other alternatives) at the East 14th/Ashland intersection, since the intersection would operate at LOS F during the AM peak hour, requiring additional mitigation improvements if this alternative were adopted.

Significant and unavoidable impacts to regional freeways are anticipated under the proposed Plan and each alternative, including the Expanded Jobs Alternative. The Expanded Jobs Alternative could result in a reduction in vehicle miles traveled if the provision of additional jobs and commercial services allows for a reduction in trip distances for Eden Area residents.

Additionally, the Expanded Jobs alternative would be subject to the same policies pertaining to bicycle, transit and pedestrian circulation as the proposed Plan. Therefore, the Expanded Jobs Alternative would be an insubstantial deterioration compared to the proposed General Plan with regard to traffic and circulation.

d. Infrastructure

Since the residential population projected for the Expanded Jobs Alternative would be less than proposed General Plan, the demand for water, wastewater and solid waste would be less. However, non-residential development under this alternative would be greater than the non-residential development projected under the proposed General Plan, and since the type of commercial growth cannot be determined at this plan-level analysis, it is assumed that infrastructure demand would be the same as under the proposed Plan.

The infrastructure policies which guide development and maintenance of water, waste water and solid waste services in the Eden area, would be applied under both alternatives. For these reasons, this alternative would have the same impacts of the proposed General Plan.

e. Hazards and Hazardous Materials

Due to a smaller population projection under the Expanded Jobs Alternative, the risks associated with hazardous material use, storage and transport would be less. Regardless of the level of risk, both alternatives would be subject to

federal, State and local regulations pertaining to safe use, storage, disposal and transportation of hazardous materials. Furthermore, the Expanded Jobs Alternative would be subject to the policies and actions outlined in the proposed General Plan. Thus, this alterative would be considered an insubstantial improvement to the proposed General Plan with regard to hazardous materials.

f. Aesthetics

The policy guidance addressing urban design and visual resources contained in the proposed General Plan would also be implemented under the Expanded Jobs Alternative. For this reason, the Expanded Jobs Alternative is considered equivalent to the proposed General Plan with regard to aesthetics.

g. Cultural Resources

The policy guidance addressing cultural resources contained in the proposed General Plan would also be implemented under the Expanded Jobs Alternative. For this reason, the Expanded Jobs Alternative is considered equivalent to the proposed General Plan with regard to cultural resources.

h. Geology, Soils and Seismicity

The policies and actions addressing geology, soils and seismicity contained in the proposed General Plan would also be implemented under the Expanded Jobs Alternative. Additionally, development under this alternative, like development under the proposed General Plan, would be required to adhere to the Uniform Building Code. For these reasons, the Expanded Jobs Alternative is considered equivalent to the proposed General Plan with regard to geology, soils and seismicity.

i. Hydrology and Flooding

Since the changes in land use designations proposed by the Expanded Jobs Alternative would be the same as under the proposed General Plan, this alternative would not present any substantially greater or less danger from hydrologic or flooding hazards than the proposed General Plan. Furthermore, the policies and actions outlined in the proposed General Plan concerning hydrologic and flooding hazards would also be applied to the Expanded Jobs

Alternative as well. Thus, the Expanded Jobs Alternative would be considered equivalent to the proposed General Plan with regard to hydrology and flooding.

j. Biological Resources

Development under this alternative would have the same impacts to biological resources as the proposed project, since both types of either development would have the potential to disturb biological resources. Furthermore, both the Expanded Jobs Alternative and the proposed General Plan would be subject to the policies in the Resource Conservation Element for Alameda County. This element provides guidelines for the protection of open space and sensitive habitats within the Eden Area. For these reasons, with respect to biological resources, the Expanded Jobs Alternative is considered equal to the proposed General Plan.

k. Air Quality

Under this alternative, impacts to air quality would be the same as under the proposed General Plan. This assumption is based primarily on regional growth projections in the area over the next twenty years. Development under both alternatives would be subject to the same air quality guidelines (depending on the specific type of commercial development). As such, the Expanded Jobs Alternative is seen as neither better nor worse than the proposed General Plan.

l. Noise

Due to existing ambient noise levels in the project area, it is anticipated that the potential impacts from the Expanded Jobs Alternative would be similar to the proposed Plan (depending on the specific types of commercial development). In addition, development would be subject to the noise policies of the General Plan Noise Element. As such, the Expanded Job Alternative is seen as neither better nor worse than the proposed General Plan.

m. Population, Housing and Employment

The Expanded Jobs Alternative would have fewer housing units, and substantially more employment-generating uses than the proposed Plan, resulting in a smaller population over the 20-year planning period, and more jobs. While the alternative would benefit the area's employment base, the smaller number of housing units would also make it more difficult to accommodate growth projected for the next 20 years in the area, and to provide needed affordable and other housing opportunities. As with the proposed General Plan, this alternative itself would not require displacement of housing and population.

On balance, the Expanded Jobs Alternative would result in the same population, employment and housing impacts as the proposed General Plan.

D. Environmentally Superior Alternative

CEQA requires the identification of the environmentally superior alternative in an EIR. Based on the foregoing analysis, which is summarized in Table 5-1, it can be seen that the Expanded Jobs Alternative is the environmentally superior alternative.

6 CEQA-REQUIRED ASSESSMENT CONCLUSIONS

As required by Section 15126 of the CEQA Guidelines, this chapter provides an overview of the impacts of the proposed project based on the technical topical analyses presented in this EIR. The topics covered in this chapter include growth inducement; cumulative impacts; unavoidable significant effects; significant irreversible changes; short-term uses versus long-term productivity; and impacts not found to be significant. A more detailed analysis of the effects the project would have on the environment is provided in Chapter 4: Environmental Evaluation.

A. Growth Inducement

A project is considered to be growth-inducing if it fosters economic or population growth beyond the boundaries of the project site. Typical growth inducements might be the extension of urban services or transportation infrastructure to a previously unserved or under-served area, or the removal of major boundaries to development. Not all growth inducement is necessarily negative. Negative impacts associated with growth inducement occur only where the projected growth would cause adverse environmental impacts.

Growth-inducing impacts fall into two general categories: direct and indirect. Direct growth-inducing impacts are generally associated with providing urban services to an undeveloped area. The provision of these services to a site, and subsequent development, can serve to induce other landowners in the vicinity to convert their property to urban uses. Indirect, or secondary growth-inducing impacts consist of growth induced in the region by additional demands for housing, goods, and services associated with the population increase caused by, or attracted to, a new project.

1. Direct Impacts

The Eden Area General Plan would directly induce population, employment and economic growth by allowing for development in areas that are more intense than allowed in current designations. The Eden Area General Plan

would result in the following growth patterns based on the expected growth assumptions for the planning area:

- Under buildout conditions in 2025, the proposed General Plan would add 16,472 new residents to the existing (year 2000) population within the Plan area limits, resulting in a projected population of 76,700. (Note: Although the projected growth could occur under the current General Plan, policies in the proposed Plan encourage redevelopment of large, underutilized lots, and allow for infill development at higher densities.)
- Under buildout conditions in 2025, the proposed General Plan would add 5,691 new residential units for a total of 29,014 units. (Note: The projected number of units could occur under the current General Plan, however, as noted above policies in the proposed Plan are intended to encourage infill housing in the area.)
- Under buildout conditions in 2025, the proposed General Plan would add 5,807 new jobs to the 8,530 jobs estimated by ABAG to exist in 2005. (Note: The projected number of jobs, projected by ABAG could occur under the existing General Plan.)

State law required the County to promote the production of housing to meet its fair share of the regional housing needs distribution made by ABAG. The housing and employment growth in the Eden Area would generally have beneficial effects by allowing the County to meet a portion of its fair share housing obligations.

The Eden Area General Plan includes policies to control how growth occurs in order to ensure that it enhances the area's identity and livability (Goal LU-1).

In addition, the types of growth envisioned by the Eden Area General Plan would be concentrated in specific areas and new development would be pedestrian-friendly, use land efficiently and promote transportation alternatives. Mixed-use development is encouraged in the plan. the growth envisioned in the Plan would result in regional benefits by promoting growth that encour-

ages less automobile dependence and supports regional transit systems, which could have associated air quality and noise effects. Encouraging infill growth would help preserve open space at the urban fringe and reduce development pressures on outlying lands.

For these reasons, the growth-inducing effects of implementation of the Eden Area General Plan would be beneficial to the County.

2. Indirect Impacts

The Eden Area General Plan encourages new growth in areas of the County that are served by transit and other urban services. Development in these areas would consist of infill development on the remaining vacant or under-utilized sites . Since the infrastructure is largely in place, secondary growth-inducing effects do not represent a significant environmental impact.

B. Unavoidable Significant Impacts

Under 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 the project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic and aesthetic significance.

The proposed General Plan would have three significant unavoidable impacts in traffic where growth would contribute traffic to regional freeways (I-880 and 1-580) that are currently operating unacceptably or are forecasted to operate unacceptably under year 2025 conditions. Additionally, growth would decline the LOS from E to F at the signalized intersection of Grant/Washington/Via Alamitos during PM peak hour. Furthermore, growth would increase delay at the side-street stop-controlled Mission/Blossom intersection during the PM peak hour.

The proposed General Plan would also have one significant unavoidable impact in air quality where growth would not be consistent with the latest Clean Air Plan assumptions since population and VMT growth would exceed ABAG and MTC projections.

C. Significant Irreversible Changes

Section 15126.2(c) of the CEQA Guidelines requires a discussion of whether a project will result in significant irreversible changes to the environment. A project would generally result in a significant irreversible change if it would:

- Primary and secondary impacts would commit future generations to similar uses.
- The project would involve a large commitment of nonrenewable resources.
- The project would involve uses in which irreversible damage could result from any potential environmental accidents associated with the project.

1. Changes in Land Use which Commit Future Generations

Development under the Eden Area General Plan would result in the conversion of vacant land to commercial and residential uses, and the intensification of underutilized areas. This development would constitute a long-term commitment to residential, commercial, parking and other urban uses. There are no changes in land use designations proposed in the Eden Area General Plan that would result in commitments of land that are not already designated for development in the current General Plan.

2. Consumption of Non-renewable Resources

Development allowed under the Eden Area General Plan would irretrievably commit nonrenewable resources to the construction and maintenance of buildings, infrastructure and roadways. These non-renewable resources include mining resources such as sand, gravel steel, lead, copper, and other metals. Buildout of the General Plan also represents a long-term commitment to

consumption of fossil fuels, including natural gas and gasoline. Increased energy demands would be used for construction, lighting, heating, and cooling of residences, and transportation of people within, to, and from the planning area. The Eden Area General Plan goals and policies would result in some savings in non-renewable energy supplies. However, use of these energy types for new development would result in the overall increased use of non-renewable resources. This represents a significant irreversible environmental change.

Implementation of the Eden Area General Plan would also result in an irreversible commitment of limited, renewable resources, such as water and lumber. New development under the plan would require the commitment of additional water service to serve new development, which would result in a permanent increase of water consumption. New development would also require the commitment of building materials, some of which would be made of renewable resources. These changes would represent significant irreversible environmental changes. Policies in the General Plan promoting resource and water conservation would result in some savings of renewable resources. Individual construction projects under the General Plan would need to be assessed through detailed project-level environmental review under CEQA. Such review could result in mitigation measures that help to reduce the commitment of resources. However, construction activities under the plan would result in the overall increased use of some renewable resources. This represents a significant irreversible environmental change.

3. Irreversible Damage from Environmental Accidents

Irreversible changes to the physical environment could occur from accidental release of hazardous materials with development activities. However, compliance with State and federal hazardous materials regulations and General Plan policies, as outlined in Chapter 4.5, is expected to maintain this potential impact to a *less than significant* level. No other irreversible changes are expected to result from the adoption and implementation of the Eden Area General Plan, since the plan does not propose any changes to land use com-

pared to the current General Plan that would result in the potential for significant increases in hazardous waste generation.

D. Impacts Found Not to Be Significant

CEQA allows environmental issues for which there is no likelihood of an impact to be "scoped out" during the EIR scoping process and not covered in an EIR. This section summarizes previous findings regarding the areas of concern which were "scoped out" and are not considered further in this EIR:

- **Mineral Resources.** There are no identified mineral resources and no access to such resources in the area.
- **Agricultural Resources.** There are no identified agricultural resources in the area.

E. Cumulative Impacts

For the purposes of this cumulative analysis, a county-level cumulative analysis is used. The potential cumulative effects of the Eden Area General Plan are summarized below.

1. Land Use

As the primary planning document for the Eden Area, the General Plan would have a less than significant impact in relation to potential conflicts with other applicable plans, policies and regulations discussed earlier in the EIR. Since the General Plan would not have a significant impact on such plans and policies, it would not result in a significant cumulative impact. Furthermore, any land use changes proposed for the General Plan would be seen as environmentally beneficial on a county-wide level because they stress uniformity and cohesiveness.

2. Population and Housing

Development in the Eden Area under the General Plan would result in regional increase in population, jobs and housing. According to ABAG, Alameda County is expected to grow to 1,796,300 people by 2025.[1] This would be an increase in county population of 279,200 over the 2005 population. Future development according to the land uses identified in the General Plan will result in population growth of approximately 16,560 in the Eden Area over the next twenty years. This would amount to only about five percent of the total growth expected for the county as a whole. Although growth in the Eden Area would contribute to cumulative regional growth, its contribution would not be cumulatively considerable.

Growth will occur in other Alameda County communities over the next 20 years. The County and other jurisdictions are required to use the General Plan process and other planning processes, such as Housing Elements to plan for and control future growth. As a result, there would not be a cumulative impact associated with unplanned growth.

3. Community Services

a. Police

Future regional growth will result in a need for expanded police service throughout Alameda County. However, only growth within the Eden Area would result in the need for the County to construct additional police facilities to serve its population, which could result in additional environmental impacts. The impact discussion above accounts for the potential growth within the area that would be provided police service by the County; as noted above, any potential impacts from development of new or expanded facilities that would be needed would be identified and evaluated at the time such facilities were proposed. Given this, the plan would not contribute to a significant cumulative impact associated with police services.

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[1] Castro Valley General Plan. Existing Conditions Report. Chapter 3-2 Population, Housing and Jobs. Figure 3-1. http://www.castrovalleygeneralplan.org/pdf/3_pop_ hous_ jobs.pdf. Accessed June 27, 2006.

b. Fire

Future regional growth would result in a need for expanded fire service throughout Alameda County. However, only growth within the Eden Area would result in the need for the ACFD and HFD to construct additional facilities, which could result in additional environmental impacts. The impact discussion above accounts for the potential growth within and its effects on the service levels of both the ACFD and HFD. No significant impact was identified in regards to the construction of new and expanded facilities. Therefore, the project would contribute to *no significant* cumulative impact associated with fire services.

c. Schools

As previously stated, both the SLZSD and HUSD collect developer fees to offset the population growth associated within new residential and commercial development within the areas serviced by the school districts. These fees are considered adequate mitigation to offset any impacts associate with new growth.

d. Libraries

The Eden Area has enough library space to serve the population and developmental growth under the General Plan. If nearby projects made use of Eden Area library services to a point where their established square footage to population ratio would be diminished, a significant cumulative impact would result. For example, Castro Valley Library services the Eden Area as well as the Castro Valley Area. Despite this overlap, Eden Area library services would not be affected due to their adequate library space. As a result no, significant cumulative impacts are anticipated.

e. Parks and Recreational Facilities

Future regional growth would result in increased demand for park and recreational facilities throughout Alameda County. As a result, the County and other jurisdictions would need to expand and construct additional parks and other recreational facilitates to meet the increased demand. State law allows

jurisdictions to require additional development to fund park improvements, which would ensure the provision of adequate parklands. As specific parkland expansion or improvement projects are identified, additional project specific, second-tier environmental analysis would be completed. As a result, a significant cumulative impact associated with parks and recreational facilities would not occur.

4. Infrastructure

a. Water

Development throughout Alameda County is increasing overall countywide demand for water. Unchecked population growth together with inadequate water planning could result in a significant cumulative impact. However, the jurisdictions which make up Alameda County have plans which provide policies and guidelines for water conservation. Furthermore, EBMUD serves the majority of the county and implements a Water Supply Management Program which accounts for future growth and the demand its places on water supplies. EBMUD is also currently searching for additional water supply sources for future use. Compliance with guidelines and policies outlined in jurisdictional plans as well as EBMUD water conservation programs would result in no significant cumulative impact.

b. Wastewater

Implementation of the General Plan and cumulative projects would increase the demand for regional wastewater treatment. Policies that apply to the Eden Area state that wastewater services should be expanded incrementally to accommodate growth and development. On a County-wide level, individual jurisdictions have plans that outline policies and guidelines for wastewater treatment facilities in response to increased development and population growth. Jurisdictional compliance with individual wastewater management plans would result in no significant cumulative impact.

c. Solid Waste

Future development within Alameda County will add substantial volumes of solid waste to the waste stream. The California Waste Management Act of

1989 (AB939) requires all cities to reduce waste within their boundaries through source reduction and recycling. All jurisdictions within Alameda County will be required to continue to reduce waste generation and divert materials from regional landfills. Compliance with existing local, county, and State regulations would result in no significant cumulative impact.

5. Visual Quality

Potential visual impacts resulting from implementation of the General Plan would be mitigated by policies contained in Chapter 2 Land Use. Thus, they could not cumulate with other development County-wide.

6. Cultural Resources

Cultural resources in Alameda County could be cumulatively impacted by future development. However, with the protective General Plan policies and actions in place, and with compliance with federal and State regulations, impacts to cultural resources from General Plan Projects would be less than significant. Regional development throughout the county could also affect cultural resources located in other areas of Alameda County. However, development in these areas would also be subject to local policies and federal and State laws regarding cultural resources. As a result, no significant cumulative impact would occur.

7. Geology, Seismicity and Soils

The increase in population that would result from implementation of the General Plan and County-wide projects would increase the number of people and structures that could be exposed to the region's known seismic hazards. Conformance with the Uniform Building Code and other measures to protect people and structures from geologic hazards would reduce this impact to a less-than-significant level on a project-by-project basis resulting in no cumulative impact.

8. Hazardous Materials

The increase in local population and employment under the General Plan could result in the increased use of hazardous household and commercial ma-

terials. Due to local, regional, State and federal regulations, potential project-level impacts associated with hazards and hazardous materials would be reduced to a less than significant level. Furthermore, as growth occurs within Alameda county, additional people would be exposed to the risk of hazardous materials and wastes. Much like Eden Area, Alameda County would be subject to local, regional, State and federal regulations, thus reducing the potential for cumulative impacts associated with hazardous materials to a less than significant level.

9. Hydrology and Flooding

Development within the Eden Area and Alameda County over the next 20 years will increase impervious surfaces, as well as the amount of pollutants in runoff. As a result, surface and groundwater quality could be affected. Although all jurisdictions that discharge into the San Francisco Bay must obtain a NPDES permit, a cumulative decrease in water quality still occurs over time. Impacts on water resources in the Eden Area would be reduced by implementing Best Management Practices in accordance with the NDPES and other regulations, as well as implementation of the water quality policies contained in the General Plan. New development within Alameda County would also result in an increase in runoff and may locate additional population and structures within areas subject to flooding. County-wide development would also be required to comply with regional, State and federal regulations addressing stormwater runoff, water quality and flooding. The regulations would reduce the potential for cumulative hydrology and water quality impacts to a less than significant level.

10. Biological Resources

Potential impacts in biologically significant areas in the Eden Area would be mitigated through general Plan policies and actions, and through compliance with federal and State regulations. Development outside of the Eden Area would also be subject to the same federal and State regulations addressing sensitive species. As a result, the cumulative impacts to biological resources or loss of habitat would be reduced to a less than significant level.

11. Air Quality

Implementation of the proposed General Plan along with potential development in other areas of the County and Bay Area would exacerbate existing regional efforts to achieve attainment of ambient air quality standards for ozone and particulate matter. In accordance with the BAAQMD CEQA Guidelines, cumulative impacts of the General Plan are assessed by comparing population and vehicle travel projections with those used by regional agencies for preparation of the latest clean air plan. Population and vehicle miles traveled (VMT) projections for the Eden Area and County, which would include cumulative growth, would exceed the assumptions used for the latest clean air planning efforts. Similar to the finding for the project, VMT in the entire County would grow at a faster rate than population. This would be a cumulative impact that the General Plan Update would make a cumulatively considerable contribution to these impacts. This is considered a cumulative significant impact.

12. Noise

Based on the results of the traffic study, implementation of the General Plan under future, cumulative conditions would not result in substantial traffic noise increases on area roadways over existing conditions. This impact would be less than significant. Although temporary construction noise would occur from cumulative projects, construction activities would be subject to standard noise-reduction measures and would not produce cumulative adverse noise impacts.

13. Traffic

Refer to Chapter 4.3 for a discussion of cumulative traffic impacts.

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8 GLOSSARY AND ACRONYMS

This section provides a list of common technical names, words and phrases utilized throughout this EIR.

A. Glossary

Adverse Impact: a negative consequence for the physical, social or economic environment resulting from an action or project.

Ambient Noise Level: The composite of noise from all sources near and far. The normal or existing level of environmental noise at a given location.

Archaeological Resource: Material evidence of past human activity found below the surface of the ground or water, portions of which may be visible above the surface.

Arterials: Major thoroughfares, which carry large volumes of traffic at relatively high speeds. Arterials are designed to facilitate two or more lanes of moving vehicles in each direction and rarely contain on-street parking.

Attainment Area: A geographic area in which levels of a criteria air pollutant meet the health-based primary standard (national ambient air quality standard, or NAAQS) for the pollutant. An area may have on acceptable level for one criteria air pollutant, but may have unacceptable levels for others. Thus, an area could be both attainment and nonattainment at the same time. Attainment areas are defined using federal pollutant limits set by EPA.

A-Weighted Sound Level, dBA: The sound pressure level in decibels as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise. All sound levels in this report are A-weighted, unless reported otherwise.

Baseline Emissions: The emissions that would occur without policy intervention (in a business-as-usual scenario). Baseline estimates are needed to determine the effectiveness of emissions reduction programs (often called mitigation strategies).

Below Normal Year Water Yield: A term used in planning for adequate water supplies. It is the amount of water that can be expected to be available 90 percent of the time. (See also "Normal Year" and Dry Year.")

Best Management Practices (BMPs): Guidelines for physical or administrative measures to prevent or reduce impacts to the natural environment, particularly water pollution or soil erosion.

Bicycle Lane (Class II facility): A corridor expressly reserved for bicycles, existing on a street or roadway in addition to any lanes for use by motorized vehicles.

Bicycle Path (Class I facility):bpaved route not on a street or roadway and expressly reserved for bicycles traversing an otherwise unpaved area. Bicycle paths may parallel roads but typically are separated from them by landscaping.

Bicycle Route (Class III facility): A facility shared with motorists and identified only by signs, a bicycle route has no pavement markings or lane stripes.

Blight: In this EIR, *urban decay*, or *blight*, is defined as physical deterioration that is prevalent and substantial to the point that it impairs the proper utilization of affected real estate or the health, safety, and welfare of the surrounding community. Physical deterioration includes, but is not limited to, abnormally high business vacancies, abandoned buildings and industrial sites, boarded doors and windows, parked trucks and long term unauthorized use of properties and parking lots, extensive gang or offensive graffiti painted on buildings, dumping of refuse or overturned dumpsters on properties, dead trees or shrubbery and uncontrolled weed growth or homeless encampments.

Buildout: Development of land to its full potential or theoretical capacity as permitted under current or proposed planning or zoning designations. (See "Carrying Capacity (3).")

California Environmental Quality Act (CEQA): A State law requiring State and local agencies to regulate activities with consideration for environmental protection. If a proposed activity has the potential for a significant adverse environmental impact, an Environmental Impact Report (EIR) must be prepared and certified as to its adequacy before taking action on the proposed project. General Plans require the preparation of a "program EIR."

Carbon Dioxide (CO_2): Colorless, odorless, non-poisonous gas that is a normal part of the ambient air. Carbon dioxide is a product of fossil fuel combustion. Although carbon dioxide does not directly impair human health, it is a greenhouse gas that traps terrestrial (i.e., infrared) radiation and contributes to the potential for global warming.

Carbon Monoxide (CO): A colorless, odorless, highly poisonous gas produced by automobiles and other machines with internal combustion engines that imperfectly burn fossil fuels such as oil and gas.

Carrying Capacity: Used in determining the potential of an area to absorb development: (1) The level of land use, human activity, or development for a specific area that can be accommodated permanently without an irreversible change in the quality of air, water, land, or plant and animal habitats; (2) the upper limits of development beyond which the quality of human life, health, welfare, safety, or community character within an area will be impaired; (3) the maximum level of development allowable under current zoning. (See "Buildout.")

Clean Air Act (CAA): The principle national legislation passed by Congress for air quality management. Originally passed in 1963, it was greatly changed and strengthened in 1970 and 1977. In 1990, the Clean Air Act Amendments

introduced significant changes in the federal approach to air quality management.

Collectors: Collectors connect local streets to arterials. They usually provide two travel lanes and may also have bicycle lanes.

Community Noise Equivalent Level (CNEL): A 24-hour energy equivalent level derived from a variety of single-noise events, with weighting factors of 5 and 10 dBA applied to the evening (7:00 PM to 10:00 PM) and nighttime (10:00 PM to 7:00 PM) periods, respectively, to allow for the greater sensitivity to noise during these hours.

Conservation: The management of natural resources to prevent waste, destruction, or neglect.

Criteria Air Pollutants: A group of very common air pollutants regulated by EPA on the basis of criteria (information on health and/or environmental effects of pollution). Criteria air pollutants are widely distributed all over the country.

Criteria/Criterion: A standard upon which a judgment or decision may be based. (See "Standards.")

Cultural Resources: Includes historic, archaeological and paleontological resources, as well as human remains.

Cumulative Impact: As used in CEQA, the total impact resulting from the accumulated impacts of individual projects or programs over time.

Day/Night Noise Level, Ldn: The average A-weighted noise level during a 24-hour day, obtained after addition of 10 decibels to levels measured in the night between 10:00 pm and 7:00 am.

dBA: The "A weighted" scale for measuring sound in decibels; weighs or reduces the effects of low and high frequencies in order to simulate human hearing. Every increase of 10 dBA doubles the perceived loudness though the noise is actually ten times more intense.

Decibel, dB: A unit describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure, which is 20 micropascals (20 micronewtons per square meter).

Drainage: Two definitions: (1) Surface water runoff; and (2) the removal of surface water or groundwater from land by drains, grading, or other means that include runoff controls to minimize erosion and sedimentation during and after construction or development, the means for preserving the water supply and the prevention or alleviation of flooding.

Dry Year: A term used in planning for adequate water supplies. The dry year is the most infrequent drought year, when the minimum amount of water is available. Statistically, this level would occur only once in one hundred years. This amount of water is less than or equal to what is available more than 99 percent of the time. (See also “Below Normal Year Water Yield” and “Normal Year.”)

Dwelling Unit: The place of customary abode of a person or household which is either considered to be real property under State law or cannot be easily moved.

Earthquake Fault Zone: The State of California, Alquist-Priolo Earthquake Fault Zoning Act identifies sites within 1,000 foot wide zone with the fault at the center as Earthquake Fault Zones. The Alquist-Priolo Act requires that these sites undergo specialized geologic investigations prior to approval of certain new development. State law re-quires that these zones be incorporated into local general plans.

Effluent: Treated wastewater that flows out of a wastewater treatment plant or other water processing system.

Emission: Discharges into the atmosphere from such sources as smokestacks, residential chimneys, motor vehicles, locomotives and aircraft.

Endangered Species: A species of animal or plant is considered to be endangered when its prospects for survival and reproduction are in immediate jeopardy from one or more causes.

Endemic Species: Species native to, and restricted to, a particular geographic region.

Environmental Impact Report (EIR): A report required of general plans by the California Environmental Quality Act and which assesses all the environmental characteristics of an area and determines what effects or impacts will result if the area is altered or disturbed by a proposed action. (See "California Environmental Quality Act.")

Equivalent Noise Level, Leq: The average A-weighted noise level during the measurement period.

Erosion: Two definitions: (1) The loosening and transportation of rock and soil debris by wind, rain, or running water; and (2) the gradual wearing away of the upper layers of earth.

Expansive Soils: Soils that swell when they absorb water and shrink as they dry.

Fault: A fracture in the earth's crust forming a boundary between rock masses that have shifted.

Flood Insurance Rate Map (FIRM): For each community, the official map on which the Federal Insurance Administration has delineated areas of special flood hazard and the risk premium zones applicable to that community.

Flood, 100-Year: The magnitude of a flood expected to occur on the average every 100 years, based on historical data. The 100-year flood has a 1/100, or one percent, chance of occurring in any given year.

Flood Zone: The designated area delineated by FEMA on the Flood Information Rate Maps (FIRM) where flooding could occur during a "100-Year Flood."

Floor/Area Ratio (FAR): The size of a building in square feet (gross floor area) divided by net land area, expressed as a decimal number. For example, a 60,000 square-foot building on a 120,000 square-foot parcel would have a floor area ratio of 0.5. The FAR is used in calculating the building intensity of non-residential development.

Frequency, Hz: The number of complete pressure fluctuations per second above and below atmospheric pressure.

General Plan: A city's basic planning document, which provides the blueprint for development throughout the community and is the vehicle through which competing interests and needs of the citizenry are balanced and meshed.

Geographic Information Systems (GIS): A method of storing geographic information on computers. Geographic information can be obtained from a variety of sources, including topographic maps, soil maps, aerial and satellite photos and remote sensing technology.

Grade: The average level of the finished surface of the ground adjacent to the exterior walls of the building.

Grade, Existing: The vertical elevation of the ground surface prior to excavating or filling.

Gray Water: Untreated household waste water which has not come into contact with toilet waste. This includes used water from bathtubs, showers, bathroom wash basins, and water from clothes washing machines and laundry tubs. Gray water does not include wastewater from kitchen sinks, dishwashers, or laundry water from soiled diapers.

Groundwater: Water under the earth's surface, often confined to aquifers capable of supplying wells and springs.

Habitat: The particular living place which provides an environment suitable for survival of an organism, a species or a community.

Hazardous Waste: Any refuse or discarded material or combinations of refuse or discarded materials in solid, semisolid, liquid, or gaseous form which cannot be handled by routine waste management techniques because they pose a substantial present or potential hazard to human health or other living organisms because of their chemical, biological, or physical properties.

Historic Preservation: The preservation of historically significant structures and neighborhoods in order to facilitate restoration and rehabilitation of the building(s) to a former condition.

Historic Structure: Any structure that is (a) listed in the National Register of Historic Places or is eligible for individual listing on the National Register; (b) certified or preliminarily determined by the Secretary of the Interior as contributing to the historical significance of a registered historic district or a district preliminarily determined by the Secretary to qualify as a registered historic district; or (c) designated by the city as a heritage preservation site.

Household: All persons occupying a single dwelling unit.

Impervious Surface: Surface through which water cannot penetrate, such as roof, road, sidewalk and paved parking lot. The amount of impervious surface increases with development and establishes the need for drainage facilities to carry the increased runoff.

Infill: Development or redevelopment of land that has been bypassed, remained vacant, and/or is underused as a result of the continuing urban development process.

Jobs/Housing Balance: A measure of the number of jobs available in a specific area compared to the number of employed residents living in the housing units in the same area. Jobs/Housing balance does not evaluate the type of jobs available or whether the employees in the jobs are the same people as the employed residents living in the households.

Jobs/Housing Ratio: The jobs/housing balance divides the number of jobs in an area by the number of employed residents. A ratio of 1.0 indicates a balance. A ratio greater than 1.0 indicates a net in-commute; less than 1.0 indicates a net out-commute.

Land Use: The occupation or utilization of an area of land for any human activity or any purpose.

Lmax, Lmin: The maximum and minimum A-weighted noise level during the measurement period.

L01, L10, L50, L90: The A-weighted noise levels that are exceeded 1 percent, 10 percent, 50 percent and 90 percent of the time during the measurement period.

LAFCO: Local Agency Formation Commission: A state agency that works in an individual county with the authority to set the boundaries and Spheres of Influence of local agencies such as cities and special districts.

Level of Service (LOS) Standard, Traffic: A scale that measures the amount of traffic that a roadway or intersection can accommodate, based on such factors as maneuverability, driver dissatisfaction and delay.

Local Street: Provides direct access to properties; generally they carry the lowest traffic volumes.

LOS A: Indicates a relatively free flow of traffic, with little or no limitation on vehicle movement or speed.

LOS B: A steady flow of traffic, with only slight delays in vehicle movement and speed

LOS C: A reasonably steady, high-volume flow of traffic, with some limitations on vehicle movement, speed and occasional backups on critical approaches.

LOS D: Designates where the level of traffic nears an unstable flow. Intersections still function but short queues develop and cars may have to wait through one cycle during short peaks.

LOS E: Traffic characterized by slow movement and frequent (although momentary) stoppages. This type of congestion is considered severe, but is not uncommon at peak hours, with frequent stopping, longstanding queues and blocked intersections.

LOS F: Represents unsatisfactory stop-and-go traffic characterized by "traffic jams" and stoppages of long duration. Vehicles at signalized intersections usually have to wait through one or more signal changes and "upstream" intersections may be blocked by the long queues.

Liquefaction: The transformation of loose water saturated granular materials (such as sand or silt) from a solid into a liquid state. A type of ground failure that can occur during an earthquake.

Maximum Credible Earthquake: The maximum credible earthquake is defined as the earthquake which produces the greatest levels of ground motion at the site as a result of the largest magnitude earthquake that could reasonably occur along the recognized faults or within a particular seismic source.

Mercalli Intensity Scale: A subjective measure of the observed effects (human reactions, structural damage, geologic effects) of an earthquake. Expressed in Roman numerals from I to XII.

Mitigation: Measures taken to eliminate or minimize damages from development activities by replacement of the resource or other means of compensation.

Mixed-Use: Development that allows or encourages different but compatible uses to be located in close proximity to each other, for example, allowing retail or office space in the same building or on the same parcel as multifamily housing. As distinguished from a single use land use designation or zone, mixed-use refers to an authorized variety of uses for buildings and structures in a particular area. The goal of mixed-use development is to provide jobs and services close to where people live, thereby reducing the need to drive and encouraging people to walk or bike to their destination.

Modes: Various means of transportation, including private autos, taxis, local buses, interregional bus service, light rail systems, heavy rail service and air transportation.

Moment Magnitude (Mw): Moment magnitude is based on the seismic moment at the source, or hypocenter, of the earthquake. The moment magnitude scale is a way of rating the seismic moment of an earthquake with a simple, logarithmic numerical scale similar to the original Richter magnitude scale. Because it does not "saturate" the way local magnitude does, it is used for large earthquakes -- those that would have a local magnitude of about 6 or larger.

National Register of Historic Places: The listing maintained by the US National Park Service of areas that have been designated as historically significant.

National Pollutant Discharge Elimination System (NPDES): The national program for controlling discharges of pollutants from point sources (e.g., municipal sewage treatment plants, industrial facilities) into the waters of the United States.

Native Species: A species that arrived in a particular area without human interference.

Natural Habitat Area: An area that sustains animal and vegetative biotic resources that has not been improved or disturbed. Natural Habitat Areas can also be areas that were previously "disturbed" and have been reclaimed or rehabilitated.

Nitrogen Oxide(s): A reddish brown gas that is a byproduct of combustion and ozone formation processes. Often referred to as NOx, this gas gives smog its "dirty air" appearance.

Nitrogen Oxides (NOx): Gases consisting of one molecule of nitrogen and varying numbers of oxygen molecules. Nitrogen oxides are produced, for example, by the combustion of fossil fuels in vehicles and electric power plants. In the atmosphere, nitrogen oxides can contribute to formation of photochemical smog, impair visibility and have health consequences; they are considered pollutants.

Noise: Any sound that is undesirable because it interferes with speech and hearing, or is intense enough to damage hearing, or is otherwise annoying. Noise, simply, is "unwanted sound."

Noise Attenuation: Reduction of the level of a noise source using a substance, material, or surface, such as earth berms and/or solid concrete walls.

Noise Contour: A line connecting points of equal noise level as measured on the same scale. Noise levels greater than the 60 Ldn contour (measured in dBA) require noise attenuation in residential development.

Nonattainment Zone: A designation assigned to an area when the levels of a specific pollutant or pollutants in the air fail to meet (or attain) federal or State standards for that pollutant.

Non-Conforming Use: A use that was valid when brought into existence, but no longer permitted by later regulation. "Non-conforming use" is a generic term and includes (1) non-conforming structures (because their size, type of construction, location on land, or proximity to other structures is no longer permitted); (2) non-conforming use of a conforming building; (3) non-conforming use of a non-conforming building; and (4) non-conforming use of land. Any use lawfully existing on any piece of property that is inconsistent with a new or amended General Plan, and that in turn is a violation of a zoning ordinance amendment subsequently adopted in conformance with the General Plan, will be a non-conforming use. Typically, non-conforming uses are permitted to continue for a designated period of time, subject to certain restrictions.

Non-Native Species: A species that was introduced to an area as a result of human interference.

Normal Year: A term used in planning for adequate water supplies. Refers to those years when the County can expect to receive all of the water it has contracted to receive (entitlement). This is because supply conditions (e.g., the amount of rain and snow collected in reservoirs, groundwater availability) are normal. Based on historical experience, normal years occur 63 percent of the time. (See also "Below Normal Year Water Yield" and "Dry Year.")

Open Space: Land and water areas retained for use as active or passive recreation areas or for resource protection in an essentially undeveloped state.

Overlay: A land use designation on the Land Use Map, or a zoning designation on a zoning map, that modifies the basic underlying designation in some specific manner.

Ozone: A colorless gas with a pungent odor, having the molecular form of O3, found in two layers of the atmosphere, the stratosphere (about 90 percent of the total atmospheric loading) and the troposphere (about 10 percent). Ozone is a form of oxygen found naturally in the stratosphere that provides a protective layer shielding the Earth from ultraviolet radiation's harmful health effects on humans and the environment. In the troposphere, ozone is a chemical oxidant and major component of photochemical smog. Ozone can seriously affect the human respiratory system.

Programmatic Agreement (PA): A framework for ensuring site artifacts are identified and assessed for interpretive or educational value. It is a document that records the terms and conditions agreed upon to resolve the potential adverse effects of a Federal agency program, complex undertaking or other situations in accordance with Sec. 800.14(b).

Particulate Matter (PM): Solid particles or liquid droplets suspended or carried in the air (e.g., soot, dust, fumes, mist).

Particulate Matter (PM_{10}): A criteria air pollutant. Particulate matter includes dust, soot and other tiny bits of solid materials that are released into and move around in the air. Particulates are produced by many sources, including burning of diesel fuels by trucks and buses, incineration of garbage, mixing and application of fertilizers and pesticides, road construction, industrial processes such as steel making, mining operations, agricultural burning (field and slash burning) and operation of fireplaces and woodstoves. Particulate pollution can cause eye, nose and throat irritation and other health problems.

Pedestrian-Oriented Design: An approach to site and neighborhood design intended to facilitate movement on foot in an area, as opposed to design that primarily serves automobile movement. Examples of pedestrian-oriented design include pathways following the most direct route from sidewalk to front door, continuous building streetwalls with shop windows, outdoor cafes, street trees and benches.

Pollutant: Any introduced gas, liquid, or solid that makes a resource unfit for its normal or usual purpose.

Remediation: The action or measures taken, or to be taken, to lessen, clean-up, remove, or mitigate the existence of hazardous materials existing on the property to such standards, specifications, or requirements as may be established or required by federal, state, or county statute, rule, or regulation.

Richter Scale: A measure of the size or energy release of an earthquake at its source. The scale is logarithmic; the wave amplitude of each number on the scale is 10 times greater than that of the previous whole number.

Right-of-Way (ROW): Publicly-owned land, property or interest therein, usually in a strip, within which the entire road facility, including travel lanes, medians, sidewalks, shoulders, planting areas and utility easements must reside. The ROW is usually defined in feet, and is acquired for or devoted to multi-modal transportation purposes including bicycle, pedestrian, public transportation and vehicular travel.

Riparian Lands: Riparian lands are comprised of the vegetative and wildlife areas adjacent to perennial and intermittent streams. Riparian areas are delineated by the existence of plant species normally found near freshwater.

Runoff: That portion of rain or snow that does not percolate into the ground and is discharged into streams instead.

Section 106: Section 106 of the National Historic Preservation Act requires federal agencies to consider the effects of their actions on historic properties and seek comments on their actions from an independent reviewing agency.

Seiche: An earthquake generated wave in an enclosed body of water such as a lake, reservoir, or bay.

Seismic: Caused by or subject to earthquakes or earth vibrations.

Seismic Hazard Zone: The State of California, Seismic Hazards Mapping Act identifies areas within the state where landslides and liquefaction are most likely to occur. The Act requires special investigation of these sites before some types of buildings may be constructed. Property owners must disclose that property lies within such a zone at the time of sale.

Sensitive Receptors: Uses sensitive to noise and air, such as residential areas, hospitals, convalescent homes and facilities and schools.

Slope: Land gradient described as the vertical rise divided by the horizontal run, and expressed in percent.

Solid Waste: Any unwanted or discarded material that is not a liquid or gas. Includes organic wastes, paper products, metals, glass, plastics, cloth, brick, rock, soil, leather, rubber, yard wastes and wood, but does not include sewage and hazardous materials. Organic wastes and paper products comprise about 75 percent of typical urban solid waste.

Specific Plan: A legal tool authorized by Article 8 of the California Government Code (Section 65450 et seq.) for the systematic implementation of the General Plan for defined portion of a community's planning area. A specific plan must specify in detail the land uses, public and private facilities needed to support the land uses, phasing of development, standards for the conservation, development, use of natural resources and a program of implementation measures, including financing measures.

Sphere of Influence: A planning tool used by cities to identify the potential future municipal boundary. In most cases, the sphere includes the area just beyond a city's boundary and includes territory and neighborhoods surrounding the city. A sphere allows cities to plan in cooperation with other agencies for public services such as police, fire, parks, roads and flood control. LAFCOs designate Spheres of Influence based on the identification of the probable ultimate boundaries of each city.

Transit-Oriented Development (TOD): Developing at above-average densities, often with mixed uses, in area within a quarter-mile of a transit node or transit facility, such as a rail or bus station. The goal of transit-oriented development is to provide jobs, housing and services within walking distance of transit, in order to encourage transit use and reduce dependency on automobiles.

Trip Generation: The dynamics that account for people making trips in automobiles or by means of public transportation. Trip generation is the basis for estimating the level of use for a transportation system and the impact of additional development or transportation facilities on an existing, local transportation system.

Tsunami: A large ocean wave generated by an earthquake in or near the ocean.

Unincorporated Area: Encompasses properties that are located outside of cities. Development in the unincorporated area is subject to County jurisdiction.

Volume-to-Capacity Ratio (V/C Ratio): A measure of roadway operation based on the number of vehicles passing through a particular road segment divided by the theoretical maximum design capacity of the segment.

Waste Diversion: Any combination of recycling, reuse, composting activities, decrease in consumption, or increase in durability that reduces the amount of waste transported to and disposed of at landfills.

Wastewater: The spent or used water from individual homes, a community, a farm, or an industry that often contains dissolved or suspended matter.

Wetlands: Habitats where the influence of surface or groundwater has resulted in development of plant or animal communities adapted to aquatic or intermittently wet conditions. Wetlands include tidal flats, shallow subtidal areas, swamps, marshes, wet meadows, bogs and similar areas.

Zoning: The division of a city or county by legislative regulations into areas, or zones, which specify allowable uses for real property and size restrictions for buildings within these areas; a program that implements policies of the General Plan.

B. Acronyms

AB	Assembly Bill
AST	aboveground storage tank
CAP	Clean Air Plan
CARB	California Air Resources Board
CEQA	California Environmental Quality Act
CO	carbon monoxide
EIR	Environmental Impact Report
EPA	(United States) Environmental Protection Agency
FEMA	Federal Emergency Management Agency
LOS	Level of Service
NO_2	nitrogen dioxide
NOx	nitrogen oxides
NRFPP	Napa River Flood Protection Project
O_3	ozone
PM_{10}	particulate matter less than 10 micrometers in aerodynamic diameter
$PM_{2.5}$	particulate matter less than 2.5 micrometers in aerodynamic diameter
ppm	parts per million
SB	Senate Bill
SO_2	sulfur dioxide
TRB	Transportation Research Board